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A Phenomenographical Study on the Perceived Factors Affecting Certified Registered Nurse Anesthetist Role Transition

Andy John Tracy
University of Wisconsin-Milwaukee

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A PHENOMENOGRAPHICAL STUDY ON THE PERCEIVED FACTORS AFFECTING

CERTIFIED REGISTERED NURSE ANESTHETIST ROLE TRANSITION

by

Andy J Tracy

A Dissertation Submitted in

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ABSTRACT

A PHENOMENOGRAPHICAL STUDY ON THE PERCEIVED FACTORS AFFECTING
CERTIFIED REGISTERED NURSE ANESTHETIST ROLE TRANSITION

by

Andy J Tracy

The University of Wisconsin-Milwaukee, 2016
Under the Supervision of Professor Kim Litwack, PhD

The role transition from student registered nurse anesthetist (SRNA) to certified

registered nurse anesthetist (CRNA) can be challenging and stressful. A qualitative

phenomenographical research approach was utilized to identify the factors affecting CRNA role

transition. Online recruitment and interviewing techniques were utilized to sample recently

graduated CRNAs in order to identify these factors. Five factors were found promoting CRNA

role transition: mastery of self-efficacy and confidence, expert coaching and guidance,

supportive work environment, peer support, and previous experience. Four factors were also

found impeding CRNA role transition: practice limitations, lack of orientation and preceptor,

hostile work environment, and decreased work or case load. This study has implications for

employers of newly graduated CRNAs in implementing interventions which may promote

successful role transition and guide future research.

I dedicate this dissertation to my loving family and friends. Particularly to my wonderful partner

Kris and my brother Wayne who have always encouraged me to set my goals high and have

never doubted my ability to achieve. Also, I dedicate this dissertation to my late parents, Earl

and Carol Tracy, who taught me to be happy in who I am while striving to make myself better.

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I would like to thank all of those people who helped make this dissertation possible. First and foremost, Dr. Kim Litwack, my committee chair and advisor, who was there every step of the way with guidance and encouragement. Thank you to the entire faculty for teaching me to only to accept the best from myself and to be a good leader and scientist, not just through course work, but by example. I also extend my appreciation to my committee members, Dr. Peninnah Kako, Dr. Nadya Fouad, Dr. Christine Kovach, and Dr. Mike Kremer, all of whom were more than generous with their expertise and precious time. Finally, I would like to recognize my coworkers and fellow students, past and present, as the inspiration for this dissertation and my life's work.

CHAPTER ONE

Certified registered nurse anesthetists (CRNAs) are advanced practice nurses (APNs) specializing in anesthesia. Role transition is never easy but is even more complicated when experienced RNs earn APN specialization education. The stages of all advanced practice role transitions are stages similar to those Benner (1982) identifies in her theory on novice to expert nursing practice. This role transition from registered nurse (RN) to CRNA is challenging and stressful. In other APN research it has been suggested that APN role transition for nurse practitioners takes place in two phases (Heitz, Steiner, & Burman, 2004). Phase I takes place when the experienced RN returns to APN specialty school and becomes a student again while Phase II occurs when the APN student graduates and transitions into and takes on the APN specialty role. The journey for the CRNA starts when the expert critical care RN enters a nurse anesthesia program and transitions into the role of a student registered nurse anesthetist (SRNA) which Heitz, Steiner, and Burman would refer to as Phase I. The journey or Phase II continues through the education process past graduation into the first few years of CRNA practice. A limited number of studies have identified factors and characteristics during the CRNA educational process. Factors affecting the role transition of the SRNA to CRNA have not been well studied and the plan for this dissertation is to build on previous research utilizing similar studies in other APN specialties to address this gap in the literature. The current study was undertaken to gain an understanding on what factors are perceived by CRNAs as affecting their role transition from SRNA to CRNA after graduation into the first few years of practice.

This chapter provides the background and context of this dissertation study. The statement of the problem, purpose of the study, and the research questions are identified. The research approach, theoretical frameworks underpinning the study, and the operational

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definitions for the study are also discussed. Finally, assumptions underlying the study are identified included along with the study's limitations, expected findings, and the researcher's perspectives.

Statement of the Problem

Thirty six states report a moderate shortage of anesthesia providers, either nurse anesthetists or anesthesiologists or both, making it difficult for needed surgeries to be completed (Jordan, 2011). The RAND Corporation analyzed the market trends of anesthesia providers and has predicted a continuing shortage ranging from 5.2% to 10% vacancy rate (Daughtery, Fonesca, Kumar, & Michaud, 2010). CRNAs practice in every health care setting in the United States (US) and administer anesthesia to over 32 million patients (Wilson, 2012). In some states, CRNAs are the sole anesthesia providers in rural facilities and CRNAs are the primary anesthesia providers to U.S. military personnel. Furthermore, according to the U.S. Department of Health and Human Services, National Center for Health Statistics (2009) procedures requiring anesthesia increased from approximately 70 million to 100 million from 1996 to 2006. Previous research indicates that CRNAs experiencing inadequate role transition left nurse anesthesia and stated their reasons for leaving included role conflict, unclear role expectations, and increased job stress and dissatisfaction (Jones & Fitzpatrick, 2009). Turnover rates for CRNAs practicing in acute care settings are difficult to track due to lack of reporting (83% of hospitals do not report) but have been estimated at 4.5% with the cost to replace professional nurses reaching twice the APN's annual salary (Nursing Solutions, 2015). The complexity of the CRNA's transition requires substantial and consistent support to ensure success, satisfaction, and retention. Identifying the factors which influence CRNA role transition may allow employers

and anesthesia training programs to create interventions that allow for optimal opportunity to influence and promote healthy, successful role transitions of SRNAs to CRNAs.

CRNA Role Transition

While there are many similarities in knowledge and skills amongst APN specialties, there are also differences in their didactic education and clinical training (Hamric & Hanson, 2003). CRNAs differ from other APN specialties and other healthcare providers in how CRNAs are trained and therefore how CRNAs transition into their new roles as providers may be different as well. These differences influence the factors affecting the role transitions from RNs into APN practices. Experienced RNs enter nurse anesthesia training in which they transition from RN to SRNA. The factors affecting this stage of the transition have been previously examined in its infancy through a pilot study (Tracy, 2015). Once the SRNA graduates from nurse anesthesia school with an advanced degree and passes the certification examination the next step in the transition process occurs and the SRNA transitions into the CRNA role. Factors affecting the role transition of the SRNA to CRNA have not been well studied and the plan for this dissertation was to build on previous research in other APN specialties to address this gap in the literature. This will further allow CRNAs to be a continued, positive influence in the evolving U.S. health care system and in the profession of nursing.

<div align="center">

Theoretical Frameworks

</div>

The theoretical framework for this study was based on Benner's Novice to Expert Theory (Benner, 1984) and on Appreciative Inquiry (Hammond, 1998). Benner's Theory was used to guide the established a time period from which subjects will be recruited and has been utilized in nursing research on the phenomenon of role transition utilizing qualitative methods. Benner (1984) theorized that competence in nursing is reached at two to three years of full time practice.

Previous research has identified Benner's theory as appropriate for studying APN role transition. Evidence of empirical testing in Benner's Theory has been well documented in nursing research (Altmann, 2007). McEwen and Wills (2011) cited between the years of 1999 through 2009 over 80 listings of articles that cited Benner's work. Benner's theory has been used extensively in research involving undergraduate as well as graduate and advanced practice nursing.

Appreciative Inquiry focuses on the positive aspects of a system, organization, or situation (Hammond, 1998). Appreciative Inquiry also theorizes that all parts of a system, organization, or situation are defined by the whole and through studying the whole what has worked well may be identified. An assumption of Appreciative Inquiry framework is that factors leading to success may be identified through studying what is working or successful given a phenomenon. Therefore, examining CRNAs who have been in full time practice for two to three years should lead to successful identification of the factors affecting the role transition of CRNAs.

Purpose of the Study

The purpose of this dissertation was to examine the perceptions of recently graduated CRNAs on the factors affecting their role transition into their new career as a CRNA. The intention was to develop a rich portrait of the participants' experiences to gain greater insight on the factors influencing CRNA role transition. A qualitative research design utilizing an online phenomenographical design was chosen for this dissertation because very little research has been performed on the role transition of SRNA to CRNA. Qualitative methodology is considered appropriate when investigating phenomena when there is limited prior research on the phenomena (Joubish, Khurram, Ahmed, Fatima, & Haider, 2011). To achieve this understanding of the problem, the following research questions were designed to guide this study:

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1. What factors do participants perceive might help them to be successful in their new role?

2. What factors do participants perceive have impeded and/or continue to impede their transition?

3. What interventions do participants perceive as having been helpful in their transition that employers of new CRNAs could implement to assist with their transition?

Research Approach

With the approval of the university's institutional review board (IRB), the theoretical perspective for this dissertation was a phenomenographical, descriptive, qualitative approach to investigate the common experiences which CRNAs perceive lead to their successful transition from SRNA into their new role as a CRNA. Phenomenography is the study of the different ways in which people experience, conceptualize, realize, and understand various aspects of a phenomenon (Barnard, McCosker, & Gerber, 1999). This qualitative descriptive approach was utilized to gain an understanding of the CRNAs' perceptions during their role transition and allow for a broad selection of data offered through the description of their experiences (Creswell, 2002; Sandelowski, 2010). Online recruitment and computer mediated communication technologies were used in this study. Salmon's (2015) conceptual framework for online recruitment and interviewing was utilized in the designing of this study. In-depth interviews through Skype© video conferencing were the primary method of data collection. The number of participants required for a qualitative study varies and interviewing was conducted until saturation of data was achieved.

A pilot study consisting of in-depth interviews with three participants was performed to test logistics and expose any deficiencies before the full study was performed. The researcher's

major professor and a qualitative expert reviewed the data of the pilot interviews to ensure rigor was maintained. Study participants were identified by a pseudonym and all interviews were recorded and transcribed verbatim. The information gained on any logistical issues during the pilot study were addressed and incorporated into the full study's design. No significant changes were made to logistics and the data collected from two of the pilot study participants were included in the full study data.

Selection of the research sample in qualitative research is often purposeful to gain information-rich data (Bloomberg & Volpe, 2008). In qualitative studies the number of participants is less important than reaching data saturation. Polit and Beck (2014) described data saturation as being achieved when redundancy occurs and the addition of new participants does not yield additional data. Data collection continued until data saturation was achieved at thirteen participants and then two additional participants were interviewed to achieve confirmation of data saturation. No additional themes emerged from the data gained by the two additional participants. Data saturation was agreed upon by the primary researcher and two experienced supervising researchers for a total of 15 participants. Rigor and credibility was maintained through periodic review of data and themes by the researcher's major professor and a qualitative expert throughout the study's entirety.

Definitions of Terminologies

CRNA: an individual who has completed an accredited school of nurse anesthesia and has passed the national certification examination. For this study, CRNAs who have been practicing between two to four years were recruited. This time period in practice was chosen based on Benner's Theory, Stage III- Competent (Benner, 1982). During this stage it is theorized that CRNAs have attained enough experience to refine their practice and will be able to

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adequately reflect on the factors which have affected their transition to becoming competent anesthesia providers. This time period was also chosen because it has not been too long since the transition that CRNAs might forget some of the factors that influenced them early in the transition.

Computer mediated communication: direct interaction between researcher and participant occurring through video conferencing. For this study the communication technology utilized was Skype© video conferencing software for online individual interviews.

SRNA: an individual who is a registered nurse and is currently enrolled in a nurse anesthesia program but has not yet graduated or passed the national certification examination.

Role Transition: for the purpose of this study, role transition is the movement of an individual who is an experienced critical care nurse to a new role as a CRNA. The role transition being examined is a singular movement from the old role of critical care nurse to the new role of CRNA. This study will not take into account individuals who leave the profession after certification or individuals who drop out during the transition process.

Researcher's Standpoint

In phenomenographical research it is important for the researcher to develop an understanding of how the researcher's personal experiences impacts the research. This researcher's decision to explore the factors affecting CRNA role transition was influenced by a number of factors. The researcher's previous experiences as a CRNA transitioning from SRNA to CRNA made this researcher acutely aware of the challenges faced by newly graduated CRNAs. These challenges surround the new role as an APN including responsibilities for care and treatment of patients undergoing anesthesia. As a didactic and clinical instructor for SRNAs, this researcher learned about a number of factors affecting CRNA role transition through the

stories shared by colleagues and SRNAs as they experienced CRNA role transition. These experiences lead to a desire by this researcher to gain a greater understanding of the phenomenon of CRNA role transition.

Study Assumptions

Assumptions for this study were made in several different areas:

Theoretical framework selection: This researcher has previously completed a pilot study on the perceptions of SRNAs' views on RN to CRNA role transition (Tracy, 2015). Findings from this study suggested more experience as an anesthesia provider was needed for accurate reflection on what factors affected the role transition of RN to CRNA. Reviewing previous research and theory by Benner (1982), this study was based on the assumption that CRNAs develop skill competence in their new role similar to other APNs. Therefore, the time period of practice being selected from which to recruit participants is two to three years of full time anesthesia practice. However, CRNAs have an immersion residency during their training which other APNs often do not have and this may affect the time period. Since no previous studies have been conducted these assumption have been acknowledged and the time period selected.

Practice: Only CRNAs practicing full time were selected for this study. It was assumed that CRNAs practicing less than full time may perceive their role transition differently than CRNAs practicing full time. Therefore, CRNAs practicing less than full time were not included in this study.

Individual Interviews: CRNAs were interviewed via online computer-mediated communication methods. It was assumed that CRNAs interviewed for this study responded honestly and accurately to the interview questions and about their experiences during their role transition.

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Outline of Remaining Chapters

This proposed dissertation will be presented in a non-traditional form. Chapter two is a manuscript reviewing the relevant literature surrounding SRNA to CRNA role transition. Chapter three provides a description of the methodology used to study the phenomenon. A description of phenomenographical research methods is included which utilized Internet video conferencing and recording to conduct in-depth interviews with participants. A description of data analysis procedures that were employed is also included. Chapter four is a manuscript reporting the use of online methodological techniques for online recruitment and computer mediated communications for individual interviews. A description of technological considerations and challenges are described regarding the use of online qualitative methods. Chapter five presents an analysis and description of the qualitative data and findings from the completed full study as a manuscript. Chapter six is a synthesis of the manuscripts in terms of findings as well as implications for practice, policy, and future research.

Chapter Summary

The overall aim of this study was to describe the influences of the factors perceived by the CRNA participants as affecting their role transition. The complexity of the CRNA's transition requires investigation to ensure success and ultimately patient safety. With the growth rate for surgeries being estimated at 0.8% per year, there will be a continued demand for CRNAs with the highest demand in rural communities (Merwin & Jordan, 2006; Merwin, Stern, Jordan, & Bucci, 2009). Furthermore, the AANA (2015) reports the number of planned retirements of CRNAs between 2016 and 2021 to be approximately 10%. Steps need to be taken to ensure newly graduated CRNAs have experienced an optimal transition to allow for success in their new role upon graduation. A recent survey of newly graduated CRNAs and their employers reported

that CRNAs who enter the workforce are clinically competent, but no research is available which

speaks to the CRNAs' role transition success or factors affecting their transition into their new

role (Cook, Marienau, Wildgust, Gerbasi, & Watkins, 2013). Employers and CRNAs need to

know what factors are perceived to positively influence the role transition of these newly

graduated providers. The ultimate goal of this study is to identify the factors and possible

interventions which employers may implement to promote safe and competent practice of

CRNAs through their successful transition into their new role.

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CHAPTER 2: LITERATURE REVIEW ON CRNA ROLE TRANSITION

Abstract

The transition from registered nurse (RN) to certified registered nurse anesthetist (CRNA) begins in graduate school and continues into the first few years of employment. Making the transition from RN to CRNA can be challenging and stressful. The journey from RN to CRNA has been examined as taking place in two phases. Phase I is when the RN leaves the bedside to enter graduate school and becomes a student registered nurse anesthetists (SRNA). Phase II continues the journey through the SRNA's education and into the first few years of CRNA practice. The factors which affect the role transition from RN to CRNA have not been well studied. In order to assist CRNAs with their transitions research is needed to identify the factors which promote successful role transition. Due to the paucity of available research, the literature review included both RN to SRNA and SRNA to CRNA role transition and findings are presented and discussed in this article. Findings from the literature review identified the characteristics of successful CRNAs such as age, gender, and culture. Studies involving SRNAs found factors perceived as affecting CRNA role transition included having preceptors, mentoring, reflection, training variety, and exposure to CRNAs practicing independently. Finally, only one study was found involving CRNAs which reported mentoring and nurturing as factors positively affecting CRNA transition and professionalism. Further research is needed to identify factors promoting and impeding CRNA role transition in order to gain a greater understanding of the phenomenon of CRNA role transition.

The role transition from student registered nurse anesthetist (SRNA) to advanced practice nurse (APN) is a difficult process. Certified Registered Nurse Anesthetists (CRNAs) are APNs who have specialized in the nursing practice of anesthesia. CRNAs practice in every health care setting in which anesthesia care is delivered. In some states, CRNAs are the sole anesthesia professionals in nearly 100% of rural facilities and CRNAs are the primary anesthesia providers to United States (U.S.) military personnel (Wilson, 2012). There are more than 49,000 CRNAs and SRNAs across the U.S. who administer anesthesia to approximately 32 million patients (Wilson, 2012). Thirty six states currently report a moderate shortage of anesthesia providers, either nurse anesthetists or anesthesiologists or both (Jordan, 2011). Procedures requiring anesthesia increased from approximately 70 million to 100 million from 1996 to 2006 (U.S. Department of Health and Human Services, National Center for Health Statistics, 2009). Turnover rates for CRNAs practicing in acute care settings are difficult to track due to lack of reporting (83% of hospitals do not report) but have been estimated at 4.5% with the cost to replace professional nurses reaching twice the APN's annual salary (Nursing Solutions, 2015).

