The Development and Psychometric Testing of the Nurse Practitioner Role Transition Scale

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The Development and Psychometric Testing of the Nurse Practitioner Role Transition Scale

Sally Nelson Strange, PhD
University of Connecticut, 2015

Background and Purpose: Nurse practitioners (NPs) are formidable members of the health care system providing high quality, cost-effective care. Their transition into practice is often fraught with unexpected challenges. In support of this dissertation, a series of three studies was conducted to improve the process of NP role transition by increasing our knowledge and understanding of the defining constructs and the development and validation of the NP role transition scale (NPRTS).

Methods: The NPRTS is a self-report survey designed to measure NP’s perceptions of role transition experiences during the first year of practice. Two individual studies supported the development and evolution of the NPRTS through factor analyses and reliability assessments. In a third study, a qualitative analysis including a subset of neonatal NPs was conducted to further our understanding of role transition constructs and support the revisions of the NPRTS.

Results: Two samples comprised of 182 and 427 NPs representing a variety of specialties and practice settings participated in the scale development studies. Multiple factor analyses provided empirical support for the existence of the resulting three factor eighteen indicator model. Internal consistency for the final three factors was high. A qualitative analysis of 70 neonatal NPs revealed four themes that described the reattainment of expert status during role transition: 1) First impressions: Am I prepared? 2) The transition, 3) Making it as a real NNP, and 4) The helpers and hinderers.
Conclusions: The resulting NPRTS model is inferred as a valid and reliable measure of the constructs of NP role transition including: 1) confidence, comfort, and competence in the role; 2) collegial relationships; and 3) understanding of the role by clients. Implications for practice include the implementation of the NPRTS as a beginning model for NP role transition discussions and as a means to assess transition progress in the clinical setting. Continued research is warranted to progress the understanding of NP role transition and for the refinement and validation of the NPRTS.
The Development and Psychometric Testing of the Nurse Practitioner Role Transition Scale

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APPROVAL PAGE

Doctor of Philosophy Dissertation

The Development and Psychometric Testing of the Nurse Practitioner Role Transition Scale

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# Table of Contents

Chapter 1  Introduction  
References  
Figure – Transitions: A Middle-Range Theory  

Chapter 2  Article #1: Development and Psychometric Testing of the Nurse Practitioner Role Transition Scale  
  Abstract  
  Introduction  
  Background and Conceptual Framework  
  Procedures for the Development of the NPRTS  
  Methods  
  Results  
  Discussion  
  References  
  Tables  

Chapter 3  Article #2: Neonatal Nurse Practitioner Role Transition: The Process of Reattaining Expert Status  
  Abstract  
  Introduction  
  Literature Review  
  Methods  
  Results  
  Discussion  
  References  
  Tables  

Chapter 4  Article #3: Revision and Validation of the Nurse Practitioner Role Transition Scale  
  Abstract  
  Introduction  
  Conceptual Framework  
  Background  
  Study Aim  
  Methods  
  Results  
  Discussion  
  References  
  Tables and Figures  

Chapter 5  Discussion and Review  
References
Chapter 1

Introduction

Nurse practitioners (NPs) have been a part of the healthcare delivery system for nearly 50 years. The NP role evolved in the mid-1960’s in response to a nationwide shortage of healthcare services. The NP’s value was recognized early on demonstrating an increase in healthcare services along with patient and physician satisfaction with their care (Mendenhall, Repicky, & Neville, 1980; Sox, 1979). Additionally, NPs were shown to provide similar or superior patient care outcomes as compared to those provided by physicians (Geiss & Cavaliere, 2003; Horrocks, Anderson, & Salisbury, 2002; McMullen, Alexander, Bourgeois, & Goodman, 2001; Mundinger, 1994). These findings supported the growth of NPs utilization and provided the basis for education, practice, and licensing standards that are used today. NPs have continued to advance in number and scope to meet the expanding need for accessible, cost-effective care. Today there are over 192,000 NPs in the U.S. as reported by the American Association of Nurse Practitioners [AANP] (2014).

In modern practice, sophisticated clinical skills, critical thinking ability, political savvy, and a high level of decision-making are required of NPs (Hoffman, Happ, Scharfenbert, DiVirgilio-Thomas, & Tasota, 2004; Kelly & Mathews, 2001). The scope and standards of academic and clinical competence as well as professional performance are defined by The National Organization for Nurse Practitioner Faculties [NONPF] (2014) and in the AACN Scope and Standards for Acute Care Nurse Practitioner Practice as developed by the American Association of Critical Care Nurses [AACN] (2012). The National Council of State Boards of Nursing established a common definition of nursing advanced practice and set minimum standards for licensure.
Despite the advanced development and standardization of the NP role both academically and clinically, the actual transition into practice for newly graduated NPs is described by many as fraught with challenges resulting in negative experiences including a diminished level of confidence and subpar performance (Bosch, 2000; Brown & Draye, 2003; Cusson & Strange, 2008; Fleming & Carberry, 2011; Szanton, Mihaly, Alhusen, & Becker, 2010). This undesirable transition experience consequently leads to feelings of isolation, uncertainty, and insecurity (Brown & Olshansky, 1998; Kelly & Mathews, 2001; Nicolson, Burr, Powell, 2005). Further compounding the transition, NPs are at times thought of as a high functioning nurse or as a substitute for a resident or junior doctor contributing to role confusion (Nicolson, Burr, & Powell; Poronsky, 2013). An overall lack of support and structure in the new role was cited as a main contributor to a poor transition experience and an inability to meet the challenges of the new role (Forbes & Jessup, 2004; Hayes, 2001; Woods, 1998).

The transition of new NPs into practice has been commonly described in the literature as themes or a process in which the practitioner moves through a series of identified stages in order to overcome barriers and attain mastery of the role responsibilities (Brown & Olshansky, 1998; Carryer, Boddy, & Budge, 2011; Chang, 2006; Fleming & Carberry, 2011; Heitz, Steiner, Burman, 2004; Stanley, 2005). Other studies make recommendations regarding factors and strategies that influence a successful transition including a structured orientation and a residency training program (Bahouth & Esposito-Herr, 2009; Flinter, 2011; Kleinpell & Hravnak, 2005; Szanton, Mihaley, Alhusen, & Becker, 2010; Yeager, 2010). Outcomes from the orientation programs and one residency training model begin to indicate evidence of healthy transitions (Flinter, Yeager). However, the specific factors and influencing indicators for successful transition remain essentially undefined and untested as a quantitative measure for NP role transition.
At this time, there is not an accepted consensus on the conclusive constructs that comprise NP role transition and the factors that influence it. Furthermore, many new NPs are not aware of or adequately prepared to manage the impending transition challenges and have no means to evaluate their progress or identify specific constraints to success (Roberts, Tablowski & Bova, 1997). This lack of preparation and role transition structure can ultimately, impact the care of patients. Currently, there exists a gap in our knowledge of and ability to define and measure the elements of NP role transition.

**Conceptual Framework**

Conceptually, transition is depicted by Bridges (1980) as a sequence of phases, in which one encounters difficulties and a period of adjustment; that is, . . . “letting go of the person you used to be and then finding the new person you have become in the new situation” (p. 75). Adding to the concept from a nursing perspective, Transitions, a middle-range theory, was developed (Meleis, Sawyer, Im, Messias, & Shumacher, 2000). See Figure 1. In this theory, transition is referred to as a process and outcome of complex person-environment interactions involving passage from one state, condition, or place to another (Chick and Meleis, 1986). In this process, a person is required to incorporate new knowledge and alter behavior in order to change the definition of self (Meleis, 1997). This multi-dimensional process incorporates both the nature (i.e., types, patterns, and properties) of the transition as well as the involved facilitators and inhibitors (Meleis, et. al, 2000), which combine to affect one’s pattern of response. Accordingly, patterns of response include process indicators (i.e., feeling connected, interacting, location and being situated, and developing confidence and coping) and outcome indicators (i.e., mastery and fluid integrative identities). A healthy transition is characterized by process indicators that can be identified and assessed in an effort to intervene and move the transition to a healthy outcome.
versus one of vulnerability and risk. The inability to resolve or overcome process barriers may hinder or halt the transition process.

In nursing, the conventional premise is that one moves into a new role as a novice and overtime completes several stages of development to attain expert status (Benner, 1984). This model is especially related to the graduate RN. Despite these defined processes, nurses can become stuck, per se, if they are unable to manage or overcome the elements within a particular stage, which can have devastating effects hampering performance and job satisfaction. In the Benner model, it is possible to not attain the final level of expertise, and the rationale for failure to advance is not always clear.

Contrary to this premise, studies reveal that in NP role transition, the actual experience is reversed (Cusson & Strange, 2008; Forbes & Jessup, 2004) referring to the phenomenon as moving “from expert to novice”. This reflects the notion of attained expertise as a RN before completion of education and training as a NP. It is often assumed that this expertise will automatically carry over into the NP role such that the new graduate enters the workforce with the same level of expertise. However, it was found in these studies that expertise in one role is not transferable to other roles, even in the same discipline. The rationale for this mismatch is not totally clear. One could argue that the NP role transition is truly just experiencing the traditional novice to expert process over again. Based on the results of the above studies, the previous experience of attaining expert nursing status contributes to the nature and conditions of the transition experience.

Key to the transition theory conceptual framework is that the transition process varies based on previous experiences and individual responses; however, common facilitators and inhibitors related to personal beliefs, expectations, knowledge and skills, environment, planning, and emotional and physical well-being are recognized as having a negative or positive effect on
the outcome. A structured model that describes specific elements of the role transition into practice of newly graduated NPs fits well into this theory.

**Significance and Rationale**

In today’s healthcare, NPs are established as highly skilled front line care providers. They contribute to the mounting gap in healthcare services and in cost containment initiatives. As a unique group of healthcare providers, NPs require specialized training and mentoring to fulfill their expected roles. It is essential that new NPs entering the work force be quickly and easily acclimated. Failure to do so potentially jeopardizes both the NP and the patients as well. There is then a need to establish transition conditions (i.e., facilitators and inhibitors) and process indicators that promote and measure a successful transition for NPs entering their first year of practice. Consistency in academic preparation addressing the issues of role transition is additionally needed to foster the success of new NPs in practice. The information attained from these studies will provide an assessment survey, which will enable the identification of NP role transition factors providing early recognition of successes and barriers. This early detection will better support the new NP and their mentors to develop strategies in order to acknowledge achievements, overcome barriers, and to avoid undue stress and anxiety in the role transition process. A valid and reliable measure of NP role transition can be used to guide the development of or enhance current academic preparation as well as orientation program structures and processes. To address transition issues and to narrow the knowledge gap, a series of studies was conducted to better understand and to quantify the constructs and indicators of NP role transition.

**Study Aim**

The aim of this dissertation project was to develop and test an instrument that defines and measures the constructs and indicators of NP role transition during the first year of practice. It was hypothesized that the experience of NP role transition consists of specific constructs and
indicators as based on content validity and expert opinion. The following studies were conducted as means to develop and test the hypothesized model.

Study 1: Develop a draft of the nurse practitioner role transitions scale (NPRTS) and assess its psychometric properties.

Study 2: Describe the role transition experience of a group of neonatal nurse practitioners as means to enhance the understanding of the factors affecting progress and success.

Study 3: Refine and revise the resulting NPRTS from Study 1 and assess its psychometric properties.

Review of Studies

A brief review of the three studies is presented here as means to provide an introduction and understanding of the development and testing of the NPRTS. Specific details of each study are outlined following in chapters 2, 3, and 4. Chapter 5 provides an overview and discussion of the findings as they relate to and inform the current knowledge of NP role transition as well as implications to practice and future research.

The first study, Development and Psychometric Properties of the Nurse Practitioner Role Transition Scale, developed an initial draft of the NPRTS and assessed its psychometric properties. Based on content validity and expert judgment, the original proposed structure consisted of five hypothesized dimensions represented by 31 indicators. These included: (a) perception of the adequacy of the nurse practitioner educational program [8 Items]; (b) perception of expertise as a novice practitioner [4 Items]; (c) relationships with colleagues and co-workers [9 Items]; (d) availability of a mentor for guidance and feedback [2 Items]; and (e) the socialization of the nurse practitioner into a nursing or medical arena [8 Items]. The final sample included 182 practicing NPs from a variety of specialties and practice settings from around the U. S. Exploratory factor analysis (EFA) was conducted to examine the structure for
validity and reliability resulting in a three factor model comprised of 16 indicators. The final factors were similar to those originally hypothesized and included: Factor 1 - Developing Comfort and Building Competence in the Role, Factor 2 – Understanding of the Role by Others, and Factor 3 – Collegial Support.

In an effort to refine the NPRTS and conduct additional testing with a new sample an updated review of the literature and content analysis was conducted including incorporation of findings from the second study in this series, Neonatal Nurse Practitioner Role Transition: The Process of Reattaining Expert Status (Cusson & Strange, 2008). Responses to narrative questions related to their role transition experience from 70 neonatal NPs were included. These questions were included in the survey completed by the respondents in the first study. The neonatal NPs were selected for this study due to the large number of respondents from a single specialty and to add to the neonatal NP role transition literature previously conducted by these authors. The narrative data were found to be rich in describing role transition experiences. Using descriptive qualitative methodology, four themes describing NP role transition during the first year of practice emerged as Theme 1 – First impressions-Am I prepared?, Theme 2 – The transition, Theme 3 – Making it as a real NP, and Theme 4 – The helpers and hinderers. The underlying main theme central to NP role transition in this study reflects an emerging concept of “expert to novice” in which new NPs not only were expected by others to perform at their previous RN level of expertise, but they themselves anticipated the same. Due to a lack of structure and clear definition of role transition parameters, new NPs demonstrated great distress in the process.

In the third study, Revision and Validation of the NPRTS, the instrument was refined by modifying item strings as well as adding an additional factor and indicators to the resulting model from the previous EFA in the first study. Representing NP role transition, the revised model was comprised of four hypothesized dimensions and 31 indicators including (1)
Developing Comfort and Building Competence in the Role, (2) – Understanding of the Role by Others, (3) Collegial Support, and (4) Communications and Relations. The NPRTS was administered to a new sample (n = 427) of NPs from a variety of specialties and practice settings with the goal to confirm the model fit using confirmatory factor analysis (CFA). However, the CFA resulted in a poor model fit. Despite model respecifications, only a marginal fit was attained as determined by critical fit indices ($\chi^2 = 831.84$, $df = 263$, $p < .01$, $CFI = 0.91$, $RMSEA = .07$, and $SRMR = .06$). Additional examination of the data underwent EFA, which revealed a valid and reliable three factor model consisting of 18 indicators. The factors were also found to be similar to those from the hypothesized constructs from the initial draft of the NPRTS and the resulting model from the first EFA study. These included (1) Role Confidence, Comfort and Competence; (2) Collegial Relationships; and (3) Understanding of the Role by Clients. Because the latest version of the NPRTS developed during this study's analyses results from EFA, an additional round of sampling and CFA will be necessary before finalizing the instrument’s content.
References


**Figure 1.** Transitions: A Middle-Range Theory applied to NP role transition defines a process including the nature of the transition (i.e., types, patterns, and properties), addresses facilitator and inhibitor conditions, and includes pattern of response indicators for processes and outcomes. Nurse mentors and professional colleagues influence the transition process by using promotive, preventive, and interventive therapeutics. Adapted from “Experiencing Transitions: An Emerging Middle-Range Theory,” by A. Meleis, L. Sawyer, E. Im, K. Schumacher, & D. Messias, 2000, *Advances in Nursing Science, 23*, p. 17. (Reproduced with permission)
Development and Psychometric Properties of the Nurse Practitioner Role Transition Scale

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Abstract

Background and Purpose: Nurse practitioners (NP) are crucial to health care delivery, positively affecting patient outcomes. Newly graduated NPs often experience a poor transition during their first year of practice resulting in stress and suboptimal performance. The elements of NP role transition are not well understood. The purpose of this study was to develop a new instrument, the NP Role Transition Scale (NPRTS), and to assess its psychometric properties.

Methods: The NPRTS is a self-report instrument that was initially configured to measure five hypothesized constructs of NP role transition using 31 items. Content validity was based on the literature and the judgment of content experts. Subsequently, a national sample of NPs completed the initial instrument. Exploratory component analysis and reliability assessments were conducted to investigate construct validity and to refine the scale.

Results: A sample of 182 NPs who had experienced role transition and were actively practicing participated in the study. Exploratory component analysis provided empirical support for the existence of a 16-item, three component scale with high internal consistency for the data from each component. Analysis of the response categories supported meaningful score interpretations.

Conclusions: Validity and reliability analyses supported the NPRTS as a three dimension instrument designed to measure NP role transition. NP role transition is defined as developing comfort and building confidence, understanding of the role by others, and collegial support. A positive role transition for NPs is important. The NPRTS provides a means to evaluate that experience during the first year of practice.

Keywords: nurse practitioner, instrument development, role transition, exploratory component analysis
Development and Psychometric Properties of the Nurse Practitioner Role Transition Scale

Upon graduation, a new nurse practitioner (NP) transitions into a role of increased responsibility and complexity. The role of the NP requires sophisticated clinical skills, critical thinking ability, political savvy, and a high level of decision-making (Hoffman, Happ, Scharfenbert, DiVirgilio-Thomas, & Tasota, 2004; Kelly & Mathews, 2001). The scope and standards of clinical competence and professional performance are defined in the AACN Scope and Standards for Acute Care Nurse Practitioner Practice as developed by the American Association of Critical Care Nurses [AACN] (2012).

Despite these standards, current research reveals that graduate NPs experience stress during the transition to the NP role, accompanied by feelings of isolation and confusion along with thoughts of uncertainty and insecurity (Bahouth & Esposito-Herr, 2009; Brown & Olshansky, 1997; Cusson & Strange, 2008; Kelly & Mathews, 2001; Nicolson, Burr, & Powell, 2005; Poronsky, 2013). In addition, many NPs report multiple challenges when transitioning into their first advanced role, which impacts their performance and level of confidence (Bosch, 2000; Brown & Draye, 2003; Cusson & Strange, 2008; Kelly & Mathews; Szanton, Mihaly, & Alhusen, & Becker, 2010) and contributes to an unsatisfactory transition experience (Roberts, Tabloski, & Bova, 1997). It is also suggested that in any specialty, the NP may be seen as a substitute for a junior doctor, which creates role confusion (Nicolson et al., 2005) that further compounds the role transition process. A lack of support and structure contributes to poor transitions for many new NPs, resulting in adjustment difficulties, knowledge insecurity, and inability to meet the challenges of the new role (Forbes & Jessup, 2004; Hayes, 2001; Sullivan-Benz, et al., 2010; Woods, 1998).

The advanced practice registered nurse is a crucial member of the health care team. In practice, NPs have been shown to positively impact patient care outcomes as well as increase
staff and patient satisfaction (Geiss & Cavaliere, 2003; Horrocks, Anderson, & Salisbury, 2002; McMullen, Alexander, Bourgeois, & Goodman, 2001). With the current challenges in health care and the shortage of providers, it is vital that each graduate NP transitions from student to competent practitioner efficiently and effectively. Academic and health care institutions are ultimately responsible for the education and competent performance of NPs, but are often ineffective in mentoring staff into the role successfully. Without structure and support, new NPs are often forced to rely on their own devices, frequently inhibiting their transition experience. Developing a way to define and measure role transition dimensions will advance the understanding of this concept in newly graduated NPs.

**Background and Conceptual Framework**

**Background**

The underlying latent constructs of NP role transition and influencing components have not been conclusively established. The majority of available studies include qualitative descriptions of advanced practice nurses’ experiences transitioning to a new role. The evidence reveals that most NPs undergo a series of stages or a process while mastering role transition as a novice practitioner. Brown and Draye (2003) described a central organizing concept of role transition as “advancing autonomy to make a difference in patient care,” which was manifested in six stages. A linear progression comprising four themes from educational preparation to beginning feelings in the new role to final development of confidence is described by Cusson and Strange (2008). In Brown and Olshansky’s (1988) work, their theoretical model, limbo to legitimacy, is described by four primary role transition processes including laying the foundation, launching, meeting the challenge, and broadening the perspective. The metaphor, from the side to the head of the bed, is reported in Cusson and Viggiano (2002), which describes the transition experience of novice neonatal nurse practitioners (NNP) in leading the
management for infants while positioned at the head of the bed versus the less authoritative position at the side of the bed.

The aforementioned articles express role transition from the novice to expert perspective, which is the traditionally understood and accepted model in nursing. However, a new concept emerges in Forbes and Jessup’s (2004) case report, in which a reversed experience, “expert to novice,” is described in context to advanced practice registered nurse (APRN) role transition. Similarly, Cusson and Strange (2008) identify an overarching theme in neonatal nurse practitioner role transition as the reattainment of expert level practice, which depicts the movement from expert RN to novice neonatal nurse practitioner (NNP) and back to eventual expert level NNP. In this research, new nurse practitioners entered their role as previously established expert staff RNs only to quickly discover they were thrust into the novice world of a new NP. Their familiar competence and confidence were no longer available to offer support, thus forcing an inevitable transition to the role. These findings distinguish the NP role transition from traditional novice to expert experiences observed in new staff nurses, but fail to thoroughly describe the processes or to identify the fundamental properties specific to NP role transition.

The reviewed literature revealed no studies that quantitatively defined or measured the underlying latent constructs of the NP role transition experience. Thus, there is a need to develop measurements that enable examination and evaluation of the construct variables comprising NP role transition. A quantitative measure of NP role transition can be used as an assessment and evaluation instrument to assist NPs, their mentors and their colleagues to optimize role transition by recognizing and managing supports and alleviating barriers. The purpose of this study was to develop a new instrument, the NP Role Transition Scale (NPRTS), and to assess its psychometric properties.
**Conceptual Framework**

The transition concept is central to the discipline of nursing manifested at the individual, familial, and organizational levels. Advances in clinical practice roles, comprising a change in setting, functions, and/or scope of practice often necessitate a personal transformation. Meleis’ transition theory serves as the conceptual framework for the development of the NPRTS (Meleis, Sawyer, Im, Schumacher, & Messias, 2000). Early writings described transition as a process involving three phases: an ending, a neutral phase, and a new beginning phase (Bridges, 1980, 1986). Expanding the concept, Chick and Meleis (1986) define transition as a passage or movement from one state, condition, or place to another referring to both the process and the outcome of complex person-environment interactions. Applied to nursing, Meleis (1997) characterizes transition as “a change in health status, in role relationships, expectations or abilities. . . requiring the person to incorporate new knowledge, to alter behavior, and therefore to change the definition of self in social context” (p. 108). Although the transition process varies by individual, universal commonalities have been identified across the four different types of transition (developmental, situational, health/illness events, and organizational) according to Schumacher and Meleis (1994). In addition, important influencing components have been recognized in all transitions. Referred to as transition conditions or facilitators and inhibitors, these components include personal beliefs and meanings, expectations, level of knowledge and skill, the environment, level of planning, and emotional and physical well-being. These commonalities and conditions work together to influence levels of response to both processes and outcomes. Promotive, preventive, and interventive nursing therapeutics have the potential to impact all segments of the model thus guiding the transition process toward positive outcomes.

A transition to the advanced practice NP role fits well within this model. New nurse practitioners move from one state (e.g., staff nurse) to another (NP) after completion of their
education program. Such a transition process or career development is further characterized as a lifelong series of choices that individuals make to express their changing needs (McAuliffe, 1993). Indicators that both facilitate and/or inhibit the transition process contribute to the unpredictable and often bumpy course experienced by many NPs. Why one individual’s transition progresses well and another’s does not, given similar situations, is still a mystery. Little theory-based research is available to help identify and measure the components that contribute to role transition in newly graduated nurse practitioners. More evidence is needed to deepen the profession’s understanding of the role transition constructs, processes, and the predictability of influencing components. Identification and structure of the variables comprising NP role transition will enable nurse educators and mentors to knowledgeably guide new NPs through their first year of practice.

**Procedures for the Development of the Nurse Practitioner Role Transition Scale**

The NPRTS was developed to measure the construct of self-concept of NP role transition during the first year of practice post-graduation. Procedures in instrument development as described by McCoach, Gable, and Madura (2013) and DeVellis (2003) were used to guide this research. The initial phase consisted of a thorough examination of the literature conducted by a panel of four experienced NPs and one registered nurse, of which one was a doctoral-level faculty member and the others were doctoral students. Members reviewed the literature independently extracting representative characteristics and attributes of NP role transition. Collaboratively, the group developed an original item pool based on their literature findings and personal experiences. The item pool was reviewed by a convenience group of practicing NPs for readability, understanding, and an accurate depiction of first year NP role transition experience. Additional edits and formatting of the item strings along with instrument design concluded the final phase of development. Principles of literacy and reading ease were applied to the final
survey. A pilot test for expert review was conducted, which included ten practicing NPs who had experienced first year role transition.

Establishing content validity, final edits were made based on practice expertise, literature findings, and consensus of the panel resulting in the five hypothesized dimensions of NP role transition being depicted in 31 items (see Table 1). The proposed dimensions of NP role transition included: (a) perception of the adequacy of the nurse practitioner educational program [Items 1, 2, 11, 16, 20, 22, 28, 31]; (b) perception of expertise as a novice practitioner [Items 3, 10, 12, 21]; (c) relationships with colleagues and co-workers [Items 4-9, 19, 26, 27]; (d) availability of a mentor for guidance and feedback [Items 13, 14]; and (e) the socialization of the nurse practitioner into a nursing or medical arena [Items 15, 17, 18, 23-25, 29, 30].

The final NPRTS including 31 self-report statements related to the respondents’ role transition experience used a 5-point Likert-type scale with summative scoring. The instructions directed participants to read each item string and to indicate the number that corresponded to how strongly they agreed or disagreed with each statement in regards to their role transition experience when first becoming a nurse practitioner. Response options included: 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neither disagree nor agree*; 4 = *Agree*, and 5 = *Strongly Agree*. A high score was expected to represent a better perception of role transition ease; a low score should indicate less transition ease. The dimension labels were not included in the survey and items were listed in random order. Both positive and negative response formats were used in the item strings. Demographic and open-ended narrative questions were included as means to describe the characteristics of the participant pool and add insight into role transition responses and patterns.
Methods

Study Design

A survey study design was used to examine the NPRTS to determine the possible existence of latent constructs underlying the concept of NP role transition during the first year of practice post-graduation. Descriptive statistics, exploratory component analysis, reliability statistics, and item response analysis were used to analyze the data.

Sample

The target population was defined as NPs who were actively practicing in their specialty for at least one year and were willing to complete the survey. Additional inclusion criteria comprised having experienced a role transition from NP student to a NP clinical practice position and being able to read and write English. NPs of all ethnic backgrounds, practice specialties, ages, and genders were eligible to participate.

For this study, a total of 155 to 310 participants (i.e., 5-10 per item) was desired. Although there is no absolute formula for an appropriate sample size, sources report a general range of consensus. Tinsley and Tinsley (1987) suggest a ratio of 5 to 10 subjects per item up to 300 subjects.

Procedure

Following IRB approval from the institution’s Human Subject’s Review Board, a convenience sample was recruited. The NPRTS was distributed via U.S. postal service in paper form to NPs obtained from the NP Central mailing list. NP Central is a non-profit organization dedicated to the practice development, advancement and educational support of NPs. Additionally, the survey was posted on the NP Central and other professional organization websites using a commercial survey vendor, Formsite. Personal NP contacts known to the research group were also sent a survey using postal mail or personal email. A total of 370 paper
surveys were mailed. All survey formats provided information regarding the survey including a brief description of the study, inclusion criteria, directions for completion, and contact information. An addressed, stamped return envelope was included with the mailed surveys to increase ease of participation. Voluntary completion of the survey indicated consent. A single mailing strategy was used to avoid repeat participation. Measures were taken to secure data and eliminate identification possibilities. No payment was given and there was no identified risk for participating in the survey. Data obtained were collated, entered into a database, and analyzed using the computer statistical analysis program, SPSS (Version 22.0).

**Approaches to Reliability and Validity Assessment**

Construct validity analysis techniques were employed as important criteria to evaluate data generated from the NPRTS as it corresponds to the theoretical concepts (constructs) concerning NP role transition. Exploratory component analysis (EFA) was conducted to empirically examine interrelationships among the items in order to identify or verify clusters of items that share sufficient variation to justify their existence as a construct of NP role transition. The goal was to explore and identify the basic structure and underlying constructs of NP role transition reflected by the NPRTS instrument.

The appropriate use component analysis of the inter-correlation matrix of instrument items was evaluated through the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett’s test of sphericity. The acceptance level for the KMO was set at 0.80 (Tabachnick & Fidell, 2007).

Exploratory factor analysis commenced with a principal component analysis (PCA). This method was chosen to explain all the variance in the set of items and to reduce the number of variables into a smaller set for further analysis (McCoach, Gable and Madura, 2013). Listwise deletion was employed as a means to manage missing data. Reverse scoring of the respondent
data for negative item strings was required. The number of components extracted was determined using Kaiser’s criterion (Kaiser, 1960). An examination of the Cattell (1966) scree test was performed to provide additional insight into component selection. Both the varimax and oblique rotations were conducted. Examining results of oblique rotation provides information regarding the magnitude of the correlations between components for a theoretically based scale under development. Items with loadings of .40 or greater were identified and listed in clusters. Items were examined for multiple loadings and retained for factor examination when the difference between items was greater than .10. In dual loadings having less than a .10 difference, a decision was made regarding final component placement based on internal consistency-reliability findings and content meaningfulness. The oblique rotation provided additional evidence of component relationships by examining the component intercorrelations. For intercorrelations greater than .40 researchers can consider collapsing the components into one. After examining the data from both rotations, the components were interpreted and named based on the size of the loadings and their content meaning.

To assess the homogeneity of the items within the defined components of the NPRTS, internal consistency-reliability analyses were conducted using Cronbach’s coefficient alpha. The coefficient alpha statistic for each component of the NPRTS reflects the degree to which the individual items measure a latent construct. DeVellis (2003) suggests an acceptable level for the coefficient alpha to be greater than .70.

Respondent scores representing their perception of the role transition experience as a newly graduated NP were determined by summing responses to items loading on each component. Using a 5-point scale, the mean value provides a summary transition score with a high score reflecting more ease in role transition ease and a low score indicative of less ease in role transition.
Results

Sample Demographics

The final sample consisted of 182 NP respondents, which included 129 returned from mailed surveys (a 35% return rate) and an additional 53 from online postings. The characteristics of the respondents are shown in Table 2. The average age of participants was 48.4 years with a range of 29-68 years. All respondents had worked at least one year in an advanced practice role with a mean of 10 years in practice. The majority were also experienced RNs who had worked an average of 11 years before attaining NP status. The most common areas of practice included neonatology (41%) and family practice (24%). The respondents’ current practice setting was divided nearly equally between acute care (hospital 25% and neonatal intensive care 24%) and outpatient settings (private office 29% and hospital based clinic 15%). The sample represented 30 of the United States, Canada, and the U.S. Virgin Islands.

Exploratory Component Analysis

Two statistical procedures were applied to examine the inter-correlations matrix. The KMO measure of sampling adequacy was 0.8, which supported the use of component analysis, suggesting that the data may be grouped into a smaller set of underlying components. The results of Bartlett’s test of sphericity revealed $\chi^2 = 2158.81$, $df = 465$, $p < .001$, reflecting a strong relationship among the variables. These results indicate that the inter-correlation matrix was appropriate for component analysis. Additionally, the sample size was sufficient to support such an analysis because the case to variable ratio was 5.9 to 1 (Tabachnick & Fidell, 2007).

In examining the EFA output, the variables were found to have extraction loadings between .53 and .82, indicating moderate-to-high individual item correlations with latent dimensions and considerable potential for most items to load significantly on one or more component. Using the eigenvalue-greater-than-1 (Kaiser) criterion as part of the component
analysis, nine components with eigenvalues greater than 1.0 were extracted. The solution of nine components accounted for 69.4% of the total variance explained, with the first unrotated component accounting for 24.6% and the other eight ranging from 9.9% to 3.4% of the variance of the 31 survey variables before rotation. Visual examination of the scree plot indicated a leveling off after the fourth component, suggesting an optimal component solution between three and four.