Making the role transition from RN to CRNA can be challenging and stressful. Work environments where nurses' report having high stress levels have also shown to decreased patient outcomes (Cheung, Aiken, Clarke, & Sloane, 2008; Child & Institute of Medicine, 2004; Depalma, 1998). Furthermore, stress related outcomes have been reported as costing organizations billions of dollars per year and have been linked to increased staff turnover, decreased productivity, and decreased job satisfaction (Child & Institute of Medicine, 2004). Research indicates that CRNAs experiencing inadequate role transition left nurse anesthesia and stated their reasons for leaving included role conflict, unclear role expectations, and increased job stress and dissatisfaction (Jones & Fitzpatrick, 2009). Turnover rates for CRNAs practicing

in acute care settings are difficult to track due to lack of reporting (83% of hospitals do not report) but have been estimated at 4.5% with the cost to replace professional nurses can reach twice the APN's annual salary (Nursing Solutions, 2015). The complexity of the CRNA's transition requires substantial and consistent support to ensure success, satisfaction, and retention. CRNAs differ from other APNs and physicians in how they are trained and therefore how CRNAs transition into their new role as providers may be different as well. While research from other APN specialties may be examined, CRNA specific research is needed. Seibert (2009) argued that studies have not identified factors which positively influence CRNA role transition. Identifying these factors may allow educators and employers to promote successful role transition of newly graduated CRNAs and ensure they are provided optimal support during their role transition.

Method

The key words searched included nurse anesthetist role transition, CRNA role transition, SRNA role transition, and CRNA role socialization. A bibliographic search of the English language publications indexed in six computerized data-bases including Cumulative Index to Nursing and Applied Health Literature (CINAHL), Educational Resources Information Center (ERIC), the Medical Index (Medline), ProQuest, Psychological Literature (Psych Lit), and World Catalog (WordCat). The search was augmented using follow-up references from the articles' reference lists.

Literature Review

A review of literature was performed and included theses, dissertations, articles, and books from the past 21 years, 1994-2015. The purpose was to provide an overview of the significant literature published on the topic of role transition in nurse anesthesia. There is a

paucity of literature that examines the role transition of RNs to CRNAs and the factors that may be assets to successful RN to CRNA role transition have not been well researched. In order to provide a comprehensive review and to possibly discover any unpublished research, dissertations were also examined. All relevant research results of these studies were compiled and the findings from the literature review were summarized by study designs with findings and limitations noted. Each article was coded for its relevance to the inclusion criteria and the quality of the studies was evaluated using established criteria (Polit & Beck, 2014).

Theoretical Literature

The review examined theoretical articles involving RN to CRNA role transition which are summarized in Table 2A. The information gathered and presented in this article includes definitions on CRNA role transition, differences in how APN specialties transition from RNs into their new roles, and characteristics and factors which may influence RN to CRNA role transition.

Wilson (2012) examined role transition in context of the past, present, and future of nurse anesthesia. Role transition was defined professionally as the meeting of ongoing challenges, educationally as the new changes to the doctorate as the entry-level degree to practice, and personally as the CRNAs continue to learn and experience self-improvements throughout their careers. Wilson explained that role transition also has the means to impart and validate skills and knowledge to new nurse anesthesia providers to increase their competency.

Seibert (2009) examined how RNs become CRNAs and describe the transition process utilizing Benner's Novice to Expert Model. Benner's Model has been well utilized in undergraduate and graduate research in nursing. Seibert argues that RNs travel through the five phases of Benner's Model during their transition as they advance from *Novice* to *Advanced*

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Beginner. Hamric and Hanson (2003) theorized that, while APN specialties have many similarities in knowledge and skills, there are also differences in didactic education and clinical training resulting in different skill acquisition and role transition into APN practice. These differences may correlate to how the significance of these factors differs between APN specialties. These differences in reported factors may be related to differences in how the various APN specialties transition from their old roles as RNs to their new roles as APNs.

Waugaman (2011) theorized that student registered nurse anesthetists (SRNAs) identify with their professional role early in their education and earlier than APN specialties. Waugaman described professional socialization as a process through which RNs transition into their new role by acquiring the knowledge, skills, behaviors, and career commitment of a CRNA. Early exposure to the CRNA role during the educational experience was also theorized as positively influencing successful role transition and career commitment. Although a mentorship program was not identified, future research in this area was suggested as a possible way to improve role transition success and retention. Seibert (2009) theorized that CRNAs enter practice as *Competent* providers. Seibert acknowledged that there has been very little research on RN to CRNA role transition and that further research is needed to identify factors positively influencing RN to CRNA role transition.

Research on CRNA Transition

The paucity of literature on CRNA role transition lead to an expansion of the literature review to the time period around which CRNAs transition from being SRNAs to CRNAs. Previous research on SRNAs and CRNAs included research examining the characteristics of successful CRNAs and SRNAs, research on faculties' perceptions on successful CRNAs, research involving SRNAs and their views on role transition, and research on CRNA

competencies during their first practice. Only one study was found which examined perceived factors affecting CRNA role transition.

Characteristics Identified

A number of studies examined characteristics found in CRNAs who were successful in their role transition and professional socialization (Table 2). Mauleon and Ekman (2002) conducted a descriptive study utilizing a phenomenographic method in analyzing the ways in which new CRNAs experience and perceive nurse anesthesia in Sweden. The study findings suggest new CRNAs must be competent, knowledgeable, self-sufficient, and self-confident in order to be successful and succeed in their new role. The study included all female participants and was from only one Swedish University Nurse Anesthesia Program. Nurse anaesthetists are required to collaborate with physician anesthesiologists. Nurse anesthetists' practice rights vary between countries and while nurse anesthetists in Sweden are usually directed by Swedish physician aneasthetists, U.S. CRNAs may practice independently and not require physician direction. Given the differences in practice environment and limitation, factors affecting Swedish CRNAs' role transition may be different than U.S. CRNAs.

Clayton, Lypek, and Connelly (2000) conducted a survey of 29 clinical faculty from the Army, Air Force, and Navy nurse anesthesia programs (100% response) to determine what characteristics CRNAs need for success in their new role upon graduation. The survey asked for the perceptions of faculty members regarding the characteristics that SRNAs need for success in the clinical portion of graduate education. The survey tool consisted of a quantitative section with 35 characteristics and seven qualitative questions. Top descriptive characteristics essential to success included the ability to learn, judgment, clinical awareness, commitment, hardiness, confidence, and self-efficacy.

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Waugaman and Lu (1999) performed a quantitative study on 1,117 SRNAs to determine the relationship of culture, race, and ethnicity to professional socialization and career commitment of CRNAs. Waugaman and Lu noted that graduate education and professional socialization are affected by the dominant U.S. culture of European American Whites and cultural sensitivity is needed during nurse anesthesia education and socialization. Waugaman and Lu argued that cultural groups responding negatively to a life-time professional adjustment may lead to difficulty in recruiting and retention of these groups.

Waugaman and Lohren (2000) conducted a quantitative research study to identify the influence of age and gender on CRNA professional socialization and commitment. Professional role socialization of the CRNA may be defined as the process through which an individual learns not only the necessary knowledge and skills of a CRNA but also gains the identity and adopts the values and being a CRNA. Waugaman and Lohren surveyed 1,106 SRNAs (55% response rate). Sixty percent of the respondents were female. The investigators found that older SRNAs (>40 years old) were less concerned with the socioeconomic aspect of the profession than younger SRNAs (<30 years old). These authors also found female SRNAs more focused on holistic, culturally congruent care while male SRNAs were focused on rules, administrative roles, and technology. Age was also identified as influential by Hoversten's (2011) study where younger SRNAs scored significantly higher on the first attempt at the National Certification Examination. These findings suggest the characteristics of age and gender both correlate significantly to professional socialization. Waugaman and Lu (1999) and Waugaman and Lohren (2000) both refer to role socialization as a cognitive occupation-orientation and identify its implications as positively influencing role readiness.

SRNA Research

A number of other articles were identified as researching how SRNAs learn with possible influencing factors being identified. Collins (2013) examined emotional intelligence (EI) as a non-cognitive factor. Collins suggests this research creates a base knowledge on EI in relation to SRNAs. Further, Collins reported it is too early to consider EI as an admissions criterion but EI may be an important additive tool in the selection process of SRNAs. The study demonstrates consistency with other studies involving EI and suggests that nurse anesthetists need both cognitive intelligence and EI to be successful during their education. The study only examined EI as influencing SRNAs' success and did not examine how EI might affect SRNAs during their transition to CRNAs after graduation.

Tracy (2015) examined the factors which SRNAs perceive as having influence on their role transition through a qualitative study utilizing focus group interviews and discussion. The pilot study recruited from two nurse anesthesia programs in the Chicago area and consisted of three focus groups and a total of 17 participants. Factors SRNAs found to be positively affecting CRNA role transition included having preceptors, mentoring (peer and faculty), reflection time (self and group), training variety, and exposure to CRNAs practicing independently. Limitations were listed and included that this was only a pilot study and a full study may identify further factors which SRNAs perceive as having influence on CRNA role transition.

Elisha and Rutledge (2011) surveyed 696 SRNAs in the U.S. on their perceptions of their clinical education. Similar to Tracy's findings, Elisha and Rutledge found the clinical educator or preceptor being reported as an influential role model. Findings also included 75% of SRNAs reported experiencing verbal abuse, 21% reported sexual harassment, 23% physical abuse, and 21% reported racial discrimination. Elisha and Rutledge's utilized a quantitative online survey with a reported 26% response rate.

Competencies

Research was identified that demonstrated CRNAs enter practice as competent providers. Cook, Marienau, Wildgust, Gerbasi, and Watkins (2013) conducted a quantitative study and found that 98% of nurse anesthesia graduates and 97% of their employers indicated newly graduated CRNAs were prepared for practice based upon 17 identified professional competencies. A sample size of 148 matched graduate-employer pairings was selected which provided 88% power. The theoretical framework was not stated and there was no explanation on how adequacy in preparation and performance translates to successful transition in the newly graduated CRNA. The study suggested that newly graduated CRNAs were more critical of their performance than how their employers viewed the CRNA's performance and that CRNAs entering their first practice are prepared to practice as safe, competent providers.

Mentoring and Nurturing

Only one study was found during the literature review which identified factors which may affect CRNA role transition. Schreiber and MacDonald (2010) conducted a qualitative research study utilizing grounded theory on how CRNAs learn, practice, and promote their profession. Purposive and snowball sampling were utilized to recruit 18 participants. Key informants were interviewed and American Association of Nurse Anesthetists' (AANA) archives were also examined. Findings from the study indicated that mentoring and nurturing of SRNAs and newly graduated CRNAs by experienced CRNAs lead to successful role transition and promotion of the profession. Limitations were well stated and described how findings from qualitative research cannot be generalized widely but can be used to explain certain situations and circumstances, theoretically transferable as applicable in grounded theory. Schreiber and

MacDonald suggested further research is needed to verify their findings as well as identify other possible factors affecting how CRNAs learn, practice, and promote their profession.

Summary

While there are many similarities in knowledge and skills amongst APN specialties, there are also differences in their didactic education and clinical training (Hamric & Hanson, 2003). These differences influence the factors affecting the role transitions from RNs into APN practices. Waugaman et al. (2011) theorized that CRNAs may progress through Benner's Novice to Expert Model faster than other APN specialties. Cook et al. (2013) verified that CRNAs are competent and prepared for practice upon graduation and thereby reaching the *Competence* level of Benner's Model.

Characteristics may be defined as features or qualities belonging to and identifiable to a person while factors are things that may be influenced or controlled to produce a result (Ott & Longnecker, 2010). A number of studies have identified the characteristics of CRNAs which affected their role transition or role socialization but only one study was found which identified factors from which interventions may be developed to positively influence CRNA role transition. The characteristics identified included age (Hoversten, 2011; Waugaman & Lohren, 2000), gender (Waugaman & Lohren, 2000), commitment (Clayton et al., 2000), competence (Mauleon & Ekman, 2002), hardiness (Clayton et al., 2000), judgment or clinical awareness (Clayton et al., 2000), knowledgeable or ability to learn (Clayton et al., 2000; Mauleon & Ekman, 2002), self-sufficient (Mauleon & Ekman, 2002), self-confident or confidence (Clayton et al., 2000; Mauleon & Ekman, 2002), and self-efficacy (Clayton et al., 2000). Only one article was found which examined factors affecting the role transition of RNs to CRNAs. Schreiber and MacDonald (2010) identified professional mentoring and nurturing of newly graduated CRNAs as a factor positively influencing successful RN to CRNA role transition and suggested further

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research is needed to verify their findings as well as identify other factors influencing RN to CRNA role transition.

Conceptual Framework

The theoretical framework for this literature review on role transition can be summarized using Meleis's Transitions Theory framework which has been used in NP research to define personal and community level transition conditions of NPs that either promote or inhibit the NP's transition (Barnes, 2015). A transition has been defined as a developmental process within an existing role or a new position (Banner, MacLeod, & Johnston, 2010). For APNs it has been further defined as a transformation into professional practice which is characterized by the acquisition of skills, knowledge, and behaviors which new providers need to be successful in their roles (Young, Stuenkel, & Brinkley, 2008). Barnes utilized Meleis's Transitions Theory in her study on NP role transition and defined a successful transition as characterized by factors promoting and impeding the NP's role transition. A successful transition then is characterized by the "subjective sense of well-being, increased confidence and competence, mastery of skills, and autonomous practice. An unsuccessful transition is characterized by negative emotions, a lack of confidence, turnover, and limited support" (Barnes, 2014, p.179). While Meleis's framework may be utilized to examine transitions in great detail for the purposes of this literature review factors influencing CRNA role transition was the focus of this review. Meleis identifies personal, community, and society transition conditions or factors which may be viewed as facilitators and inhibitors of the transition experience (Figure 2.1). Meleis's Transition Theory may be applied to this review as a framework for integrating previous research as well as identifying areas in the literature for future research. In reviewing the literature on CRNA role

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transition different aspects of these transition conditions have been identified and examined in relation to Meleis's Transition framework.

Personal Conditions

According to Meleis et al. (2000) personal conditions facilitating and inhibiting transition are identified through meanings, cultural beliefs and attitudes, socioeconomic status, preparation, and knowledge. Personal attributes of CRNAs correlating to success in their new roles has been researched through both qualitative and quantitative methods (Clayton, et al., 2000; Collins, 2013). Cultural beliefs and attitudes as well as socioeconomic status have also been researched in relation to CRNA socialization into their new role (Hoversten, 2011; Waugaman & Aron, 2003; Waugaman & Lohrer, 1999; Waugaman & Lu, 2000). Preparation and knowledge have also been researched in relation to SRNAs' preparation and during CRNAs' initial employment (Clayton, et al., 2000; Cook, et al., 2013; Mauleon & Ekman, 2002).

Community and Society Conditions

Community conditions have been identified as support gained from others including role models and formal orientation (Barnes, 2015; Meleis, et al., 2000). This review identified that community and society conditions have not been researched in depth and have been limited to research on conditions or factors affecting SRNAs (Elisha & Rutledge, 2011; Tracy, 2015), conditions affecting CRNAs outside the US (Mauleon & Ekman, 2002), and factors related to job satisfaction (Thompson, 1981). Only one study, Schreiber and MacDonald (2010), was found that researched community and society conditions which influence CRNA transition. Schreiber and MacDonald identified mentoring and nurturing as factors promoting successful CRNA role transition and stated that further research was needed to identify other conditions or

factors influencing CRNA transition. Future research using Meleis's Transitions framework

could identify community and society conditions which influence CRNA transition

Conclusion

Studies examining the role transition of RN to APN have been well examined and have

added to the discipline and science of nursing but have been limited to APN specialty,

predominately Nurse Practitioners. The majority of research found during this review involved

mostly qualitative studies surrounding the role transition of RN to Nurse Practitioner. A number

of these studies reported some differences in which factors are related to successful role

transition but these, arguably, may be specific to the APN specialty role. Hamric and Hanson

(2003) emphasized, that while APN specialties have many similarities in knowledge and skills,

there are also differences in didactic education and clinical training resulting in different skill

acquisition and role transition into APN practice. From these studies research for RN to CRNA

role transition may be established. While similarities exist between the APN roles, Clinical

Nurse Midwives, Clinical Nurse Specialists, NPs, and CRNAs arguably have differences in their

role transitions and specific research is needed concerning RN to CRNA role transition to ensure

successful role transition of new CRNAs into practice. Only with a solid theoretical foundation

and methodology can research be performed to further nursing science and research.

Research on certain aspects of the phenomenon of role transition of RN to CRNA has

been performed but community-conditions or factors on CRNA role transition have not been

well examined. Personal-conditions surrounding clinical aspects and demographics have been

examined for factors and characteristics relating to skill acquisition success and socialization to

the new role but the majority of the research has come from an educator's viewpoint and little

from the CRNA experiencing the transition (Clayton, Lypek, & Connelly, 2000; Hoversten,

2011; Mauleon & Ekman, 2002; Schreiber & MacDonald, 2010; Waugaman, 2011; Waugaman & Aron, 2003; Waugaman & Lohren, 2000; Waugaman & Lu, 1999). What has not been studied in CRNAs is what factors correlate to successful role transition from the participants', or newly graduated nurse anesthetists', perspective. Since there has been limited research on RN to CRNA role transition it is difficult to surmise which factors correlate significantly to successful role transition. Although findings from other specialties might give a framework from which to build, further research as to which factors are specialty specific is needed to address the gaps in the science. Identifying what factors can be influenced by future interventions is important and these interventions will assist employers in improving SRNA to CRNA role transition.

Figure 2.1: Meleis's Transitions Theoretical Framework

Nature of Transitions

Types

Developmental
Situational
Health/Illness
Organizational

Patterns

Single
Multiple
Sequential
Simultaneous
Related
Unrelated

Properties

Awareness
Engagement
Change and
   Difference
Transition Time
   Span
Critical Points and
   Events

Transition Conditions: Facilitators & Inhibitors

Personal

Meanings
Cultural beliefs & attitudes
Socioeconomic status
Preparation & knowledge

Community

Society

Patterns of Response

Process Indicators

Feeling Connected
Interacting
Location and Being Situated
Developing Confidence and
   Coping

Outcome Indicators

Mastery
Fluid Integrative Identities

Nursing Therapeutics

(Meleis, et al., 2000)

Table 2.1: Theoretical Literature

Study & Type	N	Subjects of Article	Factors Identified	Significant Findings
Hamric & Hanson, 2003 Theoretical	N/A	All APN specialties	Differences in APN education and training.	APN specialties have many similarities in knowledge and skills but differences in didactic and clinical training. Factors affecting role transition varies depending on the APN specialty.
Seibert, 2009 Theoretical	N/A	CRNAs		Utilizing Benner's Novice to Expert Model appropriate to study RN to CRNA role transition. CRNAs enter practice as *Competent* providers Research is needed to identify influencing factors.
Waugaman, 2011 Theoretical	N/A	CRNAs	Age, gender, culture, and race or ethnicity.	Professional socialization is the essence of how RNs become NAs by developing skills, knowledge, professional behavior, and career commitment during the educational process.
Wilson, 2012 Theoretical	N/A	Historical perspective on CRNAs	Defined role transition as the means to impart and validate skills and knowledge to new CRNAs to increase their competency.	Role transition was defined professionally as the meeting of ongoing challenges, educationally as the new changes to the doctorate as the entry level degree to practice, and personally as the CRNAs continue to learn and experience self-improvements throughout their careers.