To further the interpretation of the concepts and their defining components, the varimax and oblique rotations were compared. Both rotations extracted nine components with variable loadings supporting three similar strong components. Component 1 shared seven common items in each rotation, with Item 10 being the consistent top loading variable. With the minimum loading value set at .40, one item (11) did not load on any component in the varimax rotation. Four items had dual loadings in the varimax rotations and one in the oblimin rotation. Following decisions regarding component placement for items with dual loadings, a total of four components were eliminated in both rotations due to a low number of item loadings (< 3 items/component), low item loading values (< .40), or lack of support for a meaningful construct. In the component correlation matrix from the oblimin rotation, none of the components had intercorrelations greater than .40, which supported the decision to not combine individual components into a larger one.

At this point in the component analysis, the remaining five components underwent qualitative evaluation relative to the expert judgment and literature review that had formed the basis for establishing content validity. Based on this assessment, the varimax solution was found to be more meaningful in identifying constructs of NP role transition.

Assessment of the resulting component correlation matrix revealed a wide range of variable inter-correlations with the majority being values around .20 to .30 indicating a weak to
moderate relationship with the variables to the purported construct and supporting the varimax rotation solution. Moderate to high correlations (.40 – .70) were found among the variables contributing to the first component.

In the varimax solution, five components were preliminarily identified to represent the underlying latent constructs of NP role transition. These components contained 22 of the original 31 items and were labeled using Roman numerals (I – V). Table 3 presents the loadings for the items assigned to each of these components.

**Reliability and Item Analysis**

To assess the homogeneity of the items within the newly defined components of the NPRTS, internal consistency-reliability analyses were conducted. In these analyses, the sample size varied due to the lack of respondent data for some items. Components IV and V had reliability levels less than .66. Item correlations and loadings within these components were low and some items loaded on both components. Accordingly, both components were dropped from the NPRTS scale.

Internal consistency-reliability levels were high for the remaining three components ranging from .80 to .88, seen in Table 4. Furthermore, item correlations were high within these components and there was no evidence that dropping any individual item would substantially improve the coefficient alpha for any component. Correlations between simple summary scores based on the items within these components were moderate (I vs. II: \( r = .31 \), I vs. III: \( r = .36 \), and II vs. III, \( r = .50 \)). These three factors were judged to constitute the dimensions of the NPRTS scale noting a moderate correlation between the constructs of role understanding and collegial support.
Interpretation, Naming, and Scoring of Final Components

Component I was named Developing Comfort and Building Competence in the Role as the eight items defining this component described the attainment of comfort in managing the patient case load, ability to transition into the NP role, and the development of confidence. The means scores for these items (listed in Table 5) ranged from 2.77 (Item 21 – I felt it was easy to transition from nurse to NP) to 3.65 (Item 22 – I felt I had the skills to deal with role transition). The difference in means for Items 21 and 22 demonstrates acknowledgment from the participants that, while it was not necessarily easy to transition into the NP role, they believed that they possessed the skills to actually deal with the transition. These perceptions and the other items support the concepts of comfort, competence, and a level of confidence as descriptors of role transition.

Component II was named Understanding of the Role by Others because the five included items described the understanding of the role by others as perceived by the NP. Multiple groups including patients, colleagues, supervisors, and co-workers comprised this component. As others understand, and hopefully accept, the new NP, the ease of transition is expected to increase. The mean scores for these items ranged between a low of 2.23 (Item 8 – My NP role was very well understood by the public) and a high of 3.26 (Item 5 – My NP role was very well understood by my physician colleagues). In addition, Item 8 was noted to be the lowest scoring of the final 16 items with only 9 respondents reporting a score of 4.0 or 5.0 on the survey. The NPs’ perception of a lack of understanding of their role by the public is demonstrated here as contributing to a less than desirable transition. To provide the best care, it is easier to work with groups who have an understanding of the NP role, which then fosters trust and collaboration. A strong level of understanding allows more time for a new NP to focus on the duties at hand by decreasing distractions and time needed to explain and justify the role. In this sample, a stronger perception...
of understanding of the role by physician colleagues was observed, which supports an enhanced role transition. Physicians are often assigned as medical collaborators or supervisors for new NPs, so an understanding of the role fosters overall learning and assimilation.

Component III was named Collegial Support as the retained three items represented feelings of isolation and a sense of support and professionalism as contributors to NP role transition. The mean scores ranged from 3.18 (Item 18 – I felt that I was isolated) to 3.61 (Item 4 – I was treated as a professional by my colleagues). This component depicts the elements of perceived isolation and support as well as professional behavior from colleagues as affecting role transition.

In the resulting 16-item model, the total mean transition score was 3.08 $\pm$ 0.67, indicating a moderate transition experience among the total group of responding NPs. The examination of the subscale mean values for Component I (The Development of Comfort and Competence) was 3.09 $\pm$ 0.82, Component II (Understanding of the Role by Others) was the lowest at 2.82 $\pm$ 0.88, and Component III (Collegial Support) was highest at 3.45 $\pm$ 0.98. In this group, a higher degree of collegial support contributing to a positive role transition was identified. And, the understanding of the role by others offered the lowest contribution to perceived role transition ease. The development of comfort and competence was similar to the overall total NP role transition score. These scores can be used to assess the status of a new NPs role transition experience on a 1.0 to 5.0 scale and assist in identifying inhibiting concepts as measured by the NPRTS.

**Discussion**

The ongoing demand for high performing advanced practice providers, such as NPs, in healthcare continues as a means to provide safe, quality patient care. However, this demand does not foster the best circumstances for transitioning a newly graduated NP into the work place
successfully as articulated in the literature. An awareness of the impending transition process and of conditions (Poronsky, 2013; Roberts, Tabloski & Bova, 1997) that may facilitate or inhibit development is essential to the successful outcome of NPs’ role transition along with the integration of strategies designed to foster continued growth and development (Kleinpell & Hravnak, 2005; Sullivan-Bentz et al., 2010). The findings of this psychometric analysis contribute to advances in the measurement of NP role transition during the first year of practice.

The final format of the NPRTS, a three component model, measures NP role transition related to the development of comfort, confidence, and competence in the new role, quantifies the understanding of the role by others as perceived by the NP, and assesses the support from colleagues, physicians, and supervisors. These components are consistent with Meleis’s Transition Theory (Meleis et al., 2000) by giving specificity to NP role transition conditions related to level of knowledge and skill, expectations, personal beliefs and meanings, level of planning, and the environment. A resulting score (1.0 to 5.0) depicts the level of transition a new NP is experiencing for each dimension. In using the model, NPs with high scores would be assumed to have better mastered the elements of role transition by attaining confidence and competence with good support and understanding from colleagues and others. Low scores would indicate a less desirable transition to the NP role manifested in a lack of confidence and competence as well as limited collegial support and understanding.

The data obtained from this study supports the recommendations of Szanton et al. (2010) that faculty and employers should not only be aware of challenges in the transition process, but be able to provide guidance and develop strategies that address the issues as well. The constructs of the NPRTS (i.e., competence, collegial support, and role understanding) also reinforce the proposed strategies for successful NP transition described by Kleinpell and Hravnak (2005). Utilization of a NP role transition survey is a supporting vehicle, which fosters early recognition
and ongoing assessments. Collaborating physicians, nurse mentors, and other professional colleagues have great responsibility and opportunity to influence the transition process as they provide direct supervision of the new NP. Stalemate in the transition process can lead to a protracted hindrance in attaining competence, resistance to the role among co-workers, and inability to achieve expectations of lifelong learning.

**Limitations**

This study was conducted as a first step in identifying the structure of NP role transition. Its exploratory nature implies that validation of the ability of the NPRTS to predict role transition success requires further investigation. In the course of the exploratory component analysis, 15 original items were eliminated from the resulting component model due to inadequate component loading and lack of meaning. Even though the final components aligned well with the original constructs, the decision to drop items may have been premature. The reliability of statistical analyses depends heavily on characteristics of the study sample. The sample met the size recommendation, but was on the lower end of the range. While a heterogeneous sample was sought, some specialty areas (e.g., neonatology/perinatal), were over-represented. This may be related to the recruitment of NPs via the National Association of Pediatric Nurse Practitioners using a purchased membership list. Furthermore, it may be more dependable to evaluate NP’s who have more recently transitioned to the role. The numerous years of experience in the NP role by many respondents, may have skewed the memories of their experiences as a new practitioner.

**Conclusion**

This theory-based instrument development process and exploratory component analysis produced a potentially valid and reliable measure of NP role transition constructs occurring during the first year of practice. The resulting three-component, 16-item scale supports
identification of the properties comprising NP role transition as related to three major constructs including comfort and confidence in the role, others’ understanding of the role, and collegial support. The findings further enhance the specific assessment and measurement of variables that both facilitate and hinder the role transition experience in novice NPs. Accurate identification of response patterns to role transition in new NPs fosters the therapeutic use of early interventions and ultimately, the avoidance of poor outcomes including a lack of confidence, stress, suboptimal performance, and role confusion.

Recommendations for the use of the developed NPRTS are for implementation with newly hired NPs as a means to measure current transition status and identify both real and potential inhibitors as related to the survey’s constructs. Early identification of transition barriers assists NPs and mentors to seek assistance and voice concerns with the goal of developing meaningful interventions that will move the NP toward an easy transition and satisfying practice. Further testing is needed to definitively establish the instrument’s validity in reflecting critical components of role transition from RN to NP.


Table 1

*Nurse Practitioner Role Transition Scale – Item String with Corresponding Item Number*

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>My workday was just how I imagined it would be when I was a student</td>
</tr>
<tr>
<td>2</td>
<td>My education prepared me to effectively manage my patients</td>
</tr>
<tr>
<td>3</td>
<td>I was comfortable in my role</td>
</tr>
<tr>
<td>4</td>
<td>I was treated as a professional by my colleagues</td>
</tr>
<tr>
<td>5</td>
<td>My nurse practitioner role was very well understood by my physician colleagues</td>
</tr>
<tr>
<td>6</td>
<td>My nurse practitioner role was very well understood by my nurse colleagues</td>
</tr>
<tr>
<td>7</td>
<td>My nurse practitioner role was very well understood by my patients/families</td>
</tr>
<tr>
<td>8</td>
<td>My nurse practitioner role was very well understood by the public</td>
</tr>
<tr>
<td>9</td>
<td>My nurse practitioner role was very well understood by management</td>
</tr>
<tr>
<td>10</td>
<td>I was very comfortable managing my patients</td>
</tr>
<tr>
<td>11</td>
<td>I felt anxious about the integration of theory into my practice</td>
</tr>
<tr>
<td>12</td>
<td>I felt very competent managing my patient case load</td>
</tr>
<tr>
<td>13</td>
<td>My supervisor was very available/approachable</td>
</tr>
<tr>
<td>14</td>
<td>My mentor was very available/approachable</td>
</tr>
<tr>
<td>15</td>
<td>I felt that my nurse practitioner role was seen as a substitute for a resident</td>
</tr>
<tr>
<td>16</td>
<td>I had trouble applying the theory to practice when I was under stress</td>
</tr>
<tr>
<td>17</td>
<td>I felt that I was doing more than one person’s work</td>
</tr>
<tr>
<td>18</td>
<td>I felt that I was isolated</td>
</tr>
<tr>
<td>19</td>
<td>I felt that I got very little support</td>
</tr>
<tr>
<td>20</td>
<td>I felt less confident than I did before becoming a nurse practitioner</td>
</tr>
<tr>
<td>21</td>
<td>I felt it was easy to transition from nurse to nurse practitioner</td>
</tr>
<tr>
<td>22</td>
<td>I felt I had the skills to deal with the role transition</td>
</tr>
<tr>
<td>23</td>
<td>I felt I developed my nurse practitioner role within a nursing framework</td>
</tr>
<tr>
<td>24</td>
<td>I felt I developed my nurse practitioner role within a medical framework</td>
</tr>
<tr>
<td>25</td>
<td>I felt that I was an invisible provider on the healthcare team</td>
</tr>
<tr>
<td>26</td>
<td>I felt that I had a poor relationship with the MDs</td>
</tr>
<tr>
<td>27</td>
<td>I felt anxious in my communications with other health care providers</td>
</tr>
<tr>
<td>28</td>
<td>I felt that I needed extra time to complete my responsibilities</td>
</tr>
<tr>
<td>29</td>
<td>I was able to navigate the health care system to develop my new role</td>
</tr>
<tr>
<td>30</td>
<td>I had a clear understanding of third party reimbursement</td>
</tr>
<tr>
<td>31</td>
<td>My nurse practitioner program prepared me for a smooth role transition</td>
</tr>
<tr>
<td>Age (years)</td>
<td>Mean</td>
</tr>
<tr>
<td>------------------</td>
<td>------</td>
</tr>
<tr>
<td>Work in specialty prior to NP role (years)</td>
<td>10.3</td>
</tr>
<tr>
<td>NP experience (years)</td>
<td>11.2</td>
</tr>
<tr>
<td>NP preparation included MS degree</td>
<td>73%</td>
</tr>
</tbody>
</table>

**Specialty Area of Practice (# respondents, %)**

- Neonatology/Perinatal: 74, 41
- Family practice: 43, 24
- Adult: 23, 13
- Acute care: 13, 7
- Women’s health: 12, 6
- Geriatrics: 10, 5.5
- Pediatrics: 6, 3
- Anesthesiology: 1, 0.5

**Current Practice Setting (# respondents, %)**

- Private office: 52, 29
- Acute hospital: 45, 25
- NICU: 44, 24
- Hospital outpatient/clinic: 27, 15
- College health: 4, 4
- Long term care: 6, 3

**Basic Nursing Education (# respondents, %)**

- Diploma: 35, 19
- Associate degree: 53, 29
- Bachelor degree: 85, 47
- Master degree: 9, 5

**Highest Degree Held (# respondents, %)**

- Diploma: 5, 3
- Associate degree: 12, 6
- Bachelor degree: 18, 10
- Master degree: 140, 77
- Doctorate: 7, 4
Table 3

*Exploratory Component Analysis (PCA, Varimax Rotation): Components and Item Loadings (>4.0) for the NPRTS*

<table>
<thead>
<tr>
<th>Item</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
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</thead>
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<td>.850</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>.802</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3</td>
<td>.787</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>21</td>
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<td>22</td>
<td>.649</td>
<td></td>
<td></td>
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<tr>
<td>8</td>
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<tr>
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<td>28</td>
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<td></td>
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<td></td>
<td>.404</td>
</tr>
</tbody>
</table>
Table 4

*Item Analysis and Descriptive Statistics for the NPRTS (N= 427)*

<table>
<thead>
<tr>
<th>Dimension/Item</th>
<th>Response Percentage</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Component I – Developing comfort and building competence in the role (n=173)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I was very comfortable managing my patients (10)</td>
<td>3 30 25 34 8</td>
<td>3.15</td>
<td>1.04</td>
</tr>
<tr>
<td>I felt very competent managing my patient case load (12)</td>
<td>5 25 23 39 8</td>
<td>3.19</td>
<td>1.04</td>
</tr>
<tr>
<td>I was comfortable in my role (3)</td>
<td>7 30 22 30 12</td>
<td>3.10</td>
<td>1.13</td>
</tr>
<tr>
<td>I felt it was easy to transition from nurse to nurse practitioner (21)</td>
<td>14 32 23 25 7</td>
<td>2.77</td>
<td>1.15</td>
</tr>
<tr>
<td>I felt I had the skills to deal with the role transition (22)</td>
<td>2 17 15 51 16</td>
<td>3.65</td>
<td>.97</td>
</tr>
<tr>
<td>I felt less confident than I did before becoming a nurse practitioner (20)</td>
<td>14 24 21 25 16</td>
<td>3.04</td>
<td>1.31</td>
</tr>
<tr>
<td>My nurse practitioner program prepared me for a smooth role transition (31)</td>
<td>9 29 28 27 8</td>
<td>2.93</td>
<td>1.10</td>
</tr>
<tr>
<td>I felt that I needed extra time to complete my responsibilities (28)</td>
<td>7 40 17 25 11</td>
<td>2.90</td>
<td>1.18</td>
</tr>
<tr>
<td><strong>Component II – Understanding of the role by others (n=177)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My nurse practitioner role was very well understood by the public (8)</td>
<td>21 43 28 8 1</td>
<td>2.23</td>
<td>.89</td>
</tr>
<tr>
<td>My nurse practitioner role was very well understood by my patients/families (7)</td>
<td>13 36 28 20 3</td>
<td>2.64</td>
<td>1.05</td>
</tr>
<tr>
<td>My nurse practitioner role was very well understood by management (9)</td>
<td>14 33 21 22 9</td>
<td>2.78</td>
<td>1.21</td>
</tr>
<tr>
<td>My nurse practitioner role was very well understood by my physician colleagues (5)</td>
<td>9 25 15 29 21</td>
<td>3.26</td>
<td>1.31</td>
</tr>
<tr>
<td>My nurse practitioner role was very well understood by my nurse colleagues (6)</td>
<td>8 26 20 31 16</td>
<td>3.19</td>
<td>1.21</td>
</tr>
<tr>
<td><strong>Component III – Collegial support (n=177)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt that I got very little support (19)</td>
<td>6 14 21 34 24</td>
<td>3.55</td>
<td>1.16</td>
</tr>
<tr>
<td>I felt that I was isolated (18)</td>
<td>8 27 21 25 18</td>
<td>3.18</td>
<td>1.24</td>
</tr>
<tr>
<td>I was treated as a professional by my colleagues (4)</td>
<td>4 13 21 42 20</td>
<td>3.61</td>
<td>1.07</td>
</tr>
</tbody>
</table>

Rating scale: 1 = *Strongly Disagree*; 2 = *Disagree*; 3 = *Neither Disagree or Agree*; 4 = *Agree*; 5 = *Strongly Agree*
Table 5

*Item Analysis and Reliability Data for the NP Role Transition Scale*

<table>
<thead>
<tr>
<th>Item</th>
<th>Correlation with Dimension</th>
<th>Dimension Alpha Reliability if Item Deleted</th>
<th>Dimension Alpha Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Component I – Developing comfort and building competence in the role (n=173)</strong></td>
<td></td>
<td></td>
<td><strong>.88</strong></td>
</tr>
<tr>
<td>10</td>
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Neonatal Nurse Practitioner Role Transition: The Process of Re-Attaining Expert Status

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Abstract

Neonatal nurse practitioners (NNPs) have managed care for high-risk hospitalized infants in the U.S. for over 30 years. The role is an important one, especially for fragile preterm infants who require the skills expert NNPs possess. The journey from expert nurse to novice NNP, and then finally to expert NNP is fraught with many challenges. This study used a qualitative descriptive design to describe advanced practice role transition among 70 NNPs. Four themes emerged that depicted a linear progression of the transition process from school preparation to beginning feelings in the new role and then development into a more confident practice. Theme 1: First impressions: Am I prepared emphasized the ambivalence novice NNPs experienced during a stressful and exciting adjustment period. Theme 2: The transition demonstrated the overwhelmingly similar feelings of anxiety, insecurity, exhaustion and lack of confidence that plagued decision-making. Theme 3: Making it as a real NNP indicated that, while time to feeling like a real NNP varied, the one-year mark was a consistent, significant timeframe. Theme 4: The helpers and hinderers revealed the vulnerability of the novice NNPs to harsh criticism and the importance of support, especially from nurse colleagues. NNPs are a valuable resource, thus enhancing transition is a worthy goal.

Key words: neonatal nurse practitioner; role transition; advanced practice nurse

Precis: This qualitative study of 70 NNPs’ role transition demonstrated a linear progression of from expert nurse to novice nurse practitioner and, finally, expert nurse practitioner.
Neonatal Nurse Practitioner Role Transition: The Process of Re-Attaining Expert Status

Advanced practice role transition has been described as a stressful period in a nurse’s career.\textsuperscript{1-3} Factors that influence the transition from nurse to advanced practice nurse (APN) have not been conclusively established. Experienced nurses give up their senior status and return to school, becoming students, and novices, once again. Following graduation from the master’s program that prepared them as APNs, fledgling APNs of all types must establish their competence and embark on a journey that will eventually lead to an expert APN. While there are different challenges in each advanced practice role and discipline, the process of role transition is a universal one. Successful role transition results in an APN who is competent and confident, and who relishes the challenges that the new role brings.

There are many individual and institutional influences on the role transition experience, but successful role transition is crucial for complete actualization of the APN role. With the acute shortage of APNs, it is imperative that each new graduate move through the role transition process as quickly and positively as possible. Nowhere is this shortage felt more acutely than in the neonatal field. Neonatal nurse practitioners (NNPs) are the most established acute care nurse practitioners, dating back to the 1970s. NNPs have demonstrated their worth and occupy APN roles in the majority of neonatal intensive care units (NICUs) in the United States (U.S.).\textsuperscript{4-7} The shortage of NNPs in the U.S. has recently been documented,\textsuperscript{8} validating the importance of each NNP graduate’s successful transition to the NNP role. This study used a qualitative descriptive design to describe the role transition process of 70 NNPs.

Literature Review

There are limited studies on APN role transition and the literature is particularly sparse for NNP role transition. Meleis’ work provides a framework from which to examine the transition process. Meleis defined transition as “a change in health status, in role relationships,
expectation, or abilities.”⁹ According to Meleis, transition requires “the person to incorporate new knowledge, to alter behavior, and therefore to change the definition of self in social context.” In their comprehensive literature review Schumacher and Meleis,¹⁰ found four types of transitions: developmental, situational, health/illness events, and organizational. Despite the diversity of transition, commonalities exist across these categories, known as “The Universal Properties of Transitions.”

Role transition is not a single event, but it occurs over time. The transition process involves “development, flow, or movement from one state to another.”¹⁰ More recently a midrange theory of transitions has been developed.¹¹ In the literature, the transition process or career development has been characterized as a lifelong series of choices that individuals make to express their changing needs.¹² While this qualitative study does not utilize a theory to guide it, the development of the theory is an important contribution to the literature on transitions.

The challenges of the initial year of APN practice were the focus of a qualitative grounded theory study describing the experiences of 35 new nurse practitioner graduates at one, six, and twelve months post-graduation.¹ The researchers developed a model they called ‘From Limbo to Legitimacy’ to explain the experiences of primary care nurse practitioners during their first year of practice. The model described four primary processes, or stages that participants passed through during the first year: (a) laying the foundation, (b) launching, (c) meeting the challenge, and (d) broadening the perspective. During the first stage, laying the foundation, participants described beginning the process of building a career: recovering from school, becoming credentialed and finding the first APN position. Worrying was a frequent emotion experienced during this stage. Launching, the second stage, lasted about three months, during which participants were frequently anxious about their competence and felt unprepared for the increased responsibilities of the APN role. During the third stage, meeting the challenge,
participants developed strategies for decreasing stress and enhancing role attainment. At the end of year one, participants broaden their perspective beyond their own issues, become aware of their competence, and are ready to focus on integrating themselves as valuable health team members, bringing the unique APN perspective to their role.

Masters prepared advanced nurse practitioners (N = 11) in the United Kingdom were studied as they transitioned into practice. The APNs completed a daily “role development diary” for 6 months to record the nature and focus of their practice, identified the “advanced” components of their new role, as well as factors that influenced role implementation and development. The early role focus in this sample was to develop technical and diagnostic skills. Variation in APN performance was also affected by personal, political and organizational agendas.

Qualitative methods (phenomenology) were used to explore and describe the transitional experience of six military nurse practitioners during the first year of clinical practice. The average length of the participants’ experience was two years. The military APNs described a role transition similar to their civilian counterparts. Participants were constantly compared with physician’s assistants (PA). Several APNs expressed having difficulty “fitting into” their new provider peer-group in comparison to the well-known nurse group. All of the APNs spent a great deal of time educating patients and physicians about their role. Other issues faced by these APNs were decision making, loss of autonomy, control issues, and ranking issues in which the military had contributed “organizational stress.”

A focus group design was used to examine the role transition experiences of 21 APN graduates from a large university. Methods included peer debriefing and participant verification to enhance data trustworthiness. Participants reported loss of control over time and loss of privacy, changes and losses in relationships, feelings of isolation and uncertainty in establishing
their role, and a special bonding relationship with clients. Results support previous findings about the stresses of the initial year of practice.

A qualitative descriptive design examined role transition in nine family nurse practitioners (FNP) using in-depth telephone interviews. A two-phase model emerged, with shared characteristics during the two phases. Phase I encompassed the educational experience and Phase II covered the transition to independent FNP practice, a period lasting from six months to two years following graduation. Phase I categories included intrinsic obstacles, such as personal sacrifices, feelings of inadequacy and role confusion; extrinsic obstacles such as clinical site, preceptor and staff negativity and lack of mentoring; turbulence associated with the many ups and downs of adapting to the role; extrinsic and intrinsic positive forces, such as the positive influences of others and internal coping mechanisms. The final outcome of Phase I was described as role development, with socialization into the FNP role. Phase II categories were the same as Phase I, experienced from the novice FNP perspective. Particular challenges included defensive encounters with colleagues and feelings of self-doubt and disillusion. Participants described professional, collegial and client and support and approval as important influences, along with intrinsic forces such as role immersion, positive self-talk, and role acceptance. The end result of Phase II was independent FNP practice. This study presented new findings, including barriers encountered during the educational process, such as personal commitments and sacrifices. An additional new finding was the difficulty described in role transition during the educational period by more experienced nurses, who struggled with role confusion and giving up the expert staff nurse role.

A case report further illustrates the problems experienced nurses encounter when transitioning to the APN role. The critical incident format was used to describe a last-semester student APNs’ difficulty adjusting to the fast pace of her final clinical placement in a
complicated acute care internal medicine clinic. Confident that her years of experience and ease of adjusting to previous more simple clinical placements had prepared for the realities of clinical practice, the APN student experienced a rude awakening when she encountered the realities of this clinical setting. She felt insecure in her knowledge and unable to meet the challenges associated with the new role. The authors describe the process of role attainment and the importance of acknowledging the particular role to be attained; in this case, the role of student APN must be accepted to allow growth to occur. Expertise in one role is not transferable to other roles, even in the same discipline. These authors titled their paper “From Expert to Novice: The Unnerving Transition from Experienced RN to Neophyte APN”, the first time the phenomenon of expert to novice was used in print.

The educational, working experiences and subsequent training needs of graduates were the focus of a study of one advanced neonatal nurse practitioners (ANNP) course in the United Kingdom. Mixed methods of interviews, focus groups, and a survey were used to explore the experiences of the transition to becoming an ANNP. The participants were five graduates of an ANNP program along with two focus groups consisting of ANNPs, and pediatricians. The findings from this research suggest that all new graduates from the ANNP programs, in order to feel confident and to be experienced practitioners, need more clinical experience with supportive mentors, regardless of the training they had received. Most participants expressed anxiety regarding the application of theory into practice. Role confusion was associated with reduced feelings of confidence. The ANNPs felt they did not have sufficient support systems or effective mentorship during the role transition process.

The only discussion of the stresses of the NNP role transition experience in the U.S. is provided in a literature review describing the NNP role and changes NNPs experience as they transition from the side to the head of the bed. This metaphor is emblematic of the increased
responsibilities the novice NNP assumes when moving into the management role at the head of the infant’s bed. Strategies to enhance the transition experience were also detailed.

Benner’s work on staff nurse transition classically describes the novice to expert theory of development.18 Nurses must pass through five stages of development before reaching expert status, a process that takes many years. It is clear from the literature reviewed that expert nurses revert to novices again when they return to school to pursue education as an APN.

Methods

A descriptive qualitative design was used for this study. This type of qualitative research is based on the general principles of naturalistic inquiry with the purpose of presenting a comprehensive summary of the phenomenon or event under investigation.19 This design has no formal association to a particular methodological or disciplinary source.20 Its purpose is to simply obtain information about the phenomena in order to describe what exists with respect to variables in a situation.

Sample

A convenience sample of NNPs was recruited using listservs and postal mailings. Responses were returned by 70 NNPs. All respondent data was included in the content analysis. Inclusion criteria for the participants consisted of having experienced a transition from NNP student to a clinical practice position in their new role, active practice in their specialty, and willingness to complete and return the survey. NNPs of all ethnic backgrounds, and both gender were eligible to participate.

Demographic information collected consisted of the respondent’s years of experience as an NNP, years in specialty prior to the NNP role, age, basic nursing education level, type of NNP educational preparation and highest degree held. The demographic data representative of this sample is listed in Table 1.
Procedure

Approval from the investigators’ institutional review board was obtained. An information
letter describing the study and survey were mailed by U.S mail or email to NNPs by accessing
publicly available mailing lists obtained from the Nurse Practitioner Central Website,
professional agency and organization listservs, and personal contacts. Request for survey
participation were also posted on APN organization websites, including study information and
directions for accessing the Formsite Survey. Ten open-ended questions addressed new NNP role
transition issues related to education preparation, integration into the new role, barriers
encountered, and factors helping or hindering the transition process (see Table 2).

Mailed surveys were returned by way of U.S. mail with the enclosed stamped, addressed
envelope or by email to the principle investigator at the university address. Surveys did not
include any identifying information. Envelopes were coded to facilitate a second mailing to non-
responders. Completed surveys were coded and separated from their envelopes, which were then
discarded. Surveys returned via the Internet were received as attachments. Upon opening the
email, the survey was printed and coded. The email was then deleted. No identifying information
was included with the survey print out. Responder anonymity was secured using Formsite
Survey as an independent, secured site. Only the research investigators had security codes to
access the site and download the survey data. Data from the survey narrative questions was
transcribed verbatim into an excel spreadsheet for analysis. All data were stored in locked
cabinets and password protected computers. Participants were not paid to be in the study.

Data Analysis

Qualitative content analysis was used to examine respondent’s written descriptions of
educational and transitional experiences during their first year of advanced practice. This type of
analysis employs structured methods to identify and make inferences about the characteristics
and meaning of written and recorded communications.\textsuperscript{21-22} The narrative texts in this study were analyzed using procedural steps described by Krippendorff resulting in thematic units.

A process of reflection and discussion with the co-investigator was conducted to enhance trustworthiness of the data analysis and interpretations. Each step of the data analysis was reviewed with the co-investigator for validation. Credibility was supported by the sample recruitment of NNPs who reported and described the experience of role transition. The open-ended questions were directly related to the proposed role transition constructs as formulated from the literature and content expertise. Completion of the survey was self-regulated by the respondents, so time and quantity of response was not limited. To capture elements not related to the content areas, a question was included in the survey asking respondents to describe any other transition experiences they had had.

Results

Themes

Analysis of the NNPs’ responses describing their transition to the role resulted in four themes that illuminate their experience. These themes depict a linear progression of the transition process from school preparation to beginning feelings in the new role and then development into a more confident practice.

\emph{Theme 1: First impressions: Am I prepared?}

The respondents fervently described their first impressions of the new NNP role. Overwhelmingly, the two most often sited words were “scary” and “exciting”, thus describing a culmination of feelings that were both pleasurable and adverse at the same time. One participant said “I was scared but excited at the same time. I knew that regardless of all my training and experience, there was still so much more to learn.”
The NNPs reported a gladness to finally be finished with school, but also a fear of the unknown as they embarked on their first NNP role. The NNPs described a sense of knowing what was supposed to happen in the role as well as having a good understanding of advanced practice nursing. More respondents reported their education and clinical training had prepared them for the role than not. Of these, many NNPs reported their feelings cautiously by using descriptive adjectives such as “fairly”, “somewhat”, and “to some extent” prepared for the role, while others reported a stronger feeling of being prepared for the new role.

A decisive factor having an impact on the NNPs’ feelings of preparedness for the role was their perception of the quality of their academic instruction and clinical practicum experience. In describing her preparation, one NNP stated, “I felt my program prepared me very well. I felt clinically competent. I was able to complete the basics and knew where to seek answers to questions.” Those feeling well prepared cited a strong academic background and specifically a meaningful clinical experience.

Academically, a strong program was described as providing a balance between theory and practice, having professors who knew the NNP role well to instruct the students and to provide reliable feedback on performance and answer questions about situations experienced in the clinical setting. However, once in the workplace, many students described an acute lack of pathophysiology, physiology of illnesses, and procedural interpretation, e.g., radiology exams. Many reported that their ability to perform in the new NNP role and gain confidence resulted from their hours of clinical and less so due to the classes.