Table 2.2: RN to CRNA Role Transition

Study & Type	N	Subjects of Study	Factors Identified	Significant Findings
Clayton, et al., 2000 Mixed Methods Survey	29	Military Clinical Faculty	Top descriptive characteristics essential: Integrity, ability to learn, judgment, clinical awareness, commitment, and hardiness.	Age and years of experience not seen as important as other characteristics such as confidence and self-efficacy.
Collins, 2013 Quantitative	216	SRNAs from 4 SE U.S. NA Programs	Variable predictive to success on NCE: Facilitating Task Sensations Task Facilitating Branch Reasoning Area.	Research begins base knowledge on EI in relation to SRNAs. Too early to consider EI as admission criteria but may be an important additive tool in the selection process. Consistent with other studies, NAs need both cognitive intelligence and EI to be successful.
Cook, et al., 2013 Quantitative Online Survey	560 recent grads & employers	CRNA graduates from 2009 & their employers (matched pairs)	17 Professional competencies were analyzed in this survey.	Graduates were much more critical of their own performance than were their employers. New CRNAs enter practice prepared with the required knowledge and skills to practice as safe, competent providers.
Elisha & Rutledge 2011 Online Survey (Quantitative)	696	SRNAs in U.S. Response rate 26%	SRNA's perception of clinical education.	75% reported verbal abuse, 21% sexual harassment, 23% physical abuse, 21% racial discrimination, 94.6% reported Clinical educator as role model.
Hoversten, 2011 Quantitative Dissertation	2,298	Newly Graduated SRNAs taking NCE during 2010	Age of first time NCE test takers.	Only age was found to be significant. Younger SRNAs scored significantly higher on the first attempt at the NCE.
Mauleon & Ekman, 2002 Qualitative Descriptive	9	Swedish CRNAs All female	Competence, knowledge, self-sufficient, and self – confidence.	Competent, knowledgeable, self-sufficient, and self-confident are significant factors for success in their new roles as CRNAs.

Phenomenographic study				
Schreiber & MacDonald, 2010 Qualitative Grounded Theory	18	CRNAs	Mentoring and nurturing.	Mentoring of New CRNAs by experienced CRNAs leads to successful role transition
Thompson, 1981 Quantitative	293 (60% response rate)	CRNAs in SW PA	Pay, work conditions, autonomy, support, work itself, and interactions.	Factors relating to job satisfaction ranked according to importance: 1) pay; 2) working conditions; 3) autonomy; 4) anesthesiologist support; 5) work itself; and 6) interactions.
Tracy, 2015 Qualitative-Focus Groups	17	SRNAs from 2 Chicago area NA programs	Preceptor, Mentoring (peer & faculty), Reflection (self & group), Training variety, and Experiencing CRNAs.	Factors which SRNAs perceived as having the greatest influence on their role transition were preceptors and mentors, especially experienced CRNAs viewed as role models. Limitation of pilot study.
Waugaman & Aron, 2003 Quantitative	1119	Student Nurse Anesthetists	Failure to properly socialize.	Vulnerable period at 12-18 months of training when stress is high and failure to socialize to the profession and new role.
Waugaman & Lohren, 2000 Quantitative	1,106	SRNAs	Age and Gender.	Age and gender significantly influenced professional socialization and career commitment.
Waugaman & Lu, 1999 Quantitative	1,117	SRNAs	Cultural, racial, and ethnic backgrounds.	Students with diverse backgrounds responded differently to socialization.

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CHAPTER 3: METHODOLOGY

The purpose of this dissertation was to examine the perceived factors affecting Certified Registered Nurse Anesthetists (CRNAs) as they transition into their new career. A qualitative research design utilizing a phenomenographical approach was chosen for this dissertation because little research has been performed on factors influencing CRNAs as they transition into their new role. This researcher anticipated that the issues and challenges CRNAs face would be identified through a better understanding of the needs of CRNAs as they transition into their new role. Through identifying the factors which promote successful transition, employers and CRNAs will have a greater understanding of the CRNA role transition process and possible interventions during the transition process to allow for an improved and smoother transition process. To achieve this understanding of the problem, the following research questions were designed to guide this study:

1. What factors do participants perceive might help them to be successful in their new role?

2. What factors do participants perceive have impeded and/or continue to impede their transition?

3. What interventions do participants perceive as having been helpful in their transition that employers of new CRNAs could implement to assist with their transition?

This chapter describes the study's research methodology by providing a rationale for the research approach, setting, and sample selection. An overview of the information to be collected and the research design will be presented. Data collection methods, procedures, analysis, and synthesis will also be detailed. Ethical considerations, issues of trustworthiness, as well as study

limitations and delimitations will be discussed. Finally, a summary and synthesis of the chapter and methodology will be stated.

Rationale for Qualitative Approach

Qualitative methodology implies an emphasis on description and interpreting the meaning of experiences (Denzin & Lincoln, 2008). A qualitative research design utilizing an online phenomenographical design was chosen for this dissertation because very little research has been performed on the role transition of SRNA to CRNA. Qualitative inquiry using a phenomenographic approach allows for the study of the factors which may be affecting a phenomenon giving a descriptive and holistic view of the data (Larsson & Holmström, 2007). Phenomenography is a research approach which has been previously utilized to examine anesthesia providers' perceptions on work related phenomena (Larsson & Holmström, 2007; Mauleon & Ekman, 2002). Studies examining the role transition of registered nurse (RN) to advanced practice nurse (APN) have been well examined and have added to the discipline and science of nursing but have been limited to APN specialty, predominately Nurse Practitioners (Cant, Birks, Porter, Jacob, & Cooper, 2011; Chang, et al., 2006; Gardner, Hase, Gardner, Dune, & Carryer, 2008; Gerhart, 2011; Hayes, 1998; Heitz, Steiner, & Burman, 2004; Hill and Sawatzky, 2011; Hudson & Varnell, 2006; Poronsky, 2011; Poronsky, 2012; Sipe, Fullerton, & Schuiling, 2009; Spoelstra & Robbins, 2010; Steiner, McLaughlin, Hyde, Brown, & Burman, 2008). A number of these studies reported some differences in which factors are related to successful role transition but these, arguably, may be specific to the APN specialty role. Hamric and Hanson (2003) emphasize, that while APN specialties have many similarities in knowledge and skills, there are also differences in didactic education and clinical training resulting in different skill acquisition and role transition into APN practice.

Limited previous research makes planning or building research difficult without an underlying foundation. This study added to existing literature and explored the perceptions and experiences of recently graduated CRNAs and examined the perceived factors influencing the transition process of CRNAs. Qualitative approaches are considered appropriate when investigating phenomena with limited prior research (Joubish, Khurram, Ahmed, Fatima, & Haider, 2011). Phenomenography is a research approach which has been previously utilized to examine anesthesia providers' perceptions on work related phenomena (Larsson & Holmström, 2007; Mauleon & Ekman, 2002). Qualitative inquiry using a phenomenographic approach allows for the study of the factors which may be affecting a phenomenon giving a descriptive and holistic view of the data (Larsson & Holmström, 2007). Therefore, it is this researcher's contention that qualitative methods are needed to elicit the rich descriptive data that are necessary to address the research questions and the phenomenon of this study which have not been previously addressed. A qualitative descriptive research design utilizing an online format of video conferencing of individual interviews was the chosen approach for this study to gain a better understanding of what CRNAs perceive to be the factors affecting their transition into their new role as a CRNA.

Research Setting

An online format for participant recruitment and data collection was chosen after taking into consideration modern technological advances and the current generation of CRNAs. Online video conferencing and recording of interviews allows for access to geographically dispersed individuals and for the collection of data (Salmon, 2015). The Internet has become a part of contemporary global popular culture and recent graduates from nurse anesthesia schools are more technologically savvy than previous generations (Ardévol, 2012). Also, the Internet is a

powerful tool for sharing textual, visual, audio, and audiovisual information for qualitative

research (Salmon, 2015). The Internet offers researchers many opportunities for primary data

collection beyond traditional recruitment of participants and administering interviews or

questionnaires. The advantage of a traditional face-to-face participant observation allows

researchers to experience and analyze the participants' verbal utterances, tone of their voices,

facial expressions, body language, and other sensory impressions. An advantage of online

recording of video interviews is that it allows the researcher to revisit the interview and re-

examine it for greater depth than a traditional face-to-face participant observation would allow.

Traditional interviews without video recording do not allow for the review of the participants

facial expressions and body language. The Internet provided confidentiality of participants so

that CRNAs could feel free to share information they might otherwise not have wanted to share

due to fear of their employers or colleagues finding out. The participants were also able to select

the time and place of their online video communication with the researcher which allowed for

greater flexibility in scheduling the interviews.

Research Sample

During the literature review regarding qualitative studies there did not appear to be a

consistent basis for determining sample size (Mason, 2010). Selection of the research sample in

qualitative research is often purposeful to gain information-rich data (Bloomberg & Volpe,

2008). The literature showed sample sizes from 5-25, with some larger studies even higher. Too

small of a sample size would lead to the study having unique findings that may not be

transferable, limiting generalizability, while larger sample sizes are also problematic due to the

large volumes of data which may become overwhelming (Russell & Gregory, 2003). In

qualitative studies the number of participants is less important than reaching data saturation.

Polit and Beck (2014) described data saturation as achieved when the recruitment of new participants does not yield additional or new data and redundancy occurs. Data collection continued until data saturation had been achieved at thirteen participants and then two additional participants were interviewed to achieve confirmation of data saturation. No additional themes emerged from the data gained by the additional participants. Data saturation was agreed upon by the primary researcher and two experienced supervising researchers with a total of 15 participants.

While information-rich data is important for depth, breadth is also needed to have greater success of transferability or generalizability of findings. Currently, the American Association of Nurse Anesthetists (AANA) has divided the United States (U.S.) into seven regions. Ideal sampling of the population for this study included participants from each region, from the military's nurse anesthesia core, and from a Federal Healthcare Center or Veterans' Health Administration Hospital. The Veterans' Health Administration (VHA) is the largest health care organization in the U.S. with 153 hospitals employing approximately 657 CRNAs (Veterans' Health Administration, 2012). The U.S. Military employs approximately 400 CRNAs and promotes independent CRNA practice in Military and VHA Hospitals. As a result, the training and work environments promote an autonomy that is very unique when compared to the civilian experience. This large variety in training and initial practice experience allowed for a possible increased breadth of data. Previous qualitative studies examining RN to APN role transition, such as Heitz, Steiner, and Burman (2004), drew study participants from only one or two nursing programs, thereby limiting the breadth of their sample and possibly its transferability to other regions and educational programs. This study overcame that limitation through use of online recruitment from across the U.S. and the inclusion of participants from both private and public

practice settings and from various regions throughout the U.S., the U.S. Military, and the VHA hospitals.

Conceptual Framework

The framework for this study is based on Benner's Novice to Expert Theory (Benner, 1984), Appreciative Inquiry (Hammond, 1998), and Meleis's Transition Theory (Meleis, Sawyer, Im, Hilfinger Messias, & Schumacher, 2000). Benner's Theory on development patterns in nurses identified how nurses develop through a continuum consisting of five stages from novice to expert (Benner, 1982). Her theory identified that professionals move through five stages of career development which Benner labeled novice, advanced beginner, competent, proficient, and expert. A recent study found that CRNAs are competent upon graduation and starting their new role (Cook, Marienau, Wildgust, Gerbasi, & Watkins, 2013). Many previous studies have identified that nurses settle into their new roles and complete their transitions within the first one to two years of full time practice (Brower, Tappen, & Weber, 1988; Chandler, 2012; Heitz et al., 2004; Steiner, McLaughlin, Hyde, Brown, & Burman, 2008). Therefore, it may be surmised that the ideal time to examine what factors have affected CRNAs' role transition is between one and two years of full time practice experience as well. There are approximately 2,300 CRNAs who are within two to three years of their new role (AANA Annual Reports, 2012). Therefore, the research sample for this study was drawn from this population of CRNAs with two to three years of full time anesthesia practice experience.

Appreciative Inquiry focuses on the positive aspects of a system, organization, or situation (Hammond, 1998). The Appreciative Inquiry theorizes that all parts of a system, organization, or situation are defined by the whole and through studying the whole what has worked well may be identified. An assumption of Appreciative Inquiry framework is that factors

leading to success may be identified through studying what is working or successful. Therefore, examining CRNAs who have been in practice between two to four years should lead to successful identification of the factors leading to successful role transition.

Meleis's Transition framework was utilized to examine previous research on CRNA role transition as well as to identify areas for future research (Meleis, et al., 2000). Meleis's Transitions Theory has been used in previous research to define personal and community level transition conditions of NPs that either promote or inhibit the NP's transition (Barnes, 2015). Meleis identifies personal, community, and society transition conditions or factors which may be viewed as facilitators and inhibitors of the transition (Meleis, et al., 2000). This framework was utilized to identify the factors CRNAs perceived as promoting and inhibiting CRNA transition on the personal and community levels. Meleis's Transition Theory was also applied as a framework for integrating previous research as well as identifying areas in the literature for future research.

Recruitment

Utilizing the AANA membership information, the AANA research division randomly selected 500 participants who fit the study requirements and a study announcement with recruitment emails were sent out to the CRNAs who met the criteria. Inclusion criteria included CRNAs who had recently graduated within the previous two to three years, were employed full time as nurse anesthetists, and had access to a reliable Internet connection for online computer mediated communication. Some snowball sampling was utilized due to participants sharing information about the study over the Internet with other CRNAs who then contacted the primary researcher. Eligible study participants were divided into groups based upon their practice region, U.S. Military, and VHA employment. From these groups, participants were purposefully

selected to represent that greater national CRNA population and email verifications were sent to the participants. Participants then had one week to respond to the researcher and an interview appointment was scheduled based upon an agreed upon date and time. If participants did not respond to the researcher's first email, a follow up email one week after the initial attempt, was sent as a reminder. Individuals selected who did not respond to the email invitations were removed from the study after two weeks and another participant was selected from the appropriate group. Individuals not selected were sent an email thanking them for their interest and informing them that they were not selected for the study.

The objectives for this dissertation were best obtained through the selection of subjects from whom information-rich narratives were procured. Purposeful sampling is a selective sampling method based on the researcher's knowledge and judgment about a phenomenon to select participants who will best be able to provide data about the phenomenon under study (Polit & Beck, 2014). Therefore, a purposeful sampling was used during the selection of candidates for this study so that interviews yielded valuable insight into the phenomenon under investigation, CRNA role transition. Recruitment of study subjects was accomplished through online recruitment using emails which utilized the AANA's membership information. At the time of the study, more than 90% of CRNAs were members of the AANA and comprised the largest single listing of CRNAs in the U.S. Contact with prospective participants was then made via email and participants who were recruited had their ability to use online video conferencing verified by the primary researcher. Current demographics of CRNAs were examined during the selection of candidates for participation. According to the AANA annual reports (2012), females currently make up 58% of CRNAs so nine female and six male CRNAs were recruited as

participants. Also, approximately 38% of CRNAs practice in rural locations so selection based on practice settings was also utilized to more accurately reflect national data.

Overview of Information Needed

This qualitative descriptive study focused on CRNAs from different locations across the U.S. In seeking to understand the factors affecting CRNAs as they transition into their new careers, research questions were planned to explore and gather the needed information. The information needed for the study fell into three categories: perceptual, demographic, and theoretical. This information included:

- Perceptions of what CRNAs experienced during their role transition and what factors affected their transition.

- Demographic information pertaining to participants including practice setting, program length and degree type, years of nursing experience, and years of critical care experience before anesthesia school.

- An ongoing review of the literature providing the theoretical base for the proposed study.

Data Collection

A literature review was conducted prior to and was ongoing throughout the study. The key words searched included nurse anesthetist role transition, CRNA role transition, SRNA role transition, and CRNA role socialization. A bibliographic search of the English language publications indexed in six computerized data-bases including Cumulative Index to Nursing and Applied Health Literature (CINAHL), Educational Resources Information Center (ERIC), the Medical Index (Medline), ProQuest, Psychological Literature (Psych Lit), and World Catalog (WordCat). The search was augmented using follow-up references from the articles' reference lists.

This selective literature review informed and guided the study but did not comprise the data collected for this study. A literature review was critical though to ensure appropriate guiding questions were created, guided by similar research, to guide participants' interviews to ensure rich data was collected. Data were collected online using a virtual method of video conferencing and were recorded and stored offline for this study. The Internet has been a tool for collecting data from computer mediated social interactions since the 1990's (Ardévol, 2012). The current generation of CRNAs is more technologically savvy than previous generations and with modern technological advances, such as "smart-phones" and tablets, video conferences may be accomplished at any time and location. Therefore, data collection utilizing online video conferencing was deemed appropriate and convenient for this study. Utilizing online video conference calling and a recording system also allowed for the gathering of data related to body language that would otherwise be impossible with only audio recording. Online video conferencing also allowed for a wide geographical distribution of participants and greater breadth of participants than if traditional in-person interviews were performed. Skype© was used for video conferencing and Evaer Skype© video call recorder was used to record and save video conference interviews with participants. Evaer Skype© video call recorder is a program designed specifically for Skype© video conferencing and allowed this researcher to save video interviews directly to an external storage device.