Many described their clinical experience as invaluable. The type and quality of the assigned preceptor impacted the learning outcome of the clinical training. Both other NNPs and physicians were viewed as valuable trainers for the NNPs as students. Excellent clinical preceptors were described as having the ability to encourage autonomy, test critical thinking,
provide feedback, and offer a supportive environment. Another positive aspect that assisted with role transition was a clinical experience that mimicked the “real” NNP role as much as possible including working regular, full time shifts, rotating to nights, and participating in emergencies.

The length of time of the clinical experience was stated as having an influence on the performance of technical skills and procedures. Participants who reported inadequate clinical experiences stated they were less proficient and confident in their procedural skills once in the NNP role, causing more stress and anxiety, as now the skills had to be learned in the midst of everything else. Other barriers related to the clinical experience included having to compete for patient care experiences with other students and in-house residents. Overall, the recommendation from the group was to have increased clinical training hours with assured preceptors.

Theme 2: The transition.

Without doubt, the respondents clearly acknowledged that, “Yes, it was a transition,” to take on a new NNP role. One’s level of confidence and anxiety was repeatedly cited as a transition factor. One NNP stated, “I believe confidence is a huge factor. I was less confident and needed to think and rethink decisions then check and double check. . . Lack of confidence makes any big transition more difficult.” A true sense of self-doubt and the need to reassure oneself was evident in the participant’s responses, especially in those who felt less prepared for the role and those who had a negative experience during their clinical or academic training. Although the majority of NNPs in the study stated awareness of a transition phase, many underestimated the magnitude of their feelings and difficulties they would face as stated, “It is traumatic when facing the unknown. A silly thing like standing at the head of a bed was distressing.”

The NNP role transition was also reported as “very difficult,” “uncomfortable,” and “stressful” by numerous respondents. The difficulties in transitioning were often manifested with anxiety. The NNPs lack of confidence fueled feelings of anxiety, while increased anxiety
undermined their confidence creating a perpetuating cycle. Self-doubt in their decision making ability was a constant notion conveyed by many NNPs in the study. This is illustrated in one respondent’s statement:

> I had HUGE amount of anxiety – about everything. I would call and check on patients in the middle of the night, or call to ask if I had ordered a lab for monitoring. I feared coming to work and hearing I had made a huge error or killed a patient.

Additionally, for many NNPs anxiety contributed to severe mental and physical stresses. Some reported not being able to sleep for several months and even up to a year in one case as an NP accounts:

> It took a few years before I could sleep at night when I was on call at the hospital. Some from excitement, some from a busy unit, some due to being afraid of what would come next and could I handle it?

Others recalled having difficulty concentrating, crying frequently, developing nervous tics, and feeling physically and emotionally drained, which negatively affected both their personal and professional lives.

The level of anxiety stemmed largely from the NNP’s apprehension about making clinical decisions related to the patient’s care. “The thing that weighed on me most was that I had to take responsibility for those patient care decisions and their outcomes,” revealed a new NNP. Many remembered still questioning their knowledge and skills and wondered if they could really handle a crisis. Fear of making a fatal mistake or missing an important diagnosis frequently loomed in the NNPs minds. In opposition, the NNPs also didn’t want to portray themselves as overly protective having to develop balanced strategies as described by one respondent:

> I did experience a transition and it was challenging. There were times I would look at an infant and think, “Is this kid really going down the tubes or am I being overly cautious?”
Since I am known to have a “black cloud” most of the time, the kid was going down the tubes. I also learned how to be more of a Sherlock Holmes and not always jump the gun to order something.

Nearly all of the study participants had experience as a neonatal staff nurse prior to moving into the NNP role. An experience of adjustment was described by a myriad of practitioners shifting the primary premise from providing care to managing care and accepting an increased level of responsibility. Some described their new role as, “a great change, medical aspect of care versus nursing.” Others felt the role change required “having to evaluate how each therapy/medication/procedure is going to affect the patient.” This dramatic change in level of responsibility often stifled the new practitioner’s ability as one NNP recalled when describing the biggest challenge as, “analysis paralysis: making decisions when I knew my signature would follow the order.” The responsibility of making the diagnosis and writing the actual orders proved more stressful than expected.

The new NNPs further described challenging experiences in going from an expert bedside nurse to a novice practitioner. They had been comfortable in the staff nurse position and now had to adjust to a foreign way of practice as stated:

There is a huge mental transition between carrying out someone else’s orders and writing orders for someone else to carry out. I will simply never forget the first time I wrote an order for a medication to be given to a baby. There is now a sense of having now been taught to think at right angles to everything I had done as a RN – beginning from the standpoint of – what’s the differential diagnosis – to telling staff that I disagreed with their conclusion about what was wrong with a baby.

During the transition, NNPs stated they reverted to the staff nurse’s tasks, having to wear two hats at times and also being very critical of staff nurse performance at others. On occasion, some
wished they could do the bedside care for a particular patient they were managing. Yet, others found the transition from staff nurse to NNP was difficult. “Everyone expected that I would function independently immediately and that was NOT the case.”

Overall, the NNPs with less staff nurse experience, required more time to adapt to the new role and had more difficulty collaborating with or giving orders to the nursing staff. A majority felt that returning to their previous unit as a NNP was beneficial and contributed largely to their transition success. The NNPs who worked at the same environment as their student clinical experience described the situation as helpful as well.

The orientation of the new NNPs was viewed as a huge factor impacting transition relating specifically to the type and length of the program. Some felt they had a very good orientation and others felt the complete opposite making statements such as, “I felt that I did not get any kind of orientation.” and “I was just thrown in.” The lack of an orientation supported comments of poor role transitions. Those who reported a good transition described a structured, organized orientation being precepted by other NNPs on the same unit or by working directly with the Neonatologists. One participant stated, “I had a six month orientation working with another NNP. It was an excellent orientation.” These practitioners were able to progress through the role functions slower, with continued guidance and feedback.

A very strong impact by the physicians was noted throughout the comments of the NNPs. “Supportive,” “interested in the role” and “helpful” were frequent comments. Physicians who were thought to embrace the role, had prior experience with NNPs, and worked directly with the NNPs were found to ease the transition process. Those physicians found to be unfamiliar with the APN role or in hospitals with a poorly defined role had a deep negative impression on some practitioners, forcing a few to contemplate leaving the hospital or the practitioner role altogether. The majority of respondents noted they had gone through a turbulent, somewhat unexpected role
transition, with varying degrees of stress and accomplishment. In the end, many acknowledged their level of success in the role, but couldn’t deny the arduous road they had traveled reported by one, “It [transition] requires a degree of mental toughness to make the transition and to continue to grow in the role. It’s not an easy job, but I have loved it from the beginning.”

**Theme 3: Making it as a real NNP.**

The length of time involved before respondents described themselves as “making it” in the new role varied, but the one-year mark was a consistent, significant timeframe. One’s type and degree of previous experience impacted the length of the transition period, as well as the robustness of the student clinical experience. Most of the respondents who had worked as a staff nurse or completed their clinical practicum in the unit of their first NNP job described a less difficult transition. The previous exposure did not fully prepare the practitioners for their new NNP role, but did give them a sense of familiarity with the hospital, unit, and staff. Although inherent in this comfort, other challenges ensued for the NNPs, such as being less accepted initially and more likely to be challenged by staff nurses expressing a sense of having to “prove oneself” first. One participant said “…there was an earn/demonstrate your value first attitude”. On the other hand, NNPs who reported transitioning into their first NNP role in a completely different environment were more readily accepted by the staff, but had more difficulty learning the organizational culture and practice routines.

Another component of the “making it” theme included achieving specific milestones with success. Many respondents described feeling more like an NNP once they passed their exams, thus lifting some stress and anxiety. Most described being able to handle the role when they could effectively make practice decisions on their own without relying on the physician for verification or advice. One practitioner stated, “It didn’t feel real until I had to do it all on my own.” Being able to manage a patient emergency such as a resuscitation, taking night call, or
managing a full case load marked important milestones in the transition as well. Such events fostered a feeling of accomplishment in the NNPs’ knowing they could handle a non-routine situation with minimal assistance as stated:

I guess you could say the first time I had to give orders and round on patients by myself, without anyone looking over my shoulder or signing my orders before they could be done. . . I knew I was a NNP.

The recognition and validation of the staff nurses, neonatologists, and other physicians revealed the ultimate feelings of transitioning to a “real” NNP. The respondents were able to describe in many cases when they gained the true sense of being a real NNP. For example, they experienced a belief in their ability when colleagues asked for advice about the management of a baby or sought their opinion after talking with a less experienced resident. The powerful strength of this recognition is described by one participant as:

About 16 months after I started, I attended a delivery of a newborn who was very pale. I checked her RBC count, and the lab reported it as 91. Since I had drawn the blood myself, I knew it wasn’t diluted and suspected it was true. I called the neonatologist, who came in to help administer blood by exchange to raise the HCT. When I heard the doctor tell the parents that I had saved their baby’s life – that’s the first time I felt like a real NP.

Overall, respondents agreed it takes time to develop confidence and rapport with the other staff members and a sense of realness in the NNP role. Based on past experiences and present patient care situations, some felt like a real NNP sooner than others. When the feeling hit, it was well recognized and very welcome as stated by one NNP, “It hit me like a train, that I was capable, and that what I knew and did was significant and valuable.”

Theme 4: The helpers and hinderers.
As the NNPs progressed, they described specific things that either helped of hindered their transition. The word “support” is repeatedly used by the participants to describe their new role experiences and was viewed as one of the most important elements of a successful transition. When working in an environment with physicians and others that supported learning, the new NNPs developed into their new role with less difficulty. “The neonatologists’ support could not have been better, I think it made us successful under a difficult situation,” stated one participant. To be the most beneficial, the NNPs owned a role in their own learning as well. The NNPs who actively engaged in their own learning, sought out new experiences, and asked questions struggled less. In recollecting the experience, one NNP advised:

Ask questions. The neonatologists and your NNP partners will appreciate that more than anything. My first medical director encouraged questions and that really helped to increase my security in knowing someone else was there to help me along. He was a great supporter and that made a big difference.

Equally important was the support of the staff nurses and unit leaders. As partners in the patient’s care, the NNPs valued a collaborative working environment needing to trust and be trusted by the staff nurses. As stated by an NNP, “Support of the nursing staff was key to my success and continued happiness in the NNP role.” This proved difficult by many in the study who returned to the same unit where they had practiced as a staff nurse. Many reported having difficulty now with the same staff they had worked well within the past. Their new role brought out a lack of trust in performance and even a lack of respect as stated in some cases. This unanticipated situation caused anxiety in many of the NNPs.

Unexpected experiences, such as poor professional behavior by staff nurses or other NNPs were reported as being problematic and seen as the most dramatic hindrance to role transition. Such episodes caused some new NNPs to question and doubt their decision in
becoming a practitioner. These environments revealed great stress and limited learning in the NNPs as described as a hindrance, “The constant bickering from nursing staff and neonatologists.” Although limitedly reported by the respondents, the impact was severe when such behaviors were noted often leading to the NNP changing quitting or changing jobs.

Over time the NNPs continued to gain experience and confidence in their abilities mastering the role. Common comments included “gaining experience and confidence” and “time and experience” to describe their transition into the NNP role. Even after numerous years of practice, the NNPs in the study were able to articulate their experiences in transitioning to their first practitioner. “Thank you for asking these questions. It has helped me look back and recognize where I came from, so that I can more fully appreciate where I am now, 16 years later.”

Discussion

This study provides valuable insight into the challenges faced by novice NNPs as they negotiated the troubled waters of the first NNP position. Participants reported an initial adjustment period fraught with ambivalence and a complex mix of positive and negative feelings. Results indicate that NNPs share many common experiences and feelings reported by APNs during the transitional period. The large sample of 70 NNPs, who consistently described the same emotional turmoil and difficulty adjusting to the APN role, provides validation for the universality of the role transition experience. The particular challenges may differ between specialties, e.g., the metaphor of moving from the side to the head of the bed to assume the patient management position, described earlier and supported in this study, is specific to the neonatal arena. Regardless, the feelings accompanying the challenges and the process of responding to them was described in a remarkably similar fashion.
The expert to novice phenomenon was a pervasive experience that participants had not expected and found particularly upsetting. Accustomed to feeling competent and being in charge, participants described the humbling experience of becoming a novice again. The journey back to expert status was long and arduous and often took years of practice to achieve.

No matter how far the NNPs were from their role transition experience, they vividly described the process and its influence on their practice, as if it were yesterday. Their descriptions supported the Limbo to Legitimacy model\(^1\) with almost step-like precision, as they marched a path through insecurity, exhaustion, and anxiety, second-guessing their decisions until they arrived at that final destination, feeling like an expert NNP. The participants also described facilitators and barriers to arriving at that goal. The importance of a thorough orientation period and the support of other professionals, particularly staff nurses and NNP co-workers, were especially influential in the transition process. The findings demonstrated that supportive, nurturing mentorship helps far more than the supposedly ‘helpful’ technique of terrorizing novice APNs in a misguided effort to prepare them to think on their feet in a crisis. If the goal is a competent, confident, expert NNP in the shortest possible timeframe, facilitating that transition is a worthy goal. NNPs have become invaluable members of the healthcare team, relied upon by professionals and families to manage the care of high-risk infants in the U.S. Each NNP is an irreplaceable asset, to be supported and treasured, and guided on the journey to expert practice.
References


Table 1. Description of NNP participants.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Lowest</th>
<th>Highest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years):</td>
<td>48.1</td>
<td>6.7</td>
<td>29</td>
<td>64</td>
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<tr>
<td>NP experience (years):</td>
<td>13.9</td>
<td>6.5</td>
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<td>28</td>
</tr>
<tr>
<td>Work in specialty prior to NP role (years):</td>
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<td>5.6</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>NP preparation included MS degree:</td>
<td>Yes = 49%</td>
<td>No = 50%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Basic Nursing Education (%)

14 Diploma  
33 Associate degree  
49 Bachelor degree  
4 Master degree

Highest Degree Held (%)

4 Diploma  
16 Associate degree  
17 Bachelor degree  
59 Master degree  
4 Doctorate

Location of Practice: 21 U.S. states, Top Five (%)

24 Texas  
13 Florida  
9 Tennessee  
9 Washington  
4 Connecticut and Colorado
Table 2. NNP Role Transition Survey Questions

1. What was it like for you when you first became a NP?
2. Did you feel prepared for the role? Why/why not?
3. What were your biggest challenges as a novice NP?
4. It has been suggested that the first months of practice as a NP is a time of transition. Did you experience that? What was it like?
5. When did you begin to really feel that you were a NP?
6. What did you experience before that?
7. What helped or hindered arriving at that feeling?
8. Did you feel like you had to recuperate from the stresses of school while you were trying to develop your new role? How much of a problem was that for you?
9. What kind of orientation, if any, did you have to your new role?
10. Is there anything else you would like to add about your transition experience?
Revision and Validation of the Nurse Practitioner Role Transition Scale

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Abstract

Background and Purpose: During their first year, new nurse practitioners (NPs) report challenges and dissatisfaction with the transition from traditional nursing to advanced practice. The Nurse Practitioner Role Transition Scale (NPRTS) was developed to measure hypothesized constructs that reflect and influence NP role transition. Recently, the NPRTS was revised both to refine three constructs in an earlier version and to add a new one. The purpose of this study was to assess psychometric properties of the revised instrument.

Results: A sample of 427 NPs representing a variety of specialties and practice settings who had experienced role transition and were actively practicing completed the revised NPRTS. An initial confirmatory factor analysis (CFA) failed, suggesting significant lack of fit between observed data and the theorized model underlying the instrument. Respecification of the model structure substantially improved the fit but did not attain satisfactory levels for critical fit indices ($\chi^2 = 831.84$, $df = 263$, $p < .01$, CFI = .91, RMSEA = .07, and SRMR = .06. Exploratory factor analysis (EFA) was conducted to investigate latent structures of the revised instrument. The three factors in the final EFA model were the same as those revealed in the previous phase of NPRTS development and 14 of the 18 indicators in that final model carried through from the earliest draft version of the instrument. Internal consistency was high for each of the three final factors.

Conclusion: Two rounds of evaluation consistently infer that a core set of indicators in the NPRTS questionnaire provides valid and reliable measures of NP role transition. These indicators reflect the constructs of “role confidence, comfort, and competence,” “collegial relationships,” and “understanding of the role by clients.” Because the latest version of the NPRTS developed during this study’s analyses results from EFA, an additional round of sampling and CFA will be necessary before finalizing the instrument’s content.
Key words: nurse practitioner, role transition, instrument development, confirmatory factor analysis, exploratory factor analysis
Revision and Validation of the Nurse Practitioner Role Transition Scale

The advanced practice nurse (APRN) role has evolved into a significant contributor within the current health care system. Nurse practitioners (NP), a type of advanced practice nurse, have been shown to positively impact patient care outcomes as well as increase staff and patient satisfaction (Geiss & Cavaliere, 2003; Horrocks, Anderson, & Salisbury, 2002; McMullen, Alexander, Bourgeois, & Goodman, 2001). With advanced education and defined standards for clinical competence, professional performance, and academic competencies (AACN, 2012; NONPF, 2014), it seems logical that a newly graduated NP would transition into practice easily. However, in reality, several studies report that NPs experience multiple challenges when transitioning into their first practice role with negative effects on their level of confidence and overall performance (Bosch, 2000; Brown & Draye, 2003; Cusson & Strange, 2008; Fleming & Carberry, 2011; Spinks, 2008; Szanton, Mihaly, Alhusen, & Becker, 2010). Feelings of isolation, uncertainty, and insecurity, contribute to an undesirable transition experience (Brown & Olshansky, 1998; Kelly & Mathews, 2001; Nicolson, Burr, Powell, 2005). Role confusion is also reported because new NPs are often treated as a high functioning RN or as a substitute for a junior doctor (Nicolson, Burr, & Powell; Poronsky, 2013). Further compounding the problem is a general lack of or a wide variation in orientation processes and persons responsible for the oversight of new NPs (Flinter, 2011; McKay, 2006; Yeager, 2010). These transition experiences are frequently unanticipated, with NPs being ill prepared to evaluate their progress or to identify specific constraints to it (Roberts, Tabloski & Bova, 1997).

Role transition for newly graduated NPs is frequently described with themes or as a process in which the NP moves through a series of identified stages as a means to overcome challenges and attain increased role responsibilities (Brown & Olshansky, 1998; Carryer, Boddy, & Budge, 2011; Chang, 2006; Fleming & Carberry, 2011; Heitz, Steiner, Burman, 2004; Stanley,
2005). Additional studies identify factors and strategies including an orientation plan and residency training program that may foster a smooth (successful) transition for new NPs (Bahouth & Esposito-Herr, 2009; Flinter, 2011; Kleinpell & Hravnak, 2005; Szanton, Mihaley, Alhusen, & Becker, 2010). However, limited analysis has been completed that assesses the impact of these proposed strategies on NP role transition proficiency, on job satisfaction, or on the retention of newly recruited NP employees. Furthermore, there remains a lack of consensus regarding the conclusive constructs that define NP role transition and the factors that influence it. In addition, there is limited data that support the actual assessment and measurement of the transition process in nursing advanced practice.

In today’s health care environment, new NPs are expected to “hit the ground running” (Hamric, 2003). To facilitate a successful transition, NPs must be aware of and be able to deal with the issues they will face while enacting their role. A definitive structural model representing NP role transition and a concrete way to measure the constructs, inhibitors, and indicators within that model are essential in establishing a successful pathway for role transition. Recently, Cusson et al. (2014) presented the Nurse Practitioner Role Transition Scale (NPRTS), an instrument providing assessments of three constructs related to the transition process – namely, “developing comfort and building confidence”, “understanding of the role by others”, and “collegial support”. The goals of this study were (1) to revise the NPRTS through refinements to its items and expansion of its underlying constructs and (2) to assess psychometric properties of the revised instrument.

Conceptual Framework

Transition Theory

Transitioning from one state to another is a principal component of career advancement. A newly graduated NP embarks on a personal transformation by assuming an advanced, complex
role requiring a change in functions, scope of practice, and level of responsibility. Transition theory provides the conceptual framework for the ongoing development of the NP role transition measurement instrument. Bridges (1980, 1986) describes transition as a sequence of phases, in which one encounters difficulties and a period of adjustment; that is, . . . “letting go of the person you used to be and then finding the new person you have become in the new situation” (p. 75). From a nursing perspective, Chick and Meleis (1986) add to the transition concept by referring to the process and outcome of complex person-environment interactions as a passage from one state, condition, or place to another. This process requires a person to incorporate new knowledge and to alter behavior in order to change the definition of self (Meleis, 1997). The transition process varies based on the environment and individual responses; however, common facilitators and inhibitors (i.e., transition conditions) related to personal beliefs, expectations, knowledge and skills, environment, planning, and emotional and physical well-being are recognized as having a negative or positive effect (Meleis, Sawyer, Im, Schumacher, & Messias, 2000). These effects are described as patterns of response and include process indicators (i.e., feeling connected, interacting, location and being situated, and developing confidence and coping) and outcome indicators (i.e, mastery and fluid integrative identities). Though it is not possible to control for each individual’s past experiences within the transition process, it is possible to provide a structured model that describes specific elements of the role transition as identified with newly graduated NPs entering the work force. Accounting for and managing elements of the transition will help foster a more positive experience, which should lead to a successful outcome. The role transition from RN to NP is well described by these models.

**From Expert to Novice**

Much of the research describing NP role transition is congruent with the traditionally understood and accepted novice to expert theory by Benner (1984). In this theory, new nurses
(NPs in this case) begin a new role as a novice. As they evolve over time, they go through a series of defined stages. However, nurses can become stuck, per se, if they are unable to manage or overcome the elements within a particular stage. The final level is that of expertise. In the Benner model, it is possible to not attain the level of expertise, and the rationale for failure to advance is not always clear.

Conventional practice is that experienced RNs with developed expertise in a practice will advance their career by returning to school to become an NP. In these cases, the premise is that an expert RN will transition into a new NP role with ease at the same level of expertise, especially if the new role is within the same setting and/or specialty practiced as a RN. However, studies find that the exact opposite is experienced. A case study by Forbes and Jessup (2004) illustrates the problems an experienced nurse encountered when transitioning to the APRN role. Confident that her years of experience and adjustment abilities had prepared her for the realities of clinical practice, the APRN experienced a rude awakening. She felt insecure in her knowledge and unable to meet the challenges associated with the new role. It was found that expertise in one role is not transferable to other roles, even in the same discipline. Within the context of APRN role transition, this phenomenon was referred to as moving “from expert to novice”.

Existing work by the present authors (Cusson & Strange, 2008) describes role transition experiences among neonatal nurse practitioners (NNP) as they reattained their previous expert RN status in their new NNP role. A qualitative analysis depicted a linear progression from educational preparation to beginning feelings in the new role and, finally, to development into a confident practitioner. For these NNPs, their first year was fraught with high expectations, undue stress, and many challenges. Although the end result was an eventual transition to a competent and confident NNP, the respondents reported that a more positive transition experience would have created less distress.
Similarly, the change in roles new NNPs experienced was described as they transitioned “from the side to the head of the bed” (Cusson & Viggiano, 2002) in becoming the leader of the medical team caring for a critically ill newborn. This metaphor is emblematic of the increased responsibilities (i.e., expertise) the novice NNP assumes when moving into this clinical management role.

These studies provide evidence that NP role transition is not necessarily the same process experienced by RNs. A compounding factor is that the new NP arrives into the role with a previous level of experience and expertise, which is manifested as high expectations for performance not only by the NP, but by his/her professional colleagues as well. There is a mismatch between expectations and reality which catapults a new NP into a state of distress and confusion. Thus, a void in preparing new NPs with the knowledge and skills to manage such role transition experiences is acknowledged.

**Background**

**The Original Nurse Practitioner Role Transition Scale**

Previous work by the author and other investigators began by identifying constructs comprising NP role transition for a “draft version” of the NPRTS (denoted “v. 0”) (Cusson et al., 2014). NPRTS (v. 0) was comprised of five hypothesized constructs encompassing 31 indicators. The development of these constructs and indicators were derived from content expertise and current findings in the literature. The proposed constructs were congruent with pattern response process indicators as in Meleis’s transition theory (Meleis, Sawyer, Schumacher, Messias, 2000), which was used as the conceptual framework. These constructs included: (a) perception of the adequacy of the nurse practitioner educational program [8 items], (b) perception of expertise as a novice practitioner [4 items], (c) relationships with colleagues and co-workers [9 items], (d)
availability of a mentor for guidance and feedback [2 items], and (e) the socialization of the nurse practitioner into a nursing or medical arena [8 items].

To assess validity and reliability of NPRTS (v. 0), Cusson et al. (2014) conducted an EFA and internal consistency evaluations on a sample of n = 182 NPs from a variety of specialties and practice settings who had experienced role transition and were actively working in their profession. During these analyses, decisions were made, based on standard statistical thresholds and theoretical evidence, to exclude 15 out of the 31 indicators as means to improve construct definition and integrity. This process resulted in the “original” NP role transition scale NPRTS (denoted “v. 1”), a three factor, 16-item instrument. Factors in the scale included: (a) Factor 1 – Developing Comfort and Building Competence in the Role [8 items], (b) Factor 2 – Understanding of the Role by Others [5 items], and (c) Factor 3 – Collegial Support [3 items]. Overall, these constructs were consistent with those originally hypothesized. However, the construct related to socialization into a nursing or medical practice model that had been included in NPRTS (v. 0) was not represented within NPRTS (v. 1).

Revision of the Nurse Practitioner Role Transition Scale

All factors and indicators from the initial, draft instrument (v. 0) were analyzed in consideration for refining NPRTS (v. 1) in preparation for additional testing with a new sample. An updated review of the literature was conducted in an effort to further understand the constructs and indicators related to NP role transition. Findings from the Cusson et al. (2014) EFA study along with additional content analyses provided supporting evidence for revision and guided modifications including the addition of new items.

Sixteen indicators from the original version (NPRTS (v. 1)) were retained in the revised version (v. 2). Among these, four were reversed from a negative to a positive statement. Four omitted indicators from the draft NPRTS (v. 0) were re-introduced based on content analysis.
Three of these were reversed to a positive statement and one was revised to improve meaning. An additional 11 new items were added to enhance content validity of the constructs of NP role transition. All items were written as or reversed to a positive response statement. In sum, this process resulted in the “revised” version of the NPRTS (denoted “v. 2”), which included four factors and 31 items. (See Table 1).

In NPRTS (v. 2), Factor 1 (Developing Comfort and Building Competence in the Role) describes the perceptions of new NPs in relation to their degree of comfort, competence, and confidence in their role using nine indicators. This factor represents a combination of indicators related to educational preparation and to expertise as a new NP. All eight of the indicators from the EFA that produced this factor were retained for NPRTS (v. 2). These are numbered 1 through 8. Among these, two items were reversed to reflect a positive statement. A new item (#9) was added to address confidence in decision-making.

For Factor 2 (Understanding of the Role by Others) in NPRTS (v. 2), all five original items were retained from NPRTS (v. 1) and two new items were added. This dimension represents the NP’s perception of understanding of the role by others including the public, patients, and professional colleagues. The retained indicators are numbered 10 through 14 on the NPRTS (v. 2). Two newly developed items representing the concepts of trust and acceptance (Items 15 and 16) were added. Additional evidence in the literature revealed that NPs reported a stronger feeling of transition when they perceived trust from their patients and acceptance into their new role from other healthcare professionals.

Factor 3 (Collegial Support) in NPRTS (v. 2) describes the level of support and professionalism a new NP experiences as well as feelings of isolation in the new role. All three of the indicators from NPRTS (v. 1) were retained for the revised scale. Two were reversed to positive statements. These were numbered as Items 17, 21, and 22 in the revised NPRTS (v. 2).
An additional indicator from NPRTS (v. 0) was revised and included to represent the nurturing experienced from assigned mentors and preceptors (numbered #24). Content analysis revealed that, without support from colleagues, new NPs often flail in their role, feeling isolated and alone even though they performed competently. Five new items were added to Factor 3. These indicators address perceived support from specific team members (physician, nursing, and management) as well as the concepts of value, respect, and nurturing (Items 18, 19, 20, 23, and 25). Feelings of value and respect from one’s colleagues diminish perceptions of loneliness and isolation. Being nurtured by a mentor or other colleagues further enhances support and role transition based on Strange and Cusson (2008).

Factor 4 in NPRTS (v. 2) concerns the development of communications and relations with team members. It is comprised of three indicators from NPRTS (v. 0). Even though the alpha reliability was only moderate at .67 for this factor in the earlier study’s sample, literature and content expertise support its inclusion in NPRTS (v. 2). These items (# 26-28) correlated well with the factor ranging from .44 to .54 in the first study. The ability to effectively communicate and develop strong relationships with fellow team members was described by new NPs as a positive element in role transition (Strange & Cusson, 2008). All three statements were reversed to a positive response. To increase the number of indicators and enhance the construct, three more items (29-31) were added to the revised NPRTS to capture the concepts of collaboration, conflict, and problem-solving patient care issues. According to the literature (Strange & Cusson), mastering soft skills in collaborating and communicating with team members fosters role transition as well as the ability to problem-solve complex patient care situations using a team approach. Factor 4 is named Communications and Relations.

In total, the revised scale instrument (NPRTS (v. 2)) encompasses four hypothesized factors comprised of 31 indicators. Of the original 31 indicators in the draft version (NPRTS (v.
0)), 20 were retained and 11 new ones were added. Restructuring of a number of indicators to positive statements supports improved clarity and consistency for the instrument respondents.

**Study Aim**

The purpose of this study was to assess the psychometric properties of the four-factor NP role transition model represented in NPRTS (v. 2).

**Methods**

**Research Design**

A non-experimental survey study was performed to determine how well the hypothesized four factors and associated indicators that comprise the NPRTS (v. 2) fit empirical data using a new sample of respondents. Descriptive statistics, CFA, EFA, reliability statistics, and item response analysis were used to analyze the sample data.

**Instrument**

The revised NPRTS (v. 2) was used to measure respondents’ perceptions of their role transition experience when first becoming a NP. As explained above, the NPRTS (v. 2) is a 31-item summative response instrument. A 5-point Likert type scale was used to measure the respondents’ level of agreement with each item. Low scores (1) indicate perception of less successful transition and high scores (5) indicate perception of more successful transition. Summary scores are calculated for each scale factor. Demographic data related to professional practice and education were also collected when the instrument was administered.

**Sample**

A convenience sample of NPs from a variety of specialties and practice settings who had practiced in the role for at least one year was assembled. Inclusion criteria for the participants consisted of (a) having experienced a role transition from NP student to a NP clinical practice position, (b) having worked in the NP role at least one year post graduation, (c) actively
practicing in their area of specialty, (d) willingness to complete and return the survey, and (e) ability to read and write English. NPs of all ethnic backgrounds, practice specialties, age, and both genders were eligible to participate.

**Procedure**

Respondents were recruited using a variety of methods to distribute the study information and survey via both hard copy and electronic means including: (a) links on approved U.S. based NP professional organization websites and listservs, (b) U.S.P.S. mailings to purchased member lists from professional NP organizations, (c) email messages sent by an organization to its members, (d) posting a flyer in a common area at the authors’ academic institution, and (e) fliers given to personal contacts.

Appropriate approvals from IRB and other oversight groups were obtained. All posting guidelines and approvals were followed and/or obtained from participating professional organizations and associations for member contact and posting recruitment purposes. Voluntary consent was confirmed by respondents mailing in a paper copy or by completing the online survey, hosted by the commercial vendor, FormSite. No risks or specific benefits for completing the study were identified.