Interview Questions

Qualitative research is a naturalistic, inductive, and interpretive approach concerned with understanding the meanings people attach to phenomena (Ritchie, 2010; Tuli, 2010). Qualitative implies an emphasis on the qualities of subjects and on the meanings processed through social experiences (Denzin and Lincoln, 2008). Qualitative data is typically collected in an in-depth

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and holistic fashion through the collection of rich narrative materials using a flexible research design (Polit & Beck, 2010). Qualitative questions tend not to ask whether or how much but explore what, how, and why. Qualitative reports do not typically generate answers to questions but they generate narrative accounts and explanations of phenomena (Giacomini & Cook, 2000).

For this study open-ended questions were utilized to give participants guidance during the interviews while allowing for greater breadth of narratives. These questions have been created based upon previous research involving APNs and upon guidance of the researcher's dissertation committee. Expert opinions were sought from three experienced providers, two nurse anesthesia program directors, and two anesthesia companies. One anesthesia business manager was an anesthesiologist and the other was a CRNA.

Interview questions included:

1. How would you describe your new role as a CRNA?

2. How would you describe your role transition from RN to CRNA? What was your transition like?

3. At what point did you feel you completed your transition from RN to CRNA?

4. How did you come to that decision or realization? (What made you decide this and why?)

5. What barriers do you think slowed you down during your transition from RN to CRNA during your first six months in your new role?

- From six months to the first year?

- The first year to two years?

6. What influences helped you through your transition from RN to CRNA?

7. What could have been done during your training to help you become more prepared or positively influence your training to better prepare you for CRNA practice?

8. What positive forces can be identified that affect the RN to CRNA role transition?

9. What obstacles or sacrifices did you face during the role transition to CRNA and how did you overcome these obstacles or sacrifices?

10. Is there anything else you like to share?

Procedures

The procedures for this study were accomplished in a logical, step-by-step process which was clear and concise. This included institutional review board (IRB) approval, approval of the AANA research division, establishment of contacts with study participants, online data collection, and completion of the study and termination of study subjects' participation. All steps were approved by the researcher's major professor (MP) and dissertation committee before implementation. IRB approval from the University of Wisconsin – Milwaukee (UWM) was the first step in the initiation of the study after approval of the study by the researcher's MP and committee. An online IRB form and application were utilized with all appropriate information completed to ensure prompt completion and approval from the IRB committee. The MP was listed on the IRB form as required with contact information for both the MP and researcher. With a previous study by this researcher involving the AANA, IRB approval from the University of Wisconsin – Milwaukee was deemed sufficient by the AANA and no further IRB approval was needed.

Ethical Considerations

The protection of human subjects is important in any study and The Belmont Report (1979), universally accepted as the basis for research ethics, and articulates the three core

principles of Respect for Persons, Beneficence, and Justice. Respect for persons requires

ensuring the autonomy and dignity of the participants. Beneficence requires minimizing risks

the participants might be exposed to during the research. Justice requires fair distribution of

risks amongst participants. The researcher was responsible for both informing and protecting

participants.

The research process was voluntary and an informed written consent was obtained from

each participant by the researcher before any recordings were obtained. The individual

participants' anonymity was maintained throughout the study and with regards to the reporting

and dissemination of data and findings. A commitment was made to keep the names and other

significant identifying characteristics of the participants confidential. Nurse anesthetists and

their employers did not have access to the CRNAs' video recording or transcripts. These

recordings and transcripts were kept secured by the primary researcher throughout the study. As

identified previously, cautionary measures were taken to secure the storage of physical and

electronic research related records and data. No one other than the researcher, the researcher's

MP, and members of the researcher's dissertation committee had access to recordings,

transcripts, or data. Finally, the data collected was respected and was only used for the intended

purposes outlined in the written consent and data was not used by outside researchers or agencies

for purposes other than those originally intended and outlined in the written consent.

Recruitment

Once IRB approval was obtained, approval was obtained by the AANA Research

Division for use of the AANA's member listing for contacting eligible participants for the study.

The AANA Research Division approved and emails (Appendix 3B) were sent to recruit possible

candidates for study participation. Candidates were selected based upon study sample criteria

previously stated. A preapproved consent (Appendix 3A) was used and obtained by the primary

researcher through direct contact with each of the selected participants. All participants were

required to verify they had Internet capability and acceptable technological skills to perform

video conferencing which was accomplished through the initial Skype© call. Also, during the

consent process, demographic and contact information were obtained. Rules regarding video

conferencing were reviewed as well as emphasis on participation being voluntary. Participants

selected their own identification pseudonym screen name and all study related information

pertaining to a particular participant were identified using the chosen pseudonym screen name

instead of the participants name or other identifying information to ensure anonymity and

confidentiality was maintained. Participants were restricted on the pseudonym screen name only

where it may have contained identifying information. Participants' questions were answered

during this time and the researcher's contact information was shared to allow for future questions

and concerns regarding the study.

Data Collection

Data collection was completed through online video conferencing allowing audio and

video recording of interviews. Online Skype© accounts were identified by the primary

researcher for each of the participants whom were selected for the study. The primary researcher

maintained the participants' pseudonym screen names of the Skype© accounts and only the

primary researcher had recording and saving privileges. This was to prevent tampering and

sharing of recordings for reasons other than intended study purposes. Recording of interviews

were achieved using Evaer Skype© video call recorder features which allowed video recording

directly to the researchers computer. Once an interview recording was completed a verbatim

transcription of the recording was completed. Failure of the participant to make the interview

appointment resulted in an email being sent to the participant inquiring if the participant wished to continue in the study. If no response was received from the participant within the time period of one week it was assumed that the participant had withdrawn from the study and a suitable replacement participant was identified and interviewed. Data collection began after the consent was obtained and continued until the completion of the interview. A pilot study was utilized to ensure appropriate steps had been taken regarding data collection before the larger study was undertaken. The pilot study helped to ensure video recording and viewing was appropriate, seamless, without glitches, and ensure data were collected and managed systematically. The researchers MP approved the pilot study results and interviews deemed acceptable were included in the full study.

With the approval of the university's IRB, the theoretical perspective for this dissertation was a phenomenographical, qualitative descriptive approach; data collection and analysis to investigate the common experiences which CRNAs perceived that led to their successful transition into their new role. A qualitative descriptive approach was utilized to gain an understanding of the CRNAs' experiences during their role transition and allowed for a broad selection of data through the description of their experiences (Creswell, 2002; Sandelowski, 2010). In-depth interviews were the primary method of data collection and interviews conducted with CRNAs within three years of graduation, who are working full time, formed the basis for this study. Data collection continued until data saturation was achieved and agreed upon by the primary researcher and major professor. After data saturation was achieved, two additional participants who had already been recruited were interviewed to ensure data saturation was achieved. Rigor and credibility were maintained through periodic review of data and themes by the researcher's MP and an experienced qualitative researcher during the analysis phase.

Pilot Study

A pilot study consisting of in-depth interviews with three participants was performed to test logistics and expose any deficiencies to be resolved before the full study was performed. Pilot study interview techniques, transcripts, and data collection techniques were reviewed by an experienced researcher to ensure rigor before the full study was performed. No changes were made to logistics during the pilot study and data collected from two of the three the pilot study participants were included in the full study. One participant from the pilot study did not have adequate Internet service and the interview was not included in the full study.

Video recordings through Skype© online conferencing were completed at the time of the communication and saved to a secure external drive via the primary researcher's computer after completion of the interviews. An advantage of recording video conferencing is that it allows researchers to experience and analyze the participants' verbal utterances, tone of voice, facial expressions, and body language (Salmon, 2015). Video recording allowed the researcher to re-examine the interviews for greater depth and verification of transcription accuracy and field notes. The average size for an hour video recording was estimated at approximately 10 gigabytes (GB). Each interview varied in length, lasting from 45 minutes up to 95 minutes. A follow up interview was conducted with each of the 15 participants approximately one week after the initial interview. The follow up interviews allowed the researcher to examine the data collected from the interviews, pose any follow up questions to the participants, and verify findings and meanings with participants. The follow up interviews also allowed participants time to reflect on the interview and possibly add to their stories. The external drive utilized for saving data contained 200 GB to ensure adequate space for all interview files and information. Backup copies of all data were saved to a secondary external drive of similar size.

Upon completion of the study, participants were contacted individually by the researcher to offer thanks for their participation and to ensure contact information was maintained during the analysis portion of the study. Current contact information was extremely important so that follow-ups could be made at a later date with the participants to verify reliability of findings with the participants. At this point, data collection was completed and data analysis commenced. Participants were contacted after study completion if questions arose and clarification was needed.

Data Analysis and Synthesis

This study had a principal investigator who was the primary researcher and was responsible for data management. The principal investigator was supported by a major professor and experienced researchers who oversaw the research process. A general method for the complex task of managing qualitative data was outlined by Mack, Woodsong, MacQueen, Guest, and Namey (2005). This method of systematically managing qualitative data includes converting raw data to computer files and organizing data storage to ensure security and privacy of data. Organized data helps to ensure rigor and standardization which is essential to security and validity of the study's results. For this study, the specific tasks were modified due to the collection of video data which were also transcribed along with preserving the original video recordings for possible future review. Salmon's (2015) outline for online recruitment and use of Internet communications technology for qualitative interviews were valuable for organization and standardization as well.

Converting Raw Data

The participants' video recordings were saved immediately after the interview and the video recordings were saved to the primary researcher's computer and transferred to a secure

external hard drive specific to the study. A backup on a second secure external hard drive was also made and stored separately from the main hard drive and recordings to prevent confusion.

Field notes from viewing the videos were important and were saved in the participant's file on the researcher's external hard drive. These field notes were made during the viewing of the video data and not during the interview itself. Hand written field notes were scanned and saved as an electronic document in the participant's file as well as the original hard copy. These field notes provided important information including casual and structured observations, quotes, and paraphrases of participants' responses. These field notes will be saved for future reference and to assist in any audit which the dissertation committee might require. Scanned copies were made for ease of sharing documents over secured servers and emails. Recipients of any shared files will ensure confidentiality and anonymity of the study participants prior to the sharing of any study data.

Organizing Data Storage

The primary researcher held responsibility for the organization and storage of data. The organizational structure and system for data management and storage were in place before any participant recording started to ensure data transfer was smooth and without data loss. The data were organized and saved to individual participants' files which were coded to an anonymous participant's ID screen name to ensure anonymity of the participants. Each video, transcript, and set of field notes started with a standard header that indicates the archival number, date of data collection or recording, transcription, and date of computer entry. The primary researcher was the one who performed these tasks. Any files shared with the dissertation committee contained the participants ID screen name and other identifying information were kept separate and confidential.

Data Analysis

Analysis was carried out systematically starting with recorded video interviews being transcribed verbatim. Video recordings allow for a multimodal record in which the conversations are kept in context and allow the researcher to re-examine the discussion for greater detail and further analysis with additional viewings. Emotions are also conveyed in greater detail through video recordings than audio recordings and field notes were taken during the viewing of video recordings. From the transcribed form, a descriptive and thematic structural analysis was utilized to find the texts meaning by dividing it into units and then analyzing these units for meaning. In qualitative data analysis, "a theme is an abstract entity that brings meaning and identity to a current experience and its variant manifestations" (Ugarriza, 2000, as cited in Polit and Beck, 2012, p.562).

The final step in the analysis identified common themes found across all the participants' interviews. This final step in the analysis was to identify common themes found across all participants' interviews to identify the factors which CRNAs' perceived as influencing their transition. Themes were developed taking into consideration the study's research guiding questions. Themes were developed through constant comparison within and across interviews. This was continued after each interview with transcripts being reread and videos re-examined to analyze data. Once common themes were identified transcripts and video recordings were re-examined to confirm findings across interviews. Follow up interviews were conducted to confirm findings with participants.

Findings and thematic analysis were then verified by supervising expert researchers with minor changes made to thematic categories. Data collection and analysis continued until saturation was achieved and no new themes were identified with the addition of new participants.

The criteria for data saturation were agreed upon by the primary researcher and supervising experienced researchers.

Trustworthiness

The criterion for evaluating the trustworthiness of a qualitative research study includes reliability (dependability), credibility (validity), and transferability. Reliability or dependability addresses the question of the researcher's neutrality in collecting the data (Mason, 2010). Reliability also refers to the extent to which research findings may be replicated by other similar studies. Neutrality means consistency in measurement and ensures the same researcher would report the same interpretation of the narrative on future occasions. Credibility or validity may be verified by study participants' confirming findings with intended meanings. Therefore, validity speaks to the transferability of this study to other similar studies and populations.

Reliability may be addressed in this study through the study's design and use of experienced researchers who reviewed and verified the primary researcher's findings. Video recording and transcription allowed for verification of interpretation through audits of the recordings and transcripts in ways previous audio recordings could not because video recordings included the participants' body language and were also viewed and examined to confirm interpretations. Data checks by experienced qualitative researchers on the primary researcher's committee were utilized to assure appropriate thematic interpretations. This auditing of data increased the trustworthiness of the study's data and findings. Complete details of the communications and data collected were preserved and downloaded to the researcher's secure external storage device to allow for future judgment of transferability of the study's findings. This data trail further helped to ensure scientific rigor was maintained.

The utilization of a process that Whiting and Sines (2012) presented, 'mind maps', is considered a useful tool in determining how close the findings relate to the participants' original data and a verification of credibility. Similar to a category map, Whiting and Sines' mind maps allowed the participants a chance to examine the created thematic analysis, ask for clarifications and explanations of items present, and confirm or comment on the merit of the map and how well it did or did not capture the intended theoretical meaning. After the study's completion and data analysis, mind maps were utilized and three study participants were contacted and presented with these conceptual maps to confirm the study's findings in relation to the participants' original views. Three randomly selected study participants were contacted after the study's completion to verify study findings. Skype© video conferencing was utilized for discussion with participants to verify findings and to answer any questions participants had. All three participants agreed the findings as representative of their experiences which added to the credibility of the study's findings. There is no canon or formal rules for validity and trustworthiness must be shown and persuasion used to argue the transferability of this study's findings. This was accomplished through precise reliability, credibility, and meticulous records being maintained throughout the study with the MP's supervision and guidance.

Limitations and Delimitations

Exclusion criteria for this study consisted of CRNAs who did not have access to the Internet and CRNAs who were not engaged in full time nurse anesthesia practice. Also, CRNAs who did not have video communication software were excluded from participation as well. Finally, if a CRNA was not a member of the AANA at the time of recruitment and not on the AANA's email directory, the researcher was not able to include them in this study. At the time

of this study, over 90% of CRNAs are members of the AANA so the population from which

participants were selected was sufficient for the needs of this study.

As with other qualitative approaches, this research was based on a holistic perspective

that assumes a world view which is based upon the perceptions of individuals and these

perceptions vary from person to person and over time (Joubish, et al., 2011). Delimitations of

this study also included that it only speaks to perceptions and views of CRNAs with full time

employment and within the particular time frame from graduation. CRNAs who were employed

only part-time during their transition into their new career might be influenced by different

factors than CRNAs employed full time and this study did not attempt to identify these

differences. Also, CRNAs with less than two years of full time employment or who have greater

than three years of employment may have different perceptions on what factors influenced their

role transition as CRNAs. Finally, CRNAs who have left the profession or are not members of

the AANA were not included in this study.

Riessman (2008) points out that qualitative research assumes a point of view that facts

are products of an interpretive process and that this interpretation cannot be avoided. As the

primary researcher, self-biases must be recognized, accepted, and factored into the analysis and

accepted as part of the researchers point of view. This researcher has been a practicing CRNA

for over seven years and has been influenced by previous practice environments as well having

been a clinical and didactic faculty member for three different anesthesia training programs in

the U.S.

Chapter Summary

This chapter provided an overview and description of the study's research methodology.

Qualitative individual in-depth interviews were employed by the researcher to describe the

perceptions of CRNAs on the factors affecting their successful transition into their new role as

CRNAs and to identify interventions perceived as positively influencing CRNA role transition.

The study utilized a pilot study of three participants to examine and review any study or

logistical issues. The participant sampling was completed utilizing individual interviews with

Internet communication audiovisual software. Credibility and dependability were accounted for

through various strategies outlined previously including data checks by experienced qualitative

researchers and participant confirmation of findings. It is this researcher's hope that this study

will be of value to CRNAs and employers who benefit from the successful transition of CRNAs.

Appendix 3A: Consent to Participate in Research

University of Wisconsin – Milwaukee
Consent to Participate in Research

Study Title: perceived factors affecting the role transition of certified registered nurse anesthetists

Person Responsible for Research: Andy Tracy

Study Description: The purpose of this research study is to describe and identify factors affecting the role transition of certified registered nurse anesthetists. Approximately ten subjects will participate in this study. If you agree to participate, you will be asked to participate in an online video conference with the researcher to discuss your role transition to a certified registered nurse anesthetist. This will take approximately one hour of your time.

Risks / Benefits: Risks that you may experience from participating are considered minimal. There are no costs for participating. There are no benefits to you other than to further research on the role transition of certified registered nurse anesthetist.

Confidentiality: Identifying information such as your name, email, and contact number will be collected for research purposes. Your responses will be treated as confidential and all reasonable efforts will be made so that no individual participant will be identified with his/her answers. The researcher will remove your identifying information and all study results will be reported without identifying information so that no one viewing the results will ever be able to match you with your responses. Data from this study will be saved on non-networked, password-protected drive and stored in a locked safe at the researcher's office off campus for five years. Only the primary investigator, Andy Tracy, and his dissertation committee members will have access to your information. However, the Institutional Review Board at UW-Milwaukee or appropriate federal agencies like the Office for Human Research Protections may review this study's records.

Voluntary Participation: Your participation in this study is voluntary. You may choose not to take part in this study, or if you decide to take part, you can change your mind later and withdraw from the study. You are free to not answer any questions or withdraw at any time. Your decision will not change any present or future relationships with the University of Wisconsin Milwaukee. There are no known alternatives available to participating in this research study other than not taking part.

Who do I contact for questions about the study: For more information about the study or study procedures, contact Andy Tracy, CRNA at ajtracy@uwm.edu.

Who do I contact for questions about my rights or complaints towards my treatment as a research subject? Contact the UWM IRB at 414-229-3173 or irbinfo@uwm.edu.

Research Subject's Consent to Participate in Research:

To voluntarily agree to take part in this study, you must be 18 years of age or older. By signing the consent form, you are giving your consent to voluntarily participate in this research project.