A sample size ranging from 300 to 500 participants was sought to support the CFA and EFA methodologies. Although there is no absolute formula for an appropriate sample size, sources report a general range including: (a) at least 50 more than 8 times the number of variables (i.e., 298 for this study) according to Meyers, Gamst, and Guarino (2006); (b) up to at least 15 cases per measured variable (i.e., 465) as suggested by Stevens (2002); (c) a sample size minimum of 500 or more (Fan & Wang, 1998; Gonzalez & Griffin, 2001; West, Finch, & Curran, 1995); and (d) a ratio of 5 to 10 subjects per item up to 300 subjects (Tinsley & Tinsley, 1987).
Prospective participants had access to the information sheet and were instructed to complete the survey either using a hard copy or a web-based link. Being professionals, it was assumed that each responder would complete the survey only once, selecting the most convenient method. Mailed surveys with no identifiable information were returned to the principal investigator’s (PI) personal address and data from the web-based surveys were accessed and downloaded into an excel file by the PI. Data were then exported into SPSS (Version 22) and manually entered from the hard copies. Security measures were employed to protect original data and the resulting electronic datasets.

Data Analyses

Descriptive Statistics

Demographic characteristics of respondents were assessed using descriptive statistics including percentages, means, standard deviations, and minimum/maximum values.

Confirmatory Factor Analysis (CFA)

CFA was used to evaluate construct validity and to assess model fit of the NPRTS (v. 2). As a type of structural equation modeling, CFA tests measurement models that examine relationships between observed measures and latent variables or factors (Brown, 2006). Based on past evidence and theory, CFA allows the pre-specification of aspects of the factor model providing a strong foundation to examine construct validity, to explore the pattern of item-factor interrelationships, and to examine overall goodness of fit.

The development and evaluation process of the CFA in the present study was adopted from procedures described by Brown (2006), Bryne (2010), and Meyers, Gamst, and Guarino (2006) including: (a) model specification, (b) model identification, (c) model estimation, (d) model evaluation, and (e) model respecification. As suggested by Brown and Meyers, Gamst, and Guarino, data analytic procedures examined the acceptability of each CFA solution using
three approaches: assessment of the significance of the model’s parameter estimates, quantification of overall goodness of fit, and identification of localized areas of strain in the solution. CFA model fitting and model assessment were conducted using Amos software (Version 21). The estimation of model parameters was performed using maximum likelihood. Cases with missing data were excluded.

Factor coefficients in each CFA model were examined for statistical significance (alpha level of $p < .05$) and meaningfulness. A value of greater than .40 for each coefficient was used to establish achievement of meaningful (practical) significance as reported by Meyers, Gamst, and Guarino (2006).

Goodness of fit was examined using the chi-square statistic, but due to problems related to large sample size, several alternative indices commonly categorized as absolute, relative, and parsimonious were also employed (Brown, 2006; Meyers, Gamst, & Guarino, 2006). In total, four fit measures were used: (a) the chi-square, (b) the comparative fit index (CFI), (c) the standardized root mean residual (SRMR), and (d) the root mean square error of approximation (RMSEA). Goodness of fit is reflected through the chi-square statistic based on its magnitude relative to degrees of freedom and on its associated $p$-value. For the CFI, values greater than 0.95 are viewed as reflecting good fit (Bryne, 2010). A recommended threshold for SRMR is that its value should be less than .80 for acceptable fit (Bryne; Kline, 2010). When the RMSEA is used, a value of .06 or less is recommended as signifying acceptable model fit (Bryne).

To identify areas of misfit in the model solution, residuals and modification indices were calculated and examined. Based on the outcome of the data analysis, recommendations for model respecification were determined and subjected to additional rounds of estimation and evaluation.
Exploratory Factor Analysis Following CFA

Unsatisfactory results from CFA in this study suggested a need to reexamine the content and structure of the NPRTS (v. 2). An EFA was conducted to further explore the factor structure of NPRTS (v. 2) and to determine if an alternative model would exhibit better fit (Gorsuch, 1997). The EFA commenced with a principal axis factoring (PAF) (Fabrigar & Wegener, 2012; McCoach, Gable, & Madura, 2013). Maximum likelihood (ML) procedures were also used to examine the factor structure of the NPRTS (v. 2), as this method provides computations of goodness-of-fit indexes. Listwise deletion was employed as a means to manage missing data. The number of factors extracted was determined using Kaiser’s criterion (Kaiser, 1960). An examination of the Cattell (1966) scree test was performed to provide additional insight into factor selection. Initial and final communalities were assessed to determine the proportion of item variance explained by the set of extracted factors. High communalities indicate an acceptable level of variance; around .40 is considered a moderate threshold (McCoach, Gable, & Madura). Both orthogonal (varimax) and oblique (promax) rotation methods were explored. The oblique rotation “promax” was selected to assess the relationship between each factor and the indicator variables. Promax is recommended for large datasets (Fabrigar & Wegener).

In the EFA, items with loadings of .40 or greater were identified and listed in clusters. Items were examined for multiple loadings and retained for factor examination when the difference between items was greater than .20. In dual loadings having less than a .20 difference, a decision was made regarding final factor placement based on internal consistency/reliability findings and content meaningfulness. The oblique rotation provides additional evidence of inter-factor relationships by examining them for intercorrelations. If intercorrelations are greater than .40, researchers can consider collapsing the factors into one (Brown, 2006). After examining the
data, the factors were interpreted and named. The final factors defined an updated version of the NP transition scale, one that we label as NPRTS (v. 3).

**Reliability Testing and Item Analysis**

Internal consistency/reliability analyses were conducted to assess homogeneity of the items within the defined factors of NPRTS (v. 3). The results of these analyses were reported as Cronbach’s coefficient alpha. McCoach, Gable, and Madura (2013) suggest an acceptable level for the coefficient alpha to be greater than .70. Summary scores based on the items in factors of the final EFA model were calculated for each study participant. Correlation coefficients between the summary scores were determined to characterize relationships between factors.

Frequency tabulations were used to study the distributions of item responses. These distributions were summarized by calculating means and standard deviations.

**Results**

**Sample Demographics**

The demographics and characteristics of the NP respondents (n=427) are summarized in Table 2. All cases with missing data for any survey item were deleted resulting in the exclusion of 44 cases. The sample ranged in age from 24 to 70 years with a mean of 47.6 ±9.4. The NPs spent an average of 11.4 years (range 0-35) working in their specialty before becoming an NP. The total years of NP experience in the responding group ranged from 1 to 38 years with a mean of 9.6 ±7.5. Family practice (38.4%), neonatology (23.7%), and adult care (21.8%) were the most common specialties, with geriatrics and pediatrics (3.5% each) and women’s health (3.3%), the least. The majority was working in an outpatient setting at the time of the survey; 39.8% in a hospital based clinic and 29.5% in a private office. Over half (57.6%) held a bachelor’s degree as their basic nursing education.
Confirmatory Factor Analysis

CFA was conducted to evaluate validity and to assess model fit of the refined four-dimension NPRTS (v. 2). Data were examined for sampling adequacy. A Kaiser-Meyer-Olkin measure of 0.911 and a Bartlett test of sphericity ($\chi^2 = 7658.99$, $df = 465$, $p < .001$) indicated the data were suitable for CFA. However, the initial CFA model demonstrated a poor fit with the data ($\chi^2 = 2107.92$, $df = 428$, $p < .01$, $CFI = 0.77$, $RMSEA = .096$, and $SMRM = .099$).

Model Respecification

Model respecification procedures were conducted in an effort to improve the fit. The magnitudes of the path coefficients (i.e., factor loadings) were examined. All were found to be statistically significant. As this is considered a relatively low standard, the standardized path coefficients were also reviewed to determine which items reached the acceptable level of at least .40 or, preferably, .50 (McCoach, Gable & Madura, 2013). Item 15 was found to be out of the acceptable range with a path coefficient of .29. Items 27, 23, 24, and 26 were between the accepted thresholds, with path coefficients of .40, .43, .47, and .49, respectively. Thus, these items may not be good indicators of their assigned factors. Examination of the error variances revealed that all were statistical significant suggesting that the factor does not completely explain the item variance.

Factor correlations were examined for discriminant validity. A correlation value greater than .85 between two factors suggests that they may represent the same underlying construct (Bryne, 2010). Except for the Collegial Support-Communication and Relations pair (Factors 3 and 4), factor correlations ranged from .24 to .70 and were under the recommended threshold. The Collegial Support-Communication and Relations correlation (.84) indicated that these constructs may have overlapping meaning. The correlation between the constructs of Collegial Support and Understanding of the Role (Factors 3 and 2) was .70, which is under the threshold
but still relatively high. These findings infer that the Collegial Support factor is simultaneously
describing elements of both the Understanding of the Role and Communications and Relations
factors.

Modification indices (MI) were inspected insofar as high values suggest factor cross-
loadings and error covariances for some items. A review of the MIs for regression weights (i.e.,
factor loadings) revealed six values indicative of cross-loadings ranging from 21.65 to 59.97.
The implicated items were: (a) Items 27 and 31 - assigned to Communications and Relations,
cross-loaded to Comfort and Competence; (b) Items 21 and 23 - assigned to Collegial Support,
cross-loaded to Comfort and Competence; (c) Items 15 and 16 – assigned to Understanding of
the Role but with Item 15 cross-loaded to Comfort and Competence and Item 16 cross-loaded to
Communication and Relations. Item 27 and Item 23 stand apart by having the two highest cross-
loadings. It is also noted that five of these items cross-loaded on the Developing Comfort and
Competence Factor. Four pairs of error terms were found to have evidence of misspecification
(e10-e11, MI 203.73; e1-e2, MI 56.77; e28-e29, MI 44.80; e15-e16, MI 36.98). Error variances
can reflect a high degree of overlap in item content (Byrne, 2010) or systematic measurement
error derived from item or respondent characteristics (Aish & Joreskog, 1990).

Respecification of the model was implemented sequentially based on MI magnitudes,
with reassessment of fit indices upon each change. Despite multiple iterations of model
modification and re-fitting, only minimal improvement was noted in the fit indices. At the final
iteration, the $\chi^2$ was 831.84 ($\Delta=1186.08$) with 263 ($\Delta=165$) degrees of freedom and $p < .01$. The
CFI (0.91 [$\Delta= +0.14$]), RMSEA (.07 [$\Delta= -.026$]), and SMRM (.06 [$\Delta= -.04$]) indicated only
marginally good fit. Based on the model fit statistics and theoretical constructs, changes included
in the final model change were to covary six error term pairs (e1-2, e4-5, e5-7, e10-11, e17-18,
and e28-29) and to drop six items (15, 16, 21, 23, 27, and 31).
All four of the hypothesized constructs in NPRTS (v. 2) remained in the final CFA model. No measurable change in model fit was observed when the highly correlated (.84) dimensions of Collegial Support and Communication and Relations (Factors 3 and 4) were collapsed into one construct. Interestingly, in the final model, the correlation between these two constructs actually increased to .86. As the final model was relatively similar to the original, its theoretical basis remained intact, providing evidence that NPRTS (v. 2) reflects some aspects of the underlying latent constructs of NP role transition, but not fully or unambiguously.

**Exploratory Factor Analysis After CFA**

Because CFA produced, at best, a factor model with marginally adequate fit, an exploratory approach was taken to reanalyze the survey responses in order to investigate the latent factor structure of NPRTS (v. 2) in the present study’s sample. With a case to indicator ratio of 14, the study’s sample size (n = 427) was more than sufficient to support EFA (Tabachnick & Fidell, 2007). Sampling adequacy for EFA had been established prior to the CFA. Based on estimation via principal axis factoring, the communalities for items in NPRTS (v. 2) ranged from .23 to .72. Five items scored below the established minimum threshold of .40 (Items 15, 24, 26, 27, and 30). Another seven items scored between .40 and .50 (Items 5, 7, 16, 18, 21, 23, and 31), indicating relatively weak correlations with all other items.

In the unrotated EFA, five factors were identified based on the “eigenvalue-greater-than-1” (Kaiser) criterion. In combination, these factors accounted for 54% of the total variance. The first factor, alone, accounted for over half (31%) of the variance explained by the five factors. Visual examination of the scree plot indicated a leveling off after the fifth factor, suggesting an optimal factor solution between four and five.

Both orthogonal (varimax) and oblique (promax) rotation methods of the initial EFA solution were explored. Differences in the resulting analyses were minimal; however the oblique
rotation was selected for the final factor structure because it more effectively accounts for correlations among factors.

Five factors were identified when reviewing the initial pattern matrix from the oblique rotation. Modifications were sequentially introduced to this initial solution. In the first round of modifications, Items 15, 24, 26, 27, and 30 were eliminated due to low factor loadings and communalities < .40. In the re-executed solution, the total explained variance was 59% and five factors remained in the pattern matrix, but the scree plot suggested a three-factor model. In round two, Items 16 and 31 were removed due to low factor loadings and communalities, a change that resulted in four factors in the pattern matrix. For the same reasons, Items 21 and 23 were eliminated in round three. After these changes, a three factor model emerged. One item (#13) was cross-loading just over the accepted threshold of .40 on both factors and so was eliminated. In addition, Item 14 was excluded due to low communalities and low factor loading. At this time, a three factor pattern matrix remained with all items loading only a single factor. However, Item 19 was now under the threshold for communalities and factor loading, so was excluded. The three factor solution persisted. A final item (#12) was subsequently excluded due to low thresholds for communalities and factor loading. With this elimination, the factors loadings for other items in this factor increased.

The final structure representing the constructs of NP role transitions was a three factor model containing 18 of the original 31 items and explaining 59% of the total variance. These factors were labeled alphabetically (A, B, and C). The items related to each factor are shown in Table 3 together with their loadings from the final oblique rotation.

Reliability and Item Analysis

The resulting three factors were found to have high internal consistency with values of Cronbach’s alpha ranging from .88 to .92. (Table 3) Within these factors, the inter-item
correlations were high and there was no evidence that dropping an individual item would substantially improve the alpha coefficient. The correlations between summary scores for the factors were found to be low (A vs. B: $r = .32$, A vs. C: $r = .21$, and B vs. C: $r = .34$). Therefore, these three factors were judged to constitute the final distinct dimensions of the most current version of the NP role transition scale, a version that we denote as NPRTS (v. 3).

**Interpretation of the Final Factors and Model**

The factors included in NPRTS (v. 3) are very similar to the four hypothesized constructs in NPRTS (v. 2). The distributions of participant responses and mean scores for each item in relation to its NPRTS (v. 3) factor are listed in Table 4.

Factor A in the NPRTS (v. 3) includes all 9 items (#1-9) from NPRTS (v. 2). Mean scores for these items ranged from 2.78 ±1.02 to 3.14 ±1.01. The highest scoring was Item 6 (I felt confident as a nurse practitioner) and the lowest was Item 7 (My nurse practitioner program prepared me for a smooth role transition). All of the nine items in Factor A were included in the final model from the CFA analysis. The final EFA and CFA models each retained only indicators from the originally hypothesized construct for Factor 1 in NPRTS (v. 2). From this perspective, Factor A retains a similar name, that of Role Confidence, Comfort, and Competence, as the items indicate the level of perceived confidence, comfort, and competence in assuming the NP role. Item analyses for Factor A suggest that the responding NPs were ambivalent in their feelings of comfort, competence, and confidence during the first year of practice.

Factor B is named Collegial Relationships. It represents a mixture of the Collegial Support and Communications and Relations dimensions (Factors 3 and 4) from NPRTS (v. 2), as five and two items from each construct were retained and combined in the EFA, respectively. All seven retained items (#17, 18, 20, 22, 25, 28, and 29) were also part of the final CFA model. There was a high correlation (.86) in the final CFA model between Factors 3 and 4 from NPRTS.
While collapsing these two factors during the CFA respecification process did not elicit improved model fit, the theoretical analysis of EFA results supported combining their indicators to represent a newly named factor. In this combination, the concepts of support, collegiality, and professionalism are reinterpreted as relationships among colleagues. The EFA response means for each of the included items ranged from 3.49 ±1.04 to 3.94 ±.80, demonstrating relatively little variation across item responses. Overall, Factor B in NPRTS (v. 3) was the factor with the highest mean item scores among the survey respondents, emphasizing the contribution of collegial relationships in positive NP role transition.