_____
Printed Name of Subject/Legally Authorized Representative

_____   _____
Signature of Subject/Legally Authorized Representative   Date

Appendix 3B: Recruitment E-mail Message

E-mail Solicitation for Research Participants

Content in the e-mail message:

Title: Perceptions of CRNAs on their Role Transition from SRNA to CRNA

Working with professors and researchers from the University of Wisconsin- Milwaukee's College of Nursing, I am conducting research on SRNA to CRNA role transition.

Recently graduated CRNAs between 2 and 3 years post-graduation who have been practicing full time since graduation are needed to participate in this study to discuss their perceptions of the factors affecting their transition from SRNA to CRNA.

All study participants will complete:

- One interview online using Skype© video conferencing.
- One follow up interview online using Skype© video conferencing approximately one week later.

Please contact me at ajtracy@uwm.edu if you are interested in participating in this study or if you would like more information. Thank you for your time.

Andy Tracy, CRNA

Doctoral Candidate

University of Wisconsin-Milwaukee

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CHAPTER 4: ONLINE QUALITATIVE RECRUITMENT AND INTERVIEWING

MANUSCRIPT

Abstract

Qualitative researchers use the Internet for recruitment and data collection is increasing with the advancement of computer technologies. Synchronous and asynchronous data collection methods may utilize Internet technology in the form of real-time audiovisual communication technology. This methodological article describes this researcher's use of the Internet for recruitment and data collection for a phenomenographical study on the factors affecting the role transition of certified registered nurse anesthetists. This article will present knowledge useful for researchers considering the Internet for recruitment and data collection for online qualitative research.

Internet Research

The Internet has become a part of contemporary global popular culture and recent graduates are more technologically savvy than previous generations (Ardévol, 2012). Since the 1990s, when the Internet and software became more affordable and accessible to the general population, the Internet has become a powerful tool for sharing textual, visual, audio, and audiovisual information (Wilkerson, Iantaffi, Grey, Bockting, & Simon-Rosser, 2014). By 2015, over 80% of Americans utilize the Internet on a regular basis and young adults use the Internet on a daily basis (Anderson, 2015; Whitehead, 2007). The Internet offers researchers many opportunities for recruitment and data collection beyond traditional methods. An advantage of online synchronous video conferencing and recording of interviews is that it allows the researcher to reach individuals across a great distance and revisit and re-examine the interview for greater depth. The purpose of this article is to examine the methodological aspects of Internet recruitment and interviewing. This article adds to the growing body of knowledge of online qualitative data collection methods by discussing this researcher's use of online recruitment and data collection for a phenomenographic study which utilized synchronous online individual interviews.

Study Description

The purpose of this methodological article is to describe the use of computer-mediated communication (CMC) technology to collect data from individual interviews for qualitative research. A pilot study was used to test the research data collection techniques of the study which examines the perceived factors affecting Certified Registered Nurse Anesthetists (CRNAs). Institutional review board approval was obtained prior to the start of the study and consents were obtained prior to interviews being conducted. Approval was also obtained by the

American Association of Nurse Anesthetists' (AANA) research division for utilization of the membership's information for recruitment of appropriate participants. The study in its entirety will be published separately.

Design

This researcher designed a qualitative research study to examine the perceived factors affecting CRNAs as they transitioned into their new roles. For the qualitative data collection, a phenomenographical approach with online recruitment and synchronous individual interviews over Internet CMCs was utilized. Fifteen participants were recruited from the AANAs' memberships who were recent graduates and employed full time as CRNAs. Semi-structured interviews were utilized to provide a balance of preplanned questions and follow up questions with the flexibility of the unstructured interview which allows for greater breadth and depth of data (Polit, & Beck, 2012; Salmon, 2015). Data were analyzed utilizing standard qualitative inductive content analysis (Hsieh & Shannon, 2005). The conceptual framework by Salmon (2015) was used for designing this study and has been utilized by numerous online qualitative research methods (Figure 4A).

Technology Selection

The selection of CMC for this study was based on a number of criteria. First, the technology needed to be free for participants. Second, the CMC needed to be easy for the participants to access and use. Third, the CMC needed to support synchronous (real-time) audio and video conferencing and recording. Fourth, recording of the CMC needed to allow for recording and play back from the saved recordings to allow for repeated viewing of data for analysis. Fifth, the CMC technology needed to allow recordings to be saved directly to the

researcher's computer to increase security of data. Finally, participants needed to be able to

create a pseudonym account for communicating with the researcher to ensure anonymity.

After the establishment and approval of the research design and criteria, this researcher

set out to examine and assess several Internet communication software options for study data

collection. Internet technology experts' opinions were sought based on technologies available at

the start of the pilot study. Strengths and weaknesses of available CMCs were examined as

outlined in Table 4A. After lengthy discussion with Internet technology experts about strengths

and limitations of available technologies, Skype© (Microsoft) communication software was

utilized for synchronous individual interviews and Evaer Skype© software was utilized for

recording and saving audiovisual files from the individual interviews.

Recruitment

Recruitment of research participants involved the determination of purposive sampling as

outlined in the study's design. Qualitative research designs use sampling to select participants

based on appropriateness and adequacy (Morse & Field, 2002). An online format for participant

recruitment and data collection was chosen after taking into consideration available CMC

technologies and capabilities of the current generation of CRNAs. Appropriateness addresses

the identification and use of participants who can best inform on the research question. One of

the strengths of recruiting using the Internet was the selection of potential participants based on

the AANA membership email list thereby increasing the appropriateness of each participant.

The second principle guiding qualitative research outlined by Morse and Field (2002) is

adequacy, which means that enough data is collected to develop rich descriptions of the

phenomenon under study. Online recruitment allowed for access to geographically dispersed

individuals and for the collection of data which would be far beyond traditional recruitment of

participants and offered potentially greater variety of experiences of the phenomenon under study.

A concern for researchers conducting online recruitment and interviewing is the ability to recruit an appropriate yet representative sample compared to the population under study (Hamilton & Bowers, 2006; Wilkerson, et al., 2014). Sampling bias from online recruitment and interviewing is possible if the population under study lacks Internet access and CMC capability. The question of sampling bias was discussed during the study's proposal. CRNAs are advanced practice nurses who have graduated with a minimum of a Master's Degree and who have utilized the Internet during their graduate school education and use advanced technologies in their anesthesia practices on a daily basis. Therefore, sampling bias based on online recruiting and interviewing was deemed minimal given the population under study.

Coordinating and Scheduling

Coordinating and scheduling individual interviews with geographically dispersed participants was challenging for a number of reasons. Recruiting participants from different time zones with varying work schedules involved various scheduling difficulties not seen when interviewing participants from local, single site, traditional interviews. An online calendar was utilized with a spreadsheet identifying the time zones each participant resided in and scheduling was always made based on the participant's time zone to avoid miscommunication and missing the interview time. The calendar and spreadsheet were essential to navigating participant availability throughout the initial and follow up interviews. Interviews were scheduled utilizing asynchronous communication methods such as text messages and emails. The participants were also able to select the time and place of their online video communications with the researcher which allowed for greater flexibility in scheduling the interviews. Once scheduling was

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completed, follow up emails were sent as reminders to participants 24 hours prior to the scheduled interview time. These reminders were effective in ensuring participants kept appointments or were able to reschedule appointments due to work schedule changes, which can occur in anesthesia. Follow-up interviews were scheduled at the end of the initial interviews to ensure accuracy of scheduling and utilized the same online calendar and spreadsheet based on the participant's time zone to avoid miscommunication.

Conducting Interviews

An advantage of recording video conferencing is that it allows researchers to experience and analyze the participants' verbal utterances, tone of voice, facial expressions, body language, and other sensory impressions. Web camera technology has advanced to mimic in-person interactions during interviews (Tuttas, 2015). The researcher's ability to view the recordings multiple times increases the details gleamed from the interviews which increases the adequacy of the data (Morse & Field, 2002). An advantage to online recording of video interviews is that it allows the researcher to revisit the interview and re-examine the video recordings for greater depth than a traditional face-to-face participant observation would allow. Traditional interviews without video recordings do not allow for the review of the participants' facial expressions and body language. The Internet also provided confidentiality of participants so that CRNAs could feel free to share information they might possibly not have wanted to share due to fear of their employers or peers finding out. The participants were also able to select the time and place of their online video communications with the researcher which allowed for greater flexibility in scheduling the interviews.

During the recruitment and interview process establishing rapport with participants was essential to ensure participants were comfortable with the researcher which allowed for open and

honest dialogue. The initial correspondence between researcher and participants was through email invitation and, upon selection into the study, followed by numerous emails collecting information about each participant. Multiple follow up emails seemed to help in developing the initial rapport and allowed for validation of the technological skills needed for participation. On the day prior to each interview an email reminder was sent to participants reminding them of the scheduled interview appoint time and date in case a participant's schedule had changed.

Assessing Technological Capability of Participants

When considering CMC technology for individual interviews and data collection, the proficiency of participants should be assessed or estimated prior to the start of the interview. Participants for this study were recent graduates, all with graduate school degrees, and who were advanced practice nurses (APNs). Given the education level of participants and their use of computers during their graduate school education, it was deemed appropriate to use CMC technology for data collection. Emails were sent to participants after selection and acceptance into the study. These initial emails pointed out the requirement of the participant's capability to utilize CMC software and all participants stated knowledge and familiarity with the CMC technology selected for the study.

Transcription Service

Verbatim transcription was accomplished for this study using All Star Transcription Service. The pilot study interviews were transcribed verbatim by this researcher and it was decided that the cost of transcription verses time this researcher would dedicate to typing transcripts would be worth the additional cost. Audio copies of the interviews were transcribed and transcription of each interview was confirmed by this researcher. Turnaround time for the transcription service was approximately 48 hours and utilized Microsoft Word for the transcribed

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data. Transcription service personnel are not usually familiar with terms specific to the health care field and therefore careful review of the transcripts was required to ensure accuracy. Numerous errors were noted and corrected by the primary researcher. These transcription errors were primarily from participants using anesthesia specific language and abbreviations not well known to non-anesthesia providers.

Lessons Learned

Through the experience of conducting one pilot study of six individual and follow-up interviews and twenty-four initial and follow-up interviews during the general study this researcher learned about using CMC technologies to recruit participants and collect qualitative data. This researcher's position was an insider's perspective having been a CRNA for over seven years and an instructor at a nurse anesthesia program. These experiences aided this researcher in knowing the CMC technology capabilities as well as the time constraints of prospective participants. This perspective also allowed the researcher to gain rapport with participants while also ensuring credibility and reliability of study data. Numerous lessons were learned which will hopefully allow future researchers conducting online qualitative phenomenographical research.

Access to Participants

New technologies and methodological approaches to research often require extra time and effort to gain approval. When new methodological approaches are proposed to national associations it can be difficult to gain approval if the research division's leaders are not open to new avenues of research data collection. Finding contacts within national organizations that are familiar with emerging technological advances and qualitative methods is essential in overcoming barriers and initiating new methodological techniques. The AANA research

division was very helpful in assisting this researcher in exploring online recruitment of participants even though this approach had not been previously conducted.

Testing and Retesting

Testing and retesting of CMC technologies was essential prior to conducting online research. Before using the selected CMC to conduct qualitative research for this study, this researcher conducted numerous practice sessions to gain familiarity and competency with Skype© and Evaer Skype© technologies. Skype© allows for connectivity through a variety of sources including "smart-phones," computers, tablets, and other mobile devices utilizing either audio or audiovisual capabilities. Initial testing was performed to select the audiovisual type which would supply the recording capability needed to gather facial and body expression during the interviews. This researcher decided on utilizing audiovisual recordings through computers to gain the greatest amount of data from interviews. Cellular telephones, tablets, and other mobile devices provide excellent audio for recording purposes but require the participant to hold the device. During testing it was found that participants often unintentionally repositioned the camera to angles which no longer included the participants face and body which would limit video data collection capability. Two participants attempted to use tablets during the initial interviews but the video imaging was poor and these participants were required to restart the interview using a stationary web camera. Stationary web cameras on laptop and desktop computers provided the most stable video collection, the highest quality of video interaction, and became the requirement for participants during interviews.

Distractions

During the interviews minimal distractions were needed to maintain the flow of conversation and data collection. A number of participants in the initial interviews were

interrupted by family members, pets, telephones, and pagers causing a disruption in the interview process which caused the participant to lose track of the conversation. Following these pilot interviews a statement was placed in the initial scheduling interview asking participants to select a time and location to minimize interruptions during the interview. Making participants aware of distractions decreased the likelihood of interruptions and improved the quality and flow of data collection. Conducting research on health care professionals who may be on call does increase the risk of distractions during the interview but making participants aware of these interruptions can lead to scheduling interviews during a time when these interruptions are minimized.

<div align="center">**Limitations**</div>

Despite the appeal of CMC technologies to provide an innovative methodological design to qualitative methods there are some limitations which must be addressed. Since online qualitative methods are in their beginning stages guidance on methodological issues regarding recruitment and data collection is sparse (Whitehead, 2007). Sampling limitations must be considered if a study's population is not computer and technology savvy. Similarly, participants may have the technological ability but reside in rural areas where the Internet is not reliable for CMC interviews. These individuals may be appropriate for other types of research involving online asynchronous methods. One participant in the pilot study had excellent technological ability but was eliminated from participation by an unreliable Internet connection. Appropriate web camera positioning must be ensured or the quality of video data collected will suffer. The United States population has increased its Internet and video communication usage but has reported a decreased use in desktop and laptop computers and is now increasing access through the use of smaller handheld devices (Anderson, 2015). The video quality from handheld devises

may be adequate for daily communication but are not typically adequate for collecting detailed video data during qualitative interviews.

Conclusion

In this article knowledge is presented about the use of CMC technologies as an appropriate and viable method to achieve online recruitment of participants and synchronous data collection for qualitative phenomenographic research. This method of online recruitment and data collection offers an alternative to traditional phenomenographic interviews when used with appropriate populations. Internet CMC interviews offer a suitable approach for the collecting of rich data through synchronous audio-video recordings which allow the researcher to review the recordings at a later date. This further allows for reexamination of the recordings to gather facial and body expression which the researcher may have missed during the initial interviews.

Emerging technologies are constantly changing and CMC technologies at the time of this study may not be appropriate in future studies. Researchers utilizing CMC technologies must utilize current technologies and determine their appropriateness when planning research. While synchronous communication methods may be acceptable for some studies, asynchronous communication methods may be appropriate in other situations. Limitations with the use of CMC technologies were acknowledged and the evaluation of data collection methods was reviewed and approved by experienced researchers during the study's proposal phase. Future research using online recruitment and CMC technologies for data collection will contribute to the growing body of knowledge as Internet technologies continue to expand.

Figure 4.1: Salmon E-Interview Research Framework
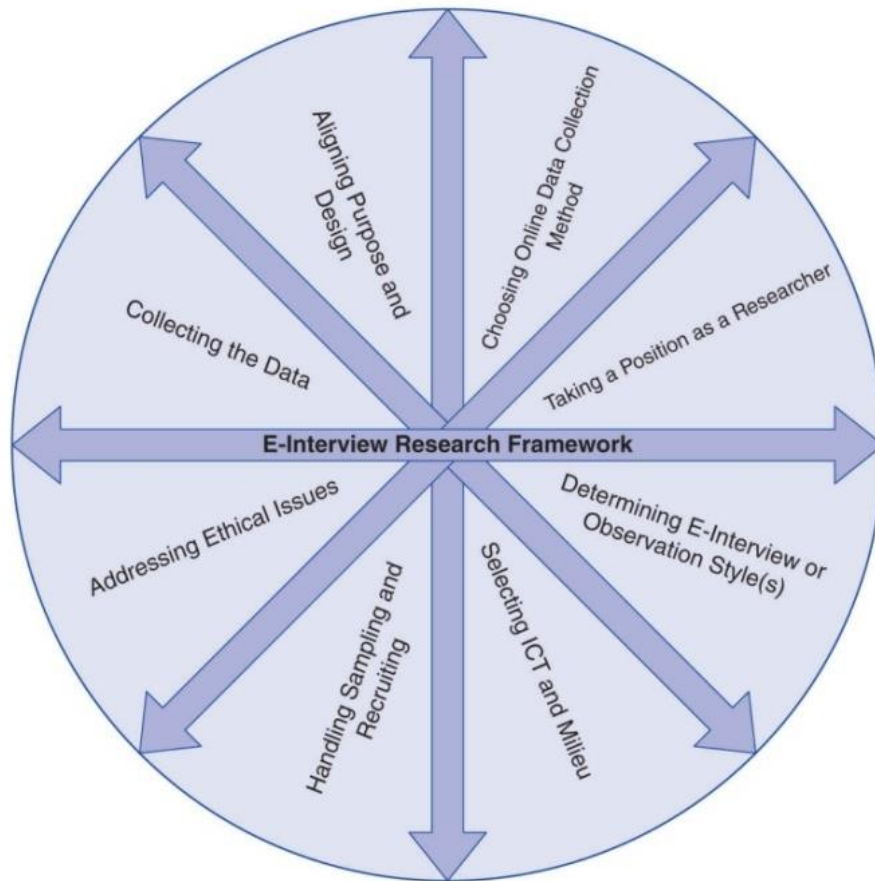
(Salmon, 2015, p.4)

Table 4.1: Technologies Examined: Strengths and Limitations

Technology	Strengths	Limitations
Skype + Evaer (Microsoft)	Skype was a free download for participants who could choose pseudonyms. Evaer recording software is designed for Skype and allowed for recording to researcher's computer and improved security by avoiding saving data online.	Recordings needed to be accomplished using Evaer software. Both Skype and Evaer needed to be purchased by researcher.
GoToMeeting (Citrix)	Web conference service to host online meetings.	Higher cost to researcher than skype so not selected ($49/month). Some platform limitation for use by participants. Webcam images not displayed when recording was played back.
BlueJeans (Blue Jeans Network)	Cloud based video conferencing company	Higher cost based on package needed for research study. Recordings are saved online and downloaded later.
ooVoo (ooVoo LLC)	Supports audio and video conferencing. Participants do not need to subscribe only researchers subscribes.	Recordings are saved online and then may be downloaded. Recording space is limited to 1000 minutes. Interface confusing and file transfer limit at 25MB.
TeamViewer	Supports audio and video conferencing. Functionality was rated 2 of 5 by reviewers	Issues and limitations with participants who use Apple computers. High cost to researcher so not selected.

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CHAPTER 5: A PHENOMENOGRAPHICAL STUDY ON THE PERCEIVED FACTORS AFFECTING CRNA ROLE TRANSITION

Abstract

The role transition from student registered nurse anesthetist (SRNA) to certified registered nurse anesthetist (CRNA) can be challenging and stressful. Thirty six states report a moderate shortage of anesthesia providers, either nurse anesthetists or anesthesiologists or both, making it difficult for needed surgeries to be completed (Jordan, 2011). CRNAs practice in every health care setting in the United States (U.S.) and administer anesthesia to over 32 million patients a year (Wilson, 2012). A qualitative phenomenographical research approach was utilized to identify the factors affecting CRNA role transition. Online recruitment and interviewing techniques were utilized to sample recently graduated CRNAs in order to identify these factors. Five factors were found promoting CRNA role transition: mastery of self-efficacy and confidence, expert coaching and guidance, supportive work environment, peer support, and previous experience as a SRNA. Four factors were also found impeding CRNA role transition: practice limitations, lack of orientation and preceptor, hostile work environment, and decreased work or case load. This study has implications for employers of newly graduated CRNAs in implementing interventions which promote successful role transition and guide future research.

Key words: role transition, certified registered nurse anesthetist, online interviewing, phenomenography

Certified registered nurse anesthetists (CRNAs) are advanced practice nurses (APN) specializing in anesthesia. Thirty six states report a moderate shortage of anesthesia providers, either nurse anesthetists or anesthesiologists or both, making it difficult for needed surgeries to be completed (Jordan, 2011). CRNAs practice in every health care setting in the United States (U.S.) and administer anesthesia to over 32 million patients a year (Wilson, 2012). In some states, CRNAs are the sole anesthesia providers in rural facilities and CRNAs are the primary anesthesia providers to U.S. military personnel. The role transition from being a student nurse anesthetist (SRNA) to CRNA can be challenging and stressful. The role transition for APNs continues into the first few years of practice (Barton, 2007). The initial period after graduation through the first few years of practice are arguably the most challenging as CRNAs transition into their new role as independent anesthesia providers. Strategies for successful role transition have been well examined in other APN specialties as well as student to registered nurse (RN) but there has been limited research on the factors affecting the role transition of CRNAs. Of the reported findings in previous APN research there has been disagreement in the literature on the factors affecting the role transitions from RNs into APN practices. While there are many similarities in knowledge and skills amongst APN specialties, there are also differences in their didactic education and clinical training (Hamric & Hanson, 2003).

Hamric and Hanson (2003) emphasize, that while APN specialties have many similarities in knowledge and skills, there are also differences in didactic education and clinical training resulting in different skill acquisition and role transition into APN practice. From these studies research for RN to CRNA role transition may be established. While similarities exist between the APN roles, Certified Nurse Midwives (CNMs), Nurse Practitioners (NPs), and CRNAs

arguably have differences in their role transitions and specific research is needed concerning RN to CRNA role transition to ensure the successful role transition of new CRNAs into practice. Only with a solid theoretical foundation and methodology can research be performed to further nursing science and research.

The purpose of this qualitative study was to describe the factors affecting CRNAs as they transition from being SRNAs to CRNAs. The researcher's motivation was that, through identifying these factors, employers and CRNAs will gain a greater understanding of these factors and be better able to assist CRNAs transitioning into their new role. Research indicates that CRNAs who left nurse anesthesia practice stated their reasons for leaving included role conflict, unclear role expectations, and increased job stress and dissatisfaction (Jones & Fitzpatrick, 2009). Turnover rates for CRNAs practicing in acute care settings are difficult to track due to lack of reporting. Eighty-three percent of hospitals do not report APN turnover rates or reasons for turnovers. Nursing Solutions (2015) has estimated the CRNA turnover rate at 4.5% with the cost to replace professional nurses reaching as high as twice the APN's annual salary. The complexity of the CRNA's transition requires substantial and consistent support to ensure success, satisfaction, and retention. CRNAs differ from other APNs and physicians in didactic and clinical education and therefore factors influencing CRNAs during their transition into their new role may also be different. Seibert (2009) argued that studies have not identified factors which positively influence CRNA role transition success. While research from other APN specialties may be examined for possible influencing factors, CRNA specific research is needed to identify which factors affect CRNA role transition. Identifying these factors may allow educators and employers to positively influence the role transition of newly graduated CRNAs and provide support during this transition period.

Methodology

Design

A qualitative, descriptive, phenomenographic design utilizing online recruitment and interviewing was used to explore the perceived experiences of recently graduated CRNAs making their transition into full time practice. Qualitative inquiry using a phenomenographic approach allows for the study of the factors which may be affecting a phenomenon giving a descriptive and holistic view of the data (Larsson & Holmström, 2007). Phenomenographic methods have been used in previous anesthesia research and this research design was based on previous role transition research in other APN specialties and approved by a committee of experienced researchers (Larsson & Holmström, 2007; Mauleon & Ekman, 2002). Online interview research is an accepted and growing method in qualitative research (Salmon, 2010). Online interview methods were deemed acceptable to understanding the phenomenon of CRNA role transition and answering the research questions.

The primary researcher was a doctoral student with two experienced researchers supervising the research study, one of whom was an experienced qualitative researcher. The dissertation committee also included an experienced CRNA researcher. Following approval from the university's institutional review board (IRB), approval was gained from the American Association of Nurse Anesthetists' (AANA) research division to utilized membership information for study recruitment. The AANA's membership comprises over 90% of CRNAs in the U.S. and allowed for recruiting participants from multiple areas in the U.S. (AANA, 2012).

Theoretical Framework

A number of theoretical frameworks were incorporated to identify the timing and rationale for gathering data. Benner's Theoretical framework (1984) was used to identify the

time period to examine what factors have affected CRNAs' role transition. Previous studies have identified that nurses settle into their new roles and complete their transitions within the first one to two years of full time practice (Heitz, Steiner, & Burman, 2004; Steiner, McLaughlin, Hyde, Brown, & Burman, 2008). Meleis's Transitions Theory created the framework to identify previous factors researched as well as areas for possible future research (Meleis, Sawyer, Im, Hilfinger Messias, & Schumacher, 2000). Transitions Theory has been used in previous research to define personal and community level transition conditions of APNs that either promote or inhibit their transition (Barnes, 2015). Therefore, Meleis's framework was utilized to identify the factors CRNAs perceived as promoting and inhibiting CRNA transition on the personal and community levels.

Sampling

Purposeful sampling is a sampling method based on the researcher's knowledge and judgment to select participants who will best be able to provide data about the phenomenon (Polit & Beck, 2014). Therefore, a purposeful sampling was used during the selection of candidates for this study so that interviews yielded valuable insight into CRNA role transition. The primary researcher chose a purposeful criterion-based sample of recently graduated CRNAs, all of whom had graduated in the last four years, were residing in the United States, and were employed full time as CRNAs. The AANA research division randomly selected 500 CRNAs from their membership and the primary researcher was allowed access to the emails for the purpose of study recruitment. These potential participants were emailed a copy of the IRB approval letter, study overview, and consent form prior to the start of the interview. Potential participants responded to the researcher through email and CRNAs identified as appropriate were contacted to verify they met study criteria and to set up interview appointments. The final

sample comprised a total of 15 CRNAs, 80% of whom were women. The average age was 30, with a range from 27 to 35. One CRNA completed a Doctorate of Nursing Practice while the other 14 completed a Master's of Science in Nursing or Nurse Anesthesia. Two participants were enrolled in a Doctorate of Nursing Practice program while practicing anesthesia full time during the interview process. To ensure anonymity, participants were assigned a pseudonym prior to the start of the interviews by the primary researcher and only the primary researcher had access to participants identifying information.

Data Collection

Data on recent graduate CRNAs were collected in semi-structured online interviews utilizing the Internet communication software Skype© video conferencing and Evaer© recording software. Interviews were conducted at a mutually agreed upon time between the primary researcher and participant. All participants were asked the same open-ended questions with similar follow-up questions and probes. Individual interviews were guided by four questions: (1) "Tell me about your new role as a CRNA and how does it fit your perception of what you thought it would be?" (2) "Thinking about your transition from being a SRNA to a CRNA, what was your transition like?" (3) "Thinking about yourself and the CRNAs you work with, how you would describe a CRNA who is successful and what do you feel makes the CRNA successful?" (4) "Thinking about the influences on your transition, both positive and negative, share with me any particular events and stories you feel affected your transition to your new role?" The interviews concluded when all of the interview questions had been addressed.

The primary researcher conducted all interviews which were recorded and transcribed verbatim with any identifying information removed from the transcripts to protect anonymity. The primary researcher took notes during the interviews and these descriptive data were added

after the interviews. A follow up interview was conducted with each participant approximately one week after the initial interview to validate the researcher's representations of the participants' intended meanings and to offer the participant the opportunity to add additional information.

Data collection continued until data saturation was achieved after 13 interviews. Polit and Beck (2014) described data saturation as achieved when the recruitment of new participants does not yield additional or new data and redundancy occurs. Two additional interviews were further conducted to verify data saturation and redundancy for a total of 15 participants. Data saturation was agreed upon by the primary researcher and supervising experienced researchers.

Pilot Study

A pilot study was performed to test logistics and expose any deficiencies before the full study was performed. No deficiencies were found during pilot testing and the pilot study interviews and data collection techniques were reviewed by an experienced researcher to ensure rigor before the full study was performed. One interview was deemed unacceptable due to poor quality of recordings resulting from the participant's internet service. No changes were made to logistics and the remaining interviews were approved and included in the full study. Rigor and credibility was maintained through periodic review of data and themes by the primary researcher's major professor and qualitative expert during the pilot study and full study to ensure adequate and detailed enough data were obtained.

Data Analysis

Verbatim transcripts were analyzed through inductive content analysis (Hsieh & Shannon, 2005). The content analysis consisted of eight steps: (1) reading the entire text to obtain a sense of the whole, (2) making memos of initial impressions of the text, (3) detailed and

word-by-word readings, (4) highlighting significant statements that appeared to capture key concepts in the interviews, (5) analyzing statements across interviews for labels that appeared in several interviews, (6) examining labels across interviews and transforming labels into themes, (7) developing descriptions of each theme, and (8) identifying quotes that represented the themes. This step-by-step analysis occurred after each interview.

Trustworthiness

The criterion for evaluating the trustworthiness of a qualitative research study includes dependability, credibility, and transferability (Mason, 2010). Dependability refers to the stability or reliability of data (Polit & Beck, 2014). Dependability was addressed through the use of experienced researchers to review study's design and verify the primary researcher's findings and analysis. Data checks by experienced qualitative researchers on the primary researcher's committee were utilized to assure appropriate thematic interpretations. An experienced CRNA researcher was included on the dissertation committee to ensure findings were appropriate and authentic to CRNAs. The auditing of data analysis increased the trustworthiness of the study's findings. Transcripts of all 15 participants were reviewed by experienced researchers to ensure neutrality in the interpretation of the narratives.

Credibility was verified by study participants' confirming findings with intended meanings during follow up interviews (Whiting & Sines, 2012). Follow up interviews with participants approximately one week after initial interview allowed all participants the opportunity to confirm data from the initial interview which added to credibility of findings. At the study's completion, interpretation of thematic analysis results were reviewed by three randomly selected participants whom confirmed the analysis captured the intended the participants' perception of the phenomenon. All three participants agreed with the primary

researcher's findings and intended meaning. An experienced CRNA researcher was included on the primary researcher's committee to verify and increase credibility of findings.

Transferability refers to the extent to which research findings may be replicated by other, similar studies and addresses the question of the researcher's neutrality in collecting the data (Polit & Beck, 2014). Experienced researchers reviewed each step and the primary researcher kept detailed notes to ensure a detailed data trail. Neutrality means consistency in measurement and ensures the same researcher would report the same interpretation of the narrative on future occasions. Verification of interpretations was conducted by the researcher's major professor and by an experienced qualitative researcher.

Results

In each of the interviews there was an overarching story of successful role transition with identifiable factors promoting and impeding the CRNA's role transition. The interviews were invaluable to answer all three research questions. Major themes were identified and findings are presented in accordance with the aligned research question and according to identified themes and outlined in Figure 5A. The use of direct quotes by participants was used to provide support and meaning to the themes (Sandelowski, 1994).

Research Question 1: Factors Promoting

The first research question asked participants to identify what factors they perceived as facilitating the transition into their new role as a CRNA. The factors promoting role transition included five major themes seen throughout the participants' stories. The five major themes developed during the analysis process included: (1) Mastery of self-efficacy and confidence, (2) Expert coaching and guidance, (3) Supportive work environment, (4) Peer support, and (5) Previous experiences as a SRNA.

Self-Efficacy and Confidence

Mastery of self-efficacy and confidence was the first theme identified as promoting

CRNA role transition. In each participant's interview, an overarching theme was found

regarding the importance of buildings self-efficacy and confidence. Each of the participant's

commitment to the profession was evident from the passionate discussion of growing knowledge

base, skills mastery, and continuing their education and training. Waugaman (2011) theorized

that CRNAs gain the commitment to the profession through role socialization. Participants

perceived this as extremely important during the first six to twelve months as affecting their role

transition. CRNAs making time to increase their knowledge base, further skills mastery, and

continuing education perceived themselves as transitioning into their new role earlier. All fifteen

participants stated in similar language the importance of self-efficacy and confidence as

essential.

> A1: Starting out, I was good at something, like intubations, but not so good at regional techniques like using the ultrasound for interscalene blocks. I think you really need time when you are first starting out to get solid with your skills and abilities… The group gave me time, didn't rush me, which really helped my confidence when I was new. I think it's really important to gain confidence in yourself and your skills when you are new. I think they (employers) had more faith in my skills and abilities than I did starting out but after a lot of blocks I got there.

> R1: I think once you have a handle on your practice, build your skills and became solid in your practice you have knowledge level and skills solid, then you look at a different picture. But you have to have your own practice solid first and you have to be in the right practice environment for you as a CRNA.

Expert Coaching and Guidance

The second theme identified was of expert coaching and guidance and was perceived as

beneficial whether it came through having a preceptor, an official or unofficial mentor, and

through online support. Eleven participants perceived having a preceptor or mentor as essential

to making the transition easier. Mentoring and preceptorship in CRNAs has not been studied in

great detail but Tracy (2015) found mentoring and preceptorship and Elisha and Rutledge (2011) found preceptorship was perceived as beneficial by SRNAs. Hayes (2005) also found a positive correlation between mentoring and self-efficacy in NP students during their education. Twelve participants described how having an expert coach, usually viewed as a mentor, was perceived as facilitating CRNA transition:

> E1: We had eight weeks where we were placed one on one with an experienced CRNA, kind of a mentor or preceptor. …it gave me an opportunity to have an experienced insight on the surgeons and to get to know the preferences for different cases… My mentor and I still talk, not as often as we did at first, but she still checks in on me from time to time, encourages me to take on new things to just improve my skills, experience, etc.

> T1: And the CRNA's that I worked with, she's been practicing since the 1980s. She was a former state president of the AANA and she also taught SRNAs. So, she was a great mentor. Being in an independent practice setting the first couple of cases she was close by but let me be myself. You know, she would be in the same building but in a different room. And she was available.

Online support and mentoring is a newer form of expert coaching and guidance and has been examined in other APN specialties. Poronsky (2012) discussed online mentoring with NP students as a means to promote NP role transition. Similar to Poronsky's findings three CRNAs perceived online support from experienced CRNAs as a positive influence on their role transition, especially when practicing in remote areas.

> JM1: I like being part of a CRNA Internet discussion group and having all those older or rather experienced CRNAs from across the US that don't mind being asked questions and give advice to newer CRNAs is great and helpful, and just growing like as a CRNA by having all these experts I can turn to, kind of like an unofficial mentor person.

Supportive Work Environment

A supportive work environment was the third theme that emerged from the data as promoting CRNA role transition. Participants perceived a supportive work environment as one which included autonomy, variety of cases based on skill needs, and supportive staff who wanted the CRNA to succeed in the new role. Thompson (1981) examined factors relating to CRNA job

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satisfaction and discussed a supportive work environment, autonomy, and anesthesiologist

support as influences. Participants, similarly, perceived a supportive work environment,

autonomy, as well as having a variety of cases as having a positive influence on their role

transition.

> TT1: We had a couple of anesthesiologists and CRNAs, a small practice. They were all very supportive. The first few months I took call I had a backup person I could call, even in the middle of the night, if I needed help or had questions. So I think that's been kind of an eye opener and something to get used to being independent right out of school. It definitely helps having colleagues who are supportive. They all work really well together and when I started everyone wanted me to succeed and were supportive.

> E1: We didn't get an orientation or anything. We were just passed around to all the very different CRNAs and anesthesiologists, everyone gets along really well, so you get comfortable working with everyone. They were all very supportive, they wanted me to succeed, and I felt like I could ask anyone anything and no one would judge me.

Peer Support

Peer support was the fourth theme that emerged from the data that participants perceived

as helping to promote CRNA role transition. Peer support was perceived as starting with other

newly graduated CRNAs, new employee meetings, and online support groups. Peer support has

been examined in newly graduated NPs and found that peer-to-peer sharing and support

improved satisfaction and retention in NPs (Thabault, Mylott, & Patterson, 2015). Similarly,

CRNA participants listed having other recently graduated CRNAs starting around the same time

gave them a perceived benefit and positively influencing their transition. Eight participants

reported similar perceptions about how effective peer support was during their role transition by

having peers to support them.

> E1: A group of us all started at the hospital together as new grads. It was less nerve racking to have other people starting with me. I think it helps having other new grads as well. I feel like I could talk to the other new grads easier and none of them were going to judge me. We were all in the same boat together.

A1: Everything and everyone was very new to me, so I think that newness was the hardest thing. I think having a another person I went to school with start with me and peer support we gave each other was the greatest help to getting started on a good note and succeeding right out of school. We texted and compared notes daily on what we were doing and how we felt we were doing.

New Employee Meetings

New employee meetings were seen as a type of peer support and positively influencing CRNAs especially when starting in a practice with other experienced providers. Having other new providers, whether APNs, physician assistants, podiatrists, physicians, or other recently graduated providers, who met on a regular basis to socialize was also perceived as a factor promoting role transition in CRNAs. Similarly, Sargent and Olmedo (2013) identified participation in interprofessional meetings by novice NPs assisted in facilitating their role transition. CRNA participants found new employee interprofessional meetings to help facilitate their role transition as well as assisting them to socialize at their practice setting.

A1: We had new employee meetings, very informal, but it was just nice to get to meet the other new providers and a chance to get to know each other outside of procedures, surgeries, or clinics. It really helped knowing someone from the various services and you kind of felt like you weren't going through it alone, which is nice when you are the only new grad (CRNA) that the hospital has hired in years. Having our monthly meetings really helped to ease the tension, nerves, and stress, for me at least.

E1: They have a new employee meeting or they asked us for our input. The meetings were fun though and we got to meet all the other newbies, other health care providers. The fact that we had a group who got together monthly really helped and knowing you weren't the only one starting off and others (non-CRNAs) were going through similar things as you. It also helped to get to know people you may not see every day but might need to call for a consult.

Previous Experience

Previous work experience as a SRNA was the fifth theme that emerged from the data that participants perceived as promoting CRNA role transition. Many of the CRNAs interviewed accepted their first nurse anesthesia practice in a setting where they had previously rotated

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through during their nurse anesthesia education. CRNAs perceived their transition as easier at a practice if they had previously worked at the location during their anesthesia rotations. One participant explained how rotating through a practice not only made it easier for her transition but it also allowed her to assist another recently graduated CRNA who had not rotated through the hospital.

> E1: Okay. Well, I mean I guess like starting my job what helped was that I had been a SRNA there before so I was familiar with the place and people, it's such a big place that its helpful to be familiar with some of the surgeons and the cases. Another CRNA started around the same time I did. She hadn't rotated through our hospital. I had an easier transitioning and often helped her. A lot of my classmates took positions at hospitals they rotated through because it just seemed easier when you already know the place, people, types of cases, and you kind of know what you are getting yourself into.

> TT1: I rotated through the hospital while I was in school so from that aspect of it I knew what I was getting myself into as compared to if I hadn't had clinical there. It helped that they all knew me from when I rotated through there and approached me to work there. They all work really well together and when I started it just seemed like it was easier knowing them and they knew me as well. It helped me to fit in easier with the group.

Research Question 2: Factor Impeding

The second research question asked to identify factors impeding role transition. The factors perceived by CRNAs as impeding role transition included four major themes as seen throughout the participant's stories. The four major themes developed during the analysis process included: (1) Practice limitations, (2) Lack of orientation and preceptor, (3) Hostile work environment, and (4) Decreased case complexity and work load.

Practice Limitations

Practice limitations were perceived as impeding role transition and most participants felt frustrated with not being able to utilize and master the skills participants had learned during their education. Previous research by Alves (2005) identified CRNAs with limited scope of practice reported increased work stress and role insufficiency. Similarly, this study's participants

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reported being frustrated and leaving their initial practice settings due to practice limitations for

practice settings which allowed the participants greater autonomy and less practice restrictions.

> J1: I think of like the first time when I was working with one of our younger anesthesiologists at my first job it was actually rough just because I felt like, she like wouldn't give me any space. It was an uneventful case on a fairly healthy patient, but she literally just wouldn't let me make any clinical decision and barked orders at how she wanted that anesthetic. So I was frustrated, but I was new and didn't want to make waves so I just bit my tongue and kept my head down. It was so hard to feel like a CRNA there. I felt more like an assistant than a provider, which is how they viewed us. After six months I got out and went to a hospital where the anesthesiologists allowed the CRNAs more autonomy. Two years later and I'm here and love my practice.

> DA1: My first day did not start off well when I had a sick patient and the anesthesiologist and I disagreed on how much to give the patient for induction. It didn't matter if I had reasoning, she told me I was just a nurse and that she would decide what anesthetics would be given. I found out later they had a huge turnover in CRNAs because of the politics and practice limitations. I stayed there for six months… then took a new practice position.

Lack of Orientation and Preceptors

Lack of orientation and preceptors were perceived as a very limiting and frustrating

factor by participants. CRNAs interviewed perceived a lack of orientation and preceptors as

impeding their role transition while increasing their stress and anxiety while starting their new

career. Two participants reported leaving their first practice settings after six months of

employment due to frustration, stress, and anxiety. A study involving NPs reported that a formal

orientation was found to promote NP role transition (Barnes, 2015). Participant TJ1 described

how he perceived his first practice setting after graduation as hitting the ground running, never

receiving an orientation, and felt like a factory assembly line worker who was just there as a

number and not a valued provider.

> TJ1: They definitely let me be independent but a little orientation or some kind of preceptor or person to ask questions to would have been helpful. I was actually the last employee for that group that was hired before they started an actual orientation phase. The employees hired after me, they went through a week of orientation and having a CRNA precept them… The anesthesia group finally started the formal orientation and

preceptor because all the new CRNAs kept quitting so I do think the ones that came after me had an easier time, you known transitioning into the job.

L1: Well, the first hospital where I started, I really didn't have much of orientation. I was put in the room the first day, kind of learned where things were as I was doing cases. An orientation would have been helpful, at least for my stress level. I kept thinking, what if something goes wrong because I don't know where anything is. Everyone was helpful when I asked for it but just not knowing where the various equipment, like Glidescope was stored made it stressful.

Work Environment

A hostile work environment was viewed as extremely impeding on CRNA role transition by participants. CRNAs working in unsupportive or hostile work environments discussed how the daily stress and tension made transitioning more difficult. A hostile work environment is not unique to nursing or nurse anesthesia. Prior research involving medical internists found hostile environments were not conducive to learning their new role as physicians (Daugherty, Baldwin, & Rowley, 1998). One participant discussed how a hostile work environment impeded his role transition and he eventually left for a different practice setting.

JM1: I want to work in an academic center. What I didn't expect was how political the place was. No one gave me a heads up during my interview process. I came to find out that they called CRNAs nurses, not even nurse anesthetists, just referred them as nurses. The surgeries would have delayed start while we waited for the anesthesiologists. Even the surgeon would get frustrated. Between seven and three we had to be totally supervised but after three pm, when the anesthesiologists wanted to go home, we could be independent and do cases without them. It was all so political and frustrating. After about six months I left for another practice where the anesthesiologists are great and CRNAs are treated like APNs and are involved and respected in the department.

R1: I don't do any regional blocks; I don't get to participate in that part of it. I attempted towards the beginning and it was almost, hostile – shall we say that's something that the anesthesiologist do, they told me you don't have to worry about that, you're just a nurse. When you suggest a spinal for a patient in a certain case they might say, oh no, no regional, just general, it's just a general for you nurses. It definitely makes the whole transition more difficult when you are in a hostile, limited practice; you know the group is not supportive of CRNA practice. I am leaving when my contract is up.

Case Complexity and Work Load

Decreased case complexity and work load were perceived as impeding role transition by participants. Two CRNAs interviewed reported leaving their first, smaller practice setting after only a few months to start at a larger practice where there was increased case complexity and work load. These participants perceived the need for higher case complexity and work load as needed to complete their transition.

> I1: It felt like the transition to CRNA took longer because I wasn't doing very many cases and they were all pretty healthy... So it wasn't really diverse or complex. So after a while I felt like I got it for the most part but I wasn't really getting a good handle on my skills or becoming a CRNA. It just wasn't the best practice setting when first starting out. So I switched to the hospital where we do a great variety of complex cases and I think you need that exposure when you are first starting out in order to complete your transition from SRNA to CRNA and be successful at it.

> TT1: I think having a good variety of cases is important before you are on your own. If you don't have it I don't think you'd do very well. You are setting yourself up for failure if you don't have a good variety and don't do enough cases to get solid in your skills. You need to know how to do all the different cases wherever you are first working.

Discussion and Implications

The aim of this study was to examine factors perceived by CRNAs as affecting their role transition. This is the first phenomenographical study that explored these factors and it provides the preliminary work for future research on CRNA role transition. As outlined by Meleis's Transitions Theory (Meleis, et al., 2000), a number of community-based transition conditions or factors were identified as facilitating and inhibiting CRNA role transition. This adds to the existing knowledge on personal-based transition conditions in the literature (Clayton, Lypek, & Connelly, 2000; Cook, Marienau, Wildgust, Gerbasi, & Watkins, 2013; Hoversten, 2011; Mauleon & Ekman, 2002; Schreiber & MacDonald, 2010; Waugaman & Aron, 2003; Waugaman & Lohren, 2000; Waugaman & Lu, 1999; Wren, 2001). While other research has identified personal-based transition conditions, there has been limited research on community-

based conditions affecting CRNA transition (Clayton, et al., 2000; Thompson, 1981). This study confirms the community-based transition conditions identified by Mauleon and Ekman (2002) and identifies other factors influencing CRNA transition.

The results of this study could have implications for CRNA practice and employers. The Institute of Medicine (2010) has recommended establishing programs which support APNs, including CRNAs, during their transition into practice. Similar to research on NP role transition (Sargent & Olmedo, 2013), CRNAs who had orientation periods perceived the formal orientation as having a positive influence on their role transition. While the optimal orientation time period for CRNAs has not been researched and was outside the scope of this study, these findings have implications for employers of CRNAs. Participants perceived that orientations should include familiarization to equipment and personnel and allow sufficient time to become comfortable with new equipment. Future research could examine formal orientation similar to Barnes' (2015) study involving NPs and employers of CRNAs could benefit from knowledge gained from such research. Having optimal orientation periods could cut costs by avoiding too lengthy of an orientation period while still optimizing the time period needed for CRNAs.

Another program which would support CRNAs during their transition into practice includes the use of a trained preceptor. Assigning a designated preceptor was perceived by participants as a beneficial intervention to CRNA role transition. Preceptor use and influence on NP role transition has been reported as positively influencing NP role transition during a 12 month new NP residency program (Thabault, Mylott, & Patterson, 2015) and a similar intervention might be appropriate for employers of CRNAs to implement. Further research is needed to confirm these findings and ascertain the time period for preceptorship that would be optimal during CRNA role transition. Similar to results found in NP research, employers may

find increased satisfaction and retention from the use of official preceptors during the transition period (Thabault, Mylott, & Patterson, 2015).

Use of mentors during CRNA role transition has been previously researched and this study helps to confirm Schreiber and MacDonald's (2010) findings that that mentorship positively influences CRNA transition. Future research is needed to determine the types of mentorship which are optimal in various employment situations. Mentoring has been examined regarding other APN specialty role transitions and further research would be beneficial in examining the effects of mentoring during CRNA role transition (Brannagan & Oriol, 2014; Schreiber & MacDonald, 2010; Poronsky, 2012). Employers may find implementing a mentorship program for recently graduated CRNAs by experienced CRNAs as a way to promote CRNA role transition and increase CRNA retention and satisfaction.

New employee meetings were perceived as a positive intervention by this study's participants and have been utilized by employers of recently graduated NPs to facilitate role transition and interdisciplinary learning (Sargent & Olmedo, 2013). Examining research utilized in other APN settings could be beneficial in adapting content for CRNA participation in similar interprofessional meetings of new providers. Future research using Sargent & Olmedo's (2013) study as a foundation could explore the benefits of interprofessional meetings on CRNA role transition and employers may find that other professions may also benefit from new employee interprofessional meetings. Furthermore, employers could find research relating to new employee meetings as a cost effective way to assist all recently graduated professionals with their role transitions through one interprofessional meeting program.

Limitations and Delimitations

Exclusion criteria for this study consisted of CRNAs who do not have access to the Internet and CRNAs who are not engaged in full time nurse anesthesia practice. Also, CRNAs who do not have video communication software were excluded from participation as well but given the current make up of recently graduated CRNAs and their technological capabilities, these individuals were likely to be very few in number. Finally, if CRNAs were not members of the AANA and not participating on the AANA's email directory, then CRNAs could not be included in this study. CRNAs who are not members of the AANA do not have access to the benefits from being a member of the national organization and some of the membership benefits. Identifying factors affecting AANA members' verses non-members' CRNA transition was outside the scope of this study. The AANA does provide a variety of support to its members so the factors affecting non-members may be different from members. Currently, over 90% of CRNAs are members of the AANA so the population from which participants were selected was deemed sufficient for the needs of this study.
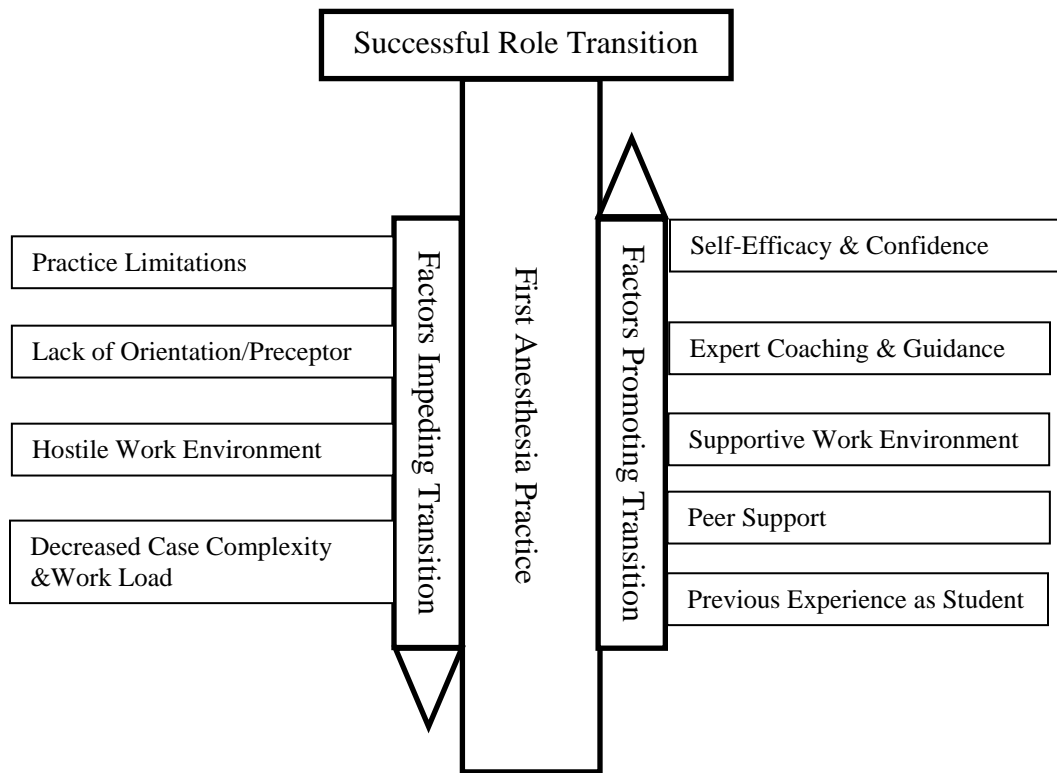
As with other qualitative approaches, this research is based on a holistic perspective that assumes a world view which is based upon the perceptions of individuals and these perceptions vary from person to person and over time (Joubish, Khurram, Ahmed, Fatima, & Haider, 2011). Delimitations of this study also include that it only speaks to perceptions and views of CRNAs with full time employment and within this particular time frame from graduation. CRNAs who were employed only part-time during their transition into their new career as CRNAs might be influenced by different factors than CRNAs employed full time and this study will not attempt to identify differences. Finally, while generalizability of findings from qualitative studies may be limited, the transferability of findings may be applied to other similar settings. Future research may address these limitations and further nursing research in the area of CRNA transition.

Riessman (2008) points out that qualitative research assumes a point of view that facts are products of an interpretive process and that this interpretation cannot be avoided. As the primary researcher, self-biases must be recognized, accepted, and factored into the analysis and accepted as part of the researchers point of view. This researcher has been a practicing CRNA for over seven years and has been influenced by previous practice environments as well as experiences as a clinical and didactic faculty member for three different anesthesia programs in the U.S.

Conclusion

This study set out to answer research questions designed to identify the factors promoting and impeding the role transition specific to CRNAs. The individual interviews provided invaluable data for answering these questions as well as identifying interventions which employers of CRNAs may utilize to assist newly graduated CRNAs as they transition into their new roles. The compassion and empathy shared by the participants through their stories and perceptions culminated into rich descriptions of the first few years of CRNA practice and identified many factors both promoting and impeding CRNA role transition. This study's findings offer insight into the role transition of CRNAs and offer employers possible interventions to assist recently graduated CRNAs during their role transition. Further research is needed to confirm these findings as well as quantitative research to verify this study's findings and address the feasibility of possible intervention in the larger population of recently graduated CRNAs.

Figure 5.1: CRNA Role Transition

- Successful Role Transition
- Factors Impeding Transition
- First Anesthesia Practice
- Factors Promoting Transition
- Practice Limitations
- Lack of Orientation/Preceptor
- Hostile Work Environment
- Decreased Case Complexity &Work Load
- Self-Efficacy & Confidence
- Expert Coaching & Guidance
- Supportive Work Environment
- Peer Support
- Previous Experience as Student

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CHAPTER 6: SYNTHESIS

This study was carried out to examine the perceived factors affecting CRNA role transition through the use of online recruitment and interviewing of recently graduated CRNAs working in full time practice settings. The aim of this study was to identify the factors promoting and impeding CRNA role transition and what factors CRNAs believe could be influenced to promote CRNA role transition. Participants in this study were selected to elicit deep, descriptive data to answer the designed research questions. This dissertation included three integrated manuscripts including a literature review, the study's results manuscript, and a qualitative methodology manuscript.

Synthesis of Manuscripts

The literature review on RN to CRNA role transition was conducted and findings were presented and discussed. Due to the paucity of available research, the literature review included both RN to SRNA and SRNA to CRNA role transition. The literature review included theses, dissertations, articles, and books from the past 20 years, 1994-2014. Dissertations were examined to provide a comprehensive review and to identify any unpublished research. All relevant research articles were selected, read, and reread for differentiation and appropriateness to CRNA role transition. The synthesis, implications, and areas for future research from these findings are included in the discussion.

Factors Promoting CRNA Role Transition

The results of this study were presented as a manuscript outlined by the study's research questions. The first research question asked participants to identify what factors they perceived as promoting their role transition as a CRNA. The factors identified as promoting role transition included five major themes seen throughout the participants' stories. These themes included: (1)

Mastery of self-efficacy and confidence, (2) Expert coaching and guidance, (3) Supportive work environment, (4) Peer support, and (5) Previous experiences as a SRNA. These are discussed with relevant research from other APN and health care specialties. Also, possible future research is examined in these areas.

Mastery of self-efficacy and confidence was the first theme identified as promoting CRNA role transition. Each of the participant's commitment to the profession was evident from the interviews and passionate discussion of stories about growing their knowledge base, skills mastery, and continuing their education and training. Waugaman (2011) theorized that CRNAs gain the commitment to the profession through role socialization. Furthermore, CRNAs who fail to socialize to the new role as CRNAs are vulnerable to leaving the profession (Waugaman & Aron, 2003). Participants of this study perceived the importance of the mastery of self-efficacy and confidence as important especially during the first six to twelve months in their in role as a CRNA. Previous research has also stated that recently graduated CRNAs are more critical of their own skills and performance than their employers (Cook, Marienau, Wildgust, Gerbasi, & Watkins, 2013). This study's findings agreed that CRNAs making time to increase their knowledge base, further their skills mastery, and continuing their education perceived themselves as transitioning into their new role earlier and with greater ease. Future research could explore what recently graduated CRNAs perceive as skills which require further mastery and which skills are perceived as mastered. The time period CRNAs need to master self-efficacy, confidence and develop their skills mastery was beyond the scope of this study and future research could explore this area.

Expert coaching and guidance was identified as the second theme promoting CRNA role transition and participants felt expert coaching and guidance could come through having a

preceptor, an official or unofficial mentor, and through online support. Participants perceived having a preceptor or mentor as essential to making the transition easier. Mentoring and preceptorship in CRNAs has not been studied in great detail but Tracy (2015) found mentoring and preceptorship and Elisha and Rutledge (2011) found preceptorship was perceived as beneficial by SRNAs during their education. Schreiber and MacDonald (2010) found mentoring of recently graduated CRNAs lead to successful transition into the CRNA role. Mentoring has also been shown to be supportive for minority nurses as they transition into practice (Banister, Bowen-Brady, & Winfrey, 2014). Hayes (2005) also found a positive correlation between mentoring and self-efficacy in NP students during their education. Many participants of this study did not differentiate between preceptorship and mentorship which is a limitation but could allow for further investigation as to the degrees and types of preceptorship and mentorship and their effects on CRNA role transition.

Online support and mentoring is a newer form of expert coaching and guidance which has been examined in other APN specialties but not with CRNAs. Poronsky (2012) discussed online mentoring of NP students as a factor positively influencing NP role transition. This study's findings were similar to Poronsky's in that recently graduated CRNAs perceived online support from experienced CRNAs as a positive influence on their role transition. Brannagan and Oriol (2014) created a model for online orientation and mentoring of adjunct nursing faculty. They theorized that part-time faculty may be socialized similarly to full-time faculty. Future research exploring Poronsky's and Brannagan and Oriol's online mentoring models is a possible route and could have applications for supporting full-time and part-time CRNAs during their role transition.

A supportive work environment was the third theme that emerged from the data as promoting CRNA role transition. Participants perceived a supportive work environment as one which included autonomy, a variety of cases based on skill needs, and supportive staff who wanted the CRNA to succeed in the new role. Thompson (1981) examined factors relating to CRNA job satisfaction and discussed a supportive work environment, autonomy, and anesthesiologist support as influences. Other professionals have also found supportive work environments and staff as key to successful role transitions and new employee satisfaction (Benson, Levenson, & Boudreau, 2006; Khatatbeh, 2013). Participants, similarly, perceived a supportive work environment, autonomy, as well as having a variety of cases as having a positive influence on their role transition.

Peer support was the fourth theme that emerged from the data that participants perceived as helping to promote CRNA role transition. Peer support was perceived as starting a practice where other recently graduated CRNAs are also starting, where new employee meetings take place, and online support groups are available. Peer support has been led to be beneficial in undergraduate nursing education (Botma, Hurter, & Kotze, 2013) as well as in SRNA education (Tracy, 2015). Likewise, peer support has been examined in newly graduated NPs and found that peer-to-peer sharing and support through online interprofessional collaboration found improved satisfaction and retention in NPs (Thabault, Mylott, & Patterson, 2015). Similarly, CRNA participants in this study listed having other recently graduated CRNAs starting with or around the same time gave them a perceived benefit and positively influenced their role transition. A possible direction for future research could explore the use of peer mentoring on CRNA role transition in greater detail.

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New employee meetings were seen as a type of peer support and were perceived as positively influencing CRNAs especially when starting alone in a practice with other experienced providers. Having other new providers, who meet on a regular basis to socialize, whether APNs, physician assistants, podiatrists, physicians or other recently graduated providers, was also perceived as a factor promoting role transition in CRNAs. Sargent and Olmedo (2013) identified participation in interprofessional meetings by novice NPs assisted in facilitating their role transition. Similarly, CRNA participants found new employee interprofessional meetings to help facilitate their role transition as well. Future research using Sargen & Olmedo's study (2013) as a foundation could explore the benefits of interprofessional meetings on CRNA role transition. Also, future research could explore the types of new employee meetings, topics discussed, and optimal meeting length from which CRNAs could benefit.

Previous work experience as a student was the fifth theme that emerged from the data that participants perceived as promoting CRNA role transition. For this study, previous work experience was defined as the CRNA having rotated through the hiring facility as a SRNA prior to being hired there as a full-time CRNA employee. Many of the CRNAs in this study accepted their first nurse anesthesia practice position in a setting where they had previously rotated through during their nurse anesthesia education. CRNAs perceived their transition as easier at a practice if they had previously worked at the location during their anesthesia rotations. Many participants explained how rotating through a practice not only made it easier for their transition but how it also allowed them to assist other recently graduated CRNAs who had not rotated through the hospital. Little research was found in nursing on this factor but research on factors that influence medical students' selections of residency programs found that prior rotations through a facility significantly influenced their decision to apply for a position at the facility

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(Love, Howell, Hegarty, McLaughlin, Coates, Hopson, … & Santen, 2012). Likewise, research involving physicians also found training in facilities of similar practice size and location positively influenced physicians to be successful in their new practice after medical school (Khatatbeh, 2013). Future research on CRNAs' employment decisions regarding their first employment selection could open educational opportunities for SRNAs to rotate through facilities that previously did not accept SRNAs.

Factors Impeding CRNA Role Transition

The second research question asked to identify factors impeding role transition. Four major themes emerged from the data as factors perceived by CRNAs as impeding role transition. The four major themes that were identified during the analysis process included: (1) Practice limitations, (2) Lack of orientation and preceptor, (3) Hostile work environment, and (4) Decreased case complexity and work load. These are discussed with relevant research from other APN and health care specialties. Also, possible future research is examined in these areas.

Practice limitations were perceived as impeding role transition and frustration was expressed at the inability to utilize and master the skills participants had learned during their education. Previous research by Alves (2005) identified CRNAs with a limited scope of practice reported increased work stress and role insufficiency. Research involving physicians by Khatatbeh (2013) identified similar frustrations in new rural physicians and how practice limitations lead them to leave for more desirable practice settings. Similarly, this study's participants reported being frustrated and leaving their initial practice settings due to practice limitations for practice settings which allowed the participants greater autonomy and less practice restrictions. Greenwood and Biddle (2015) conducted exploratory research on practice limitations on CRNAs and found a significant number of CRNAs reported practice limitations.

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While practice limitations are not unique to nursing, the current political environment surrounding APN's practice may be causing increased stress and working tensions in some practice settings. Further research could explore practice limitations nationwide with CRNAs, other APN specialties, and other health care providers.

Lack of orientation and preceptors were perceived as a limiting factor in CRNA role transition by participants. CRNAs interviewed perceived a lack of orientation and preceptors as not only impeding their role transition but also increasing their stress and anxiety during their transition. Two participants reported leaving their first practice settings after six months of employment due to frustration, stress, and anxiety. A formal orientation was found to promote NP role transition (Barnes, 2015) and may also be beneficial to recently graduated CRNAs undergoing their role transition. Orientation periods have not been studied in regards to CRNA role transition, however formal orientation has been studied in other APN specialties and found to be beneficial to role transition (Barnes, 2015; Brannagan & Oriol, 2014; Sargent & Olmedo, 2013; Scholtz, King, & Kolb, 2014). The optimal orientation period length and type is not known and was outside the focus of this study. Participants did perceive that orientation should include familiarization to equipment and personnel and allow sufficient time to become comfortable with new equipment. Further research in this area could improve CRNA role transition and answer the questions of what types and length of orientation are perceived as beneficial to CRNAs undergoing role transition.

A hostile work environment was viewed as extremely impeding on CRNA role transition by participants. A hostile work environment is not unique to nursing or nurse anesthesia and vertical and lateral workplace bullying has been researched across health care providers (Waschgler, Ruiz-Hernández, Llor-Esteban, & Jiménez-Barbero, 2013). Research surrounding

hostile work environments often discusses bullying as a form of the hostility present in these environments. Prior research involving medical internists and residents found hostile environments were not conducive to learning their new role as physicians (Daugherty, Baldwin, & Rowley, 1998; Quine, 2002). Similarly, CRNAs in this study who reported working in unsupportive or hostile work environments discussed how the daily stress and tension made transitioning to their new role as a CRNA more difficult. Future research could explore the reasons for the perceived hostile work environments to newly graduated CRNAs in order for solutions to be developed and prevent turnover of CRNAs.

Decreased case complexity and work load were also perceived as impeding role transition by participants. Two CRNAs interviewed reported leaving their first, smaller practice settings after only a few months to start at a larger practice where there was increased case complexity and work load. These participants perceived the need for higher case complexity and work load as needed to complete their transition. Other CRNAs interviewed discussed choosing their first practice in order to obtain certain experiences. Khatatbeh (2013) found caseload and case variety affected new physicians' willingness to remain in their initial practice. Similarly, participants in this study perceived having the appropriate practice setting to match their perceived workload and case complexity was needed. Many variables must be considered regarding an individual provider's needs and compatibility of the practice setting before generalizability of findings is appropriate. Future research could explore caseload and case-mix during SRNA education with first practice settings after graduation.

Perceived Interventions

Interventions perceived by newly graduated CRNAs as being beneficial to their role transition included orientation, preceptor, mentor, and new employee meetings. Many of these

interventions have been implemented in other APN specialties and other professions to support newly graduated providers as they transition into their new roles and may be adapted to support CRNAs (Barnes, 2015; Sargent & Olmedo, 2013; & Spoelstra & Robbins, 2010). Participants who were exposed to many of these interventions perceived their CRNA role transition as less stressful and faster than how participants perceived their colleagues' role transition that did not have these supportive interventions.

Formal orientation and support were perceived as positively influencing CRNA role transition while not having an orientation was perceived by participants as having the opposite affects. While formal orientation periods have not been studied in regards to CRNA role transition, formal orientation has been studied in other APN specialties and found to be beneficial to role transition (Barnes, 2015; Brannagan & Oriol, 2014; Elisha & Rutledge, 2011; Sargent & Olmedo, 2013; Scholtz, King, & Kolb, 2014; Spoelstra & Robbins, 2010; Thabault, Mylott, & Patterson, 2015). The optimal orientation period for CRNAs is not known and was outside the focus of this study. Participants did however perceive that orientations should include familiarization to equipment and personnel and allow sufficient time to become comfortable with new equipment. Future research could examine formal orientation using a descriptive, cross-sectional survey similar to Barnes' (2015) study involving NPs and employers of CRNAs could benefit from knowledge gained from such research. Having optimal orientation periods could cut costs by avoiding too lengthy of an orientation period while still optimizing the time period needed for CRNAs.

Assigning a designated preceptor was perceived by participants of this study as a beneficial intervention to CRNA role transition. Participants perceived having a designated preceptor, who was mutually agreed upon by the employer and participant, allowed for a specific

individual contact when questions arise and allowed for continuity of information as all

information is coming from a single person. Preceptor influence on NP role transition has been

reported as positively influencing NP role transition during a 12 month new NP residency

program (Thabault, Mylott, & Patterson, 2015). This study's participants did not accurately

remember how long a preceptor was assigned and further research may be beneficial in

examining the time period for preceptorship would be optimal in promoting CRNA role

transition. Also, employers of CRNAs could find benefit in having literature to guide preceptors

of newly graduated CRNAs through the optimal time period and formal preceptor training to

positively influence CRNA role transition.

Mentors, both official and unofficial, were perceived by all participants as an intervention

positively influencing CRNA role transition. Some participants were assigned official mentors

during their initial period while other participants spoke of unofficial mentors and the perceived

positive influence unofficial mentors had on CRNA role transition. Many participants found

their own mentors, not necessarily in the participants' own practice settings but from the greater

community of CRNAs, unofficially and sometimes in an online environment. Mentoring has

been examined regarding other APN specialty role transitions and further research would be

beneficial in examining the effects of mentoring during CRNA role transition (Brannagan &

Oriol, 2014; Schreiber & MacDonald, 2010; Poronsky, 2012).

New employee meetings were perceived as a positive intervention by this study's

participants and have been utilized with recently graduated NPs to facilitate role transition and

interdisciplinary learning (Sargent & Olmedo, 2013). Examining research utilized in other APN

settings could be beneficial in adapting content for CRNA participation in similar

interprofessional meetings of new providers. Other professions could also benefit from the

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knowledge and experiences of CRNAs as well. Future research using Sargent & Olmedo's

(2013) study as a foundation could explore the benefits of interprofessional meetings on CRNA

role transition and possibly the benefits gained by other healthcare professionals on having

CRNAs attending interprofessional new employee meetings. Employers of CRNAs could find

research relating to new employee meetings as a cost effective way to assist all recently

graduated professionals with their role transitions through one interprofessional meeting

program.

Recommendations for Further Research

Numerous recommendations were discussed during the finding specific to the study's

research questions. The following recommendations for possible future research are based on

the researcher's interest and the findings of this study:

1. Examine and compare the effect of both face-to-face and online mentoring on CRNA role
   transition.

2. Explore online qualitative methods using video diary recordings of CRNAs going
   through their role transition to gain real time experiences of CRNAs.

3. Examine the effects on new employee interprofessional meetings on CRNA role
   transition. Possibly include other health care professionals who are attending the
   meetings.

4. Explore SRNA to CRNA role transition of CRNAs working part-time to examine any
   differences in the factors affecting part-time verses full-time practicing CRNAs.

5. Examine the effects of rural and independent practice settings on the role transition of
   CRNAs entering independent practice upon graduation.

Online Qualitative Methods

Researchers considering online or offline study designs need to consider many factors when designing their studies. The Internet offers qualitative researchers many opportunities which were once limited to traditional methods. Prior research has demonstrated that online qualitative data collection may be equivalent to traditional face-to-face interviews (Hinchcliffe & Gavin, 2009; Kenny, 2005; Reid & Reid, 2005). Computer-mediated communication (CMC) technology is a growing field for conducting qualitative research in nursing. This study utilized online, synchronous, semi-structured, individual interviews using Skype© communication software to collect qualitative data. Selection of the appropriate technology for CMC was time consuming and required collaboration with Internet technology experts to gain an understanding of the strengths and limitations of various CMC technologies.

Reproduction of this study would benefit from a number of design and methodological improvements. Many of the initial items requested of participants were gathered using synchronous CMC. This information could have been collected through asynchronous methods such as a survey form using E-mail. This would have saved time during video conferencing and digital storage space. Video conferencing could have been improved by creating a brochure to send to possible participants discussing technologies such as web cameras settings and optimal positioning. This also would have saved time during video conferencing, digital storage space, and allowed participants to attend with greater preparedness. Finally, while data collection continued until saturation was achieved, there is always the possibility of a different or greater sample size yielding new and additional data.

Researchers utilizing CMC technologies must utilize current technologies and determine their appropriateness when planning research. While synchronous communication methods may be acceptable for some studies, asynchronous communication methods may be appropriate in

other situations and some studies may utilize both. Despite the appeal of CMC technologies to provide an innovative methodological design to qualitative methods there are always limitations to any study. Since online qualitative methods are in their beginning stages guidance on methodological issues regarding recruitment and data collection are sparse (Whitehead, 2007). Nursing research involving online recruitment and synchronous interviews has been limited. Future research using online recruitment and CMC technologies for data collection for both qualitative and quantitative research will contribute to the growing body of knowledge as Internet technologies continue to expand.

Conclusion

This study set out to answer research questions designed to identify the factors promoting and impeding the role transition of CRNAs. The individual interviews provided invaluable data for answering these questions as well as identifying interventions which employers of CRNAs may utilize to assist newly graduated CRNAs as they transition into their new roles. The compassion and empathy shared by the participants through their stories and perceptions culminated into rich descriptions of the first few years of CRNA practice and identified many factors both promoting and impeding CRNA role transition. This study's findings offer insight into the role transition of CRNAs and offer employers and educators possible avenues to assist and promote CRNA role transition. Many areas of future research have been identified and further research is needed to confirm this study's findings. Also, further research utilizing quantitative methods to verify this study's findings in the larger population of recently graduated CRNAs will add to the body of literature.

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CIRRICULUM VITAE

Andy J Tracy

Education

       BSN, University of Minnesota-Twin Cities

            Major: Nursing

       MSN, Rush University, Chicago

            Major: Nurse Anesthesia

Dissertation Title: A Phenomenographical Study on the Perceived Factors Affecting CRNA Role Transition

Affiliations/Memberships:

       American Association of Nurse Anesthetists

       American Nurses Association

       Association of Veterans Affairs Nurse Anesthetists

       Illinois Association of Nurse Anesthetists

       Illinois Society of Advanced Practice Nursing

       International Anesthesia Research Society

       Midwest Nursing Research Society

       Sigma Theta Tau International Honor Society of Nursing

Teaching Experience:

       Assistant Professor, Rosalind Franklin University of Medicine and Science
       2013-present

Publications:

       Tracy, A. J. (2015). A pilot study on student nurse anesthetists views on CRNA role transition. *Anesthesia eJournal 3*(1).