Factor C is labeled Understanding the Role by Clients. It retains only two indicators (Items 10, 11), each of which had the lowest mean values (2.28 ±1.04 and 2.62 ±1.10, respectively) among the items included in NPRTS (v. 3). The final CFA model had retained Items 10 through 14 as components of Factor 2 (Understanding of the Role by Others) from NPRTS (v. 2). It is noted by Brown (2006) that factors represented by two or three indicators may be underdetermined and highly unstable across replications. Factor C was interpreted to describe the perception of understanding of the NP role by others, specifically by the public including patients and families. In this sample, the respondent scores reflect the perception of lower understanding of the NP role by clients, thus affecting a less desirable or more difficult transition for the new NP.

Discussion

The revision of the NPRTS resulted in a valid and reliable three factor eighteen item model representing the transition of newly graduated NPs during their first year of practice. Through a re-examination of the related literature, refinements of the NPRTS (v. 1) including reconstruction of the indicators and expansion of its underlying constructs were completed. A CFA including model respecifications resulted in a four factor 25 item structure that was only
moderately strong. Subsequent testing of the same sample data via EFA and internal consistency reliability produced the final NPRTS (v. 3). The factors in this final model are similar to those from the CFA and also bear similar resemblance to the hypothesized constructs of the draft (v. 0) and resulting version of the NPRTS (v. 1) from a previous study by the same authors (Cusson et. al, 2014). The final factors were interpreted as: Factor A – Role Confidence, Comfort, and Competence, Factor B - Collegial Relationships, and Factor C - Understanding of the Role by Clients.

The indicators comprising these final factors contribute to the overall understanding of NP role transition by specifically articulating many of the cited experiences founded on reduced levels of confidence, feelings of uncertainty, anxiety, and isolation (Brown & Olshansky, 1998; Kelly & Mathews, 2001; Spinks, 2008), role confusion (Nicholson, Burr, & Powell, 2005), poor relations and communication with providers (Kelly & Mathews), lack of educational preparation (Sullivan-Benz, et. al, 2010), lack of support (Cusson & Strange, 2008; Fleming & Carberry, 2011), and lack of formalized orientations (Mckay, 2006). Despite this abundance of data, there remains a lack of consensus regarding the definitive constructs and stages comprising NP role transition.

The findings from this study enhance the knowledge and add strength to the processes and strategies reported as facilitators of a successful transition. In general, many of the processes or stages of transition as described have commonalities with overlapping themes. One such model is summarized nicely by Fleming and Carberry (2011) who explain the role transition of novice NPs during their first year of practice in four categories: (1) finding a niche, (2) coping with the pressures, (3) feeling competent to do, and (4) internalizing the role. Factors related to patients, colleagues, and the clinic are included as key points that influence role transition according to Szanton , Mihaly, Alhusen, and Becker (2010). In addition, Kleinpell and Hravnak
(2005) describe strategies for success as communicating, maintaining competence, forming collaborative relationships, networking, and demonstrating practice outcomes. Although these and other studies suggest evidence regarding the influencing factors of NP role transition, little empirical studies with outcomes is available.

More structured work has been completed including the implementation of formalized NP orientation programs by Bahouth and Esposito-Herr (2009) and Yeager (2010) and a one year residency training model (Flinter, 2011) to address the wide variations in NP onboarding. Assessments to define outcomes of these programs primarily focus on the objective performance elements of the role. Bahouth and Esposito-Herr did include subjective strategies in their model consisting of socialization and group mentoring. Flinter instituted a reflective journaling activity to provide insight into the transition process and challenges. Although the effects of these programs supported a more positive transition experience than with those having minimal orientation structure, no consistent quantitative measure of role transition emerged. In the future, the NPRTS can be used to provide more quantitative assessments in these types of structured orientation programs offering a consistent means to measure key indicators of NP role transition.

The similarities in the identified constructs and indicators across the three versions of the NPRTS (v. 1, v. 2, and v. 3) add credence to transition theory as a complex multi-dimensional interaction that fosters passage from one state to another (Meleis, Sawyer, Im, Schumacher, & Messias, 2000). These interactions integrate both the nature of the transition and the facilitating and inhibiting conditions representing individual differences and reactions, which conjugate to form patterns of response; depicted as process and outcome indicators. The postulated factors and indicators representing NP role transition from this study are analogous with the process and outcome indicators of transition theory. Representing new skills and knowledge, these items can be used as a model in which to structure, assess, and intervene in the ongoing progress toward
mastery of the NP role. For example, the construct of developing confidence, comfort and competence relates to process indicator of developing confidence and coping; collegial support and relationships relates to the indicators of feeling connected, interacting, and location and being situated; understanding of the role relates to the interacting process indicator.

NPs are unique in that they frequently transition from an expert, experienced RN to the NP role after completing their professional education. This transition requires the reattainment of competence, credibility, and expertise through practice, mentoring, and role clarity as evidenced by several analyses; some of whom describe this process as “expert to novice” (Bahouth & Esposito-Herr, 2009; Cusson & Strange, 2008; Forbes & Jessup, 2004; Nicholson, Burr & Powell, 2005; Szanton, Mihaley, Alhusen, & Becker, 2010). Reality in these examples demonstrate a lack of awareness and preparation on the part of the new NPs not only that transition into the NP role will be challenging, but that their previous level of expert performance will not be sufficient in overcoming the challenges. Under this premise, the NP transition process takes an expert and asks them to be a novice again; that is to move to a new stage of development which then allows recognition of the limitations of existing knowledge and fosters the assumptions of responsibility of one’s own judgment and decisions (Roberts, Tabloski & Bova 1997). Implications for both students and new NPs are inherent in this situation as the NPRTS model may provide assistance in predicting and adjusting to the identified stresses (i.e., indicators) of role transition.

As essential contributing providers to health care, NPs embody an important role that enhances the quality of patient care and improves efficiencies within medical practices. Successful transition into the NP role is then imperative. The constructs resulting from the revision of the NPRTS support the accusation of role transition for new NPs. The strongest factor was that of confidence, comfort, and competence in the role. In practice, these concepts are often
highly inter-related and develop over time. It can be assumed that increased confidence in one’s ability and performance would foster forward movement through the process of transition. With the attainment of competence and comfort as well as confidence in one’s role, the ease of transition increases. In this study, the respondents indicated a moderate level of confidence, comfort, and competence in their roles. The Factor depicting collegial relationships articulates the importance of feeling supported and respected by colleagues and having a collaborative working relationship with physicians and other providers. A positive response to these indicators on the NPRTS would then signify a successful transition experience. This factor saw the highest ratings by the respondent NPs indicating good relationships with colleagues. The final factor represents the understanding the role by clients. Although this was the weakest of the factors in this analysis, it carries importance in developing an identity and perceived value of the NP role with patients and families. An accurate understanding of the NP role is vital to its success in providing quality healthcare. Patients and family members seek not only qualified providers in pursuit of their health and happiness, but a need to trust in those individuals as well. This can create challenges in new NP’s transition, if a sense of acceptance is not perceived from their clients or others. In this current study, the respondents indicated low levels of role understanding by the public and their patients and families, which may rob time from care management due to the need for addition explanations and justifications of the NP role.

The results of this paper’s analyses provide a NP role transition scale that, while probably not complete in terms of content or construct validity, can be used to evaluate progress of new NPs and can enable their clinical mentors to identify and intervene in problem areas before undue stress and dissatisfaction arise. NPRTS (v. 3) provides an objective, quantitative assessment instrument that can support implementation of current recommendations for formalized orientation programs and for strategies that foster NP role transition success. The
NPRTS (v. 3) can also be used in the academic setting to facilitate awareness and discussion of role transition concepts and to prepare aspiring NPs to function well in their new role.

**Limitations**

The analysis of the NPRTS (v. 2) was conducted as a second step in objectively establishing the structure of NP role transition during the first year of practice. Twenty indicators were drawn from the draft version (NPRTS (v. 0)), 16 of which had been retained after the EFA that resulted in NPRTS (v. 1). The addition of 11 new indicators to NPRTS (v. 2) was intended to increase the scope of items for each of the hypothesized constructs and to better represent findings from content analyses and expert judgment. As only four of the newly added indicators performed well and were carried over into NPRTS (v. 3), it may have been unnecessary to add so many.

Other limitations such as a large sample size (n=427) may also have contributed to the poor model fit in evaluation of NPRTS (v. 2) CFA. However, there is not consensus on an exact specification for the ratio of respondents per indicator. Among the respondents in the current study’s sample, a large proportion (82%) represented three specialty areas of practice (family practice, neonatology, adult medicine), while other specialties were under-represented. These proportions, as compared to the distribution of practice areas in the overall NP population of the United States, are in line for family practice and adult medicine; however, the neonatal specialty is over-represented. The outpatient practice setting is also over-represented (82%) in the sample. This lack of sample representativeness could affect both the internal and external validity of the project’s findings. Finally, the “mid-to-late” career status of many respondents (an average of 11 years of pre-NP professional experience and an average of 10 years post-NP experience) could impact their ability to remember specific details of the role transition experience. A more suitable sample would include NPs who are only a few years beyond their initial transition.
Conclusion

The NP role involves a high level of responsibility and requires a combination of advanced clinical skills, sophisticated critical thinking, political savvy and complex decision-making (Ball & Cox, 2004; Hoffman, Happ, Scharfenbert, DiVirgilio-Thomas, Tasota, 2004; Kelly & Mathews, 2001). A faltered, delayed transition into the NP role may hinder the development of these essential skills, potentially compromising patient care. Three main constructs comprised of 18 indicators representing NP role transition during the first year of practice emerged from the EFA analysis (NPRTS (v. 3)) of the revised NPRTS (v. 2). These include Confidence, Comfort and Competence in the Role, Collegial Relationships, and Understanding of the Role by Clients. The strongest factor is related to the development of confidence, comfort, and competence in the NP role, which has carried through from the original NPRTS (v. 0) and through two rounds of revisions based on factor analyses.

We have also seen that the transition process for a NP is unique in that a new NP has been an experienced and/or expert RN (in most cases), but is introduced into a foreign environment to begin as a novice again. To prevent a dissatisfying or delayed transition, the key influencing factors should be identified and assessed at multiple stages of the transition process. Only with early identification can appropriate interventions be introduced to help facilitate improvements in transition. The factors and indictors of NPRTS (v. 3) provide viable measures of NP role transition during the first year of practice. Because NPRTS (v. 3) is the product of EFA, a confirmatory analysis with newly sampled data is recommended as the next phase of instrument development. Based on additional theoretical and empirical evidence, modifications to this latest version of the NPRTS may also be warranted.
References


*Journal of Nursing Education, 40,* 156-162.


*Journal of Trauma Nursing, 13,* 102-104.


Table 1

*Revised NRTS (v. 2) – Item String with Corresponding Item Number*

| Factor 1. Developing Comfort and Competence | 1 | I was very comfortable managing my patients. |
|                                           | 2 | I felt very competent managing my patient case load. |
|                                           | 3 | I was comfortable in my role. |
|                                           | 4 | I felt it was easy to transition from nurse to nurse practitioner. |
|                                           | 5 | I felt I had the skills to deal with role transition. |
|                                           | 6 | I felt confident as a nurse practitioner. |
|                                           | 7 | My nurse practitioner program prepared me for a smooth role transition. |
|                                           | 8 | I was able to complete my responsibilities in the allotted time because I was comfortable with my skills. |
|                                           | 9 | I had confidence in my decision making. |

| Factor 2. Understanding of the Role by Others | 10 | My nurse practitioner role was very well understood by the public. |
|                                             | 11 | My nurse practitioner role was very well understood by my patients and families. |
|                                             | 12 | My nurse practitioner role was very well understood by management. |
|                                             | 13 | My nurse practitioner role was very well understood by my physician colleagues. |
|                                             | 14 | My nurse practitioner role was very well understood by my nurse colleagues. |
|                                             | 15 | I felt that my patients trusted me. |
|                                             | 16 | I was accepted as a provider by other healthcare professionals. |

| Factor 3. Collegial Support | 17 | I felt that I got a lot of support. |
|                            | 18 | I felt that I was supported by management. |
|                            | 19 | I felt that I was supported by my nursing colleagues. |
|                            | 20 | I felt that I was supported by my physician colleagues. |
|                            | 21 | My feelings of isolation were minimal. |
|                            | 22 | I was treated as a professional by my colleagues. |
|                            | 23 | I felt that I brought value to the team. |
|                            | 24 | My mentors/preceptors were nurturing. |
|                            | 25 | I was respected by other healthcare professionals. |

| Factor 4. Communications and Relations | 26 | I felt that I was a visible provider on the healthcare team. |
|                                       | 27 | I had minimal anxiety when communicating with other healthcare providers. |
|                                       | 28 | I felt that I had a good relationship with the physicians. |
|                                       | 29 | The physician staff worked collaboratively with me. |
|                                       | 30 | I felt I had minimal conflict with other healthcare providers. |
|                                       | 31 | I felt that I contributed to problem-solving patient care issues. |
### Table 2

**Revised NPRTS (v. 2) Respondent Demographic Information (N = 427)**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Lowest</th>
<th>Highest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>47.6</td>
<td>9.4</td>
<td>24</td>
<td>70</td>
</tr>
<tr>
<td>Work in specialty prior to NP role (years)</td>
<td>11.4</td>
<td>8.7</td>
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<td>35</td>
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<tr>
<td>NP experience (years)</td>
<td>9.6</td>
<td>7.5</td>
<td>1</td>
<td>38</td>
</tr>
</tbody>
</table>

**Specialty Area of Practice (# respondents/%)**

<table>
<thead>
<tr>
<th>Specialty Area of Practice</th>
<th># Respondents</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family practice</td>
<td>164</td>
<td>38.4</td>
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<tr>
<td>Neonatology</td>
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<td>23.7</td>
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<tr>
<td>Adult</td>
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<tr>
<td>Geriatrics</td>
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<td>3.5</td>
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<tr>
<td>Pediatrics</td>
<td>15</td>
<td>3.5</td>
</tr>
<tr>
<td>Women’s health</td>
<td>14</td>
<td>3.3</td>
</tr>
<tr>
<td>Other</td>
<td>25</td>
<td>5.9</td>
</tr>
</tbody>
</table>

**Current Practice Setting (# respondents/%)**

<table>
<thead>
<tr>
<th>Practice Setting</th>
<th># Respondents</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital (outpatient/clinic)</td>
<td>170</td>
<td>39.8</td>
</tr>
<tr>
<td>Private office</td>
<td>126</td>
<td>29.6</td>
</tr>
<tr>
<td>Hospital (acute/critical care)</td>
<td>60</td>
<td>14.1</td>
</tr>
<tr>
<td>Community (public/school health)</td>
<td>27</td>
<td>6.3</td>
</tr>
<tr>
<td>Long term care</td>
<td>16</td>
<td>3.7</td>
</tr>
<tr>
<td>Other</td>
<td>28</td>
<td>6.5</td>
</tr>
</tbody>
</table>

**Basic Nursing Education (# respondents/%)**

<table>
<thead>
<tr>
<th>Education Level</th>
<th># Respondents</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diploma</td>
<td>66</td>
<td>15.5</td>
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<tr>
<td>Associate degree</td>
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<td>22.7</td>
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<tr>
<td>Bachelor degree</td>
<td>246</td>
<td>57.6</td>
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<tr>
<td>Master degree</td>
<td>18</td>
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Table 3

*Exploratory Factor Analysis (PAF, Promax): Factors, Item Loadings, Chronbach’s Alpha for the NPRTS (v. 3)*

<table>
<thead>
<tr>
<th>Factor</th>
<th>A</th>
<th>B</th>
<th>C</th>
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</thead>
<tbody>
<tr>
<td>Chronbach’s Alpha</td>
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<td>.89</td>
<td>.88</td>
</tr>
<tr>
<td>Item 6</td>
<td>.862</td>
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<td></td>
</tr>
<tr>
<td>Item 1</td>
<td>.859</td>
<td></td>
<td></td>
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<tr>
<td>Item 2</td>
<td>.838</td>
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<td>Item 3</td>
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<td>Item 8</td>
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<tr>
<td>Item 9</td>
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<td></td>
</tr>
<tr>
<td>Item 4</td>
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<td></td>
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<tr>
<td>Item 5</td>
<td>.692</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 7</td>
<td>.594</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 20</td>
<td>.836</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 29</td>
<td>.870</td>
<td></td>
<td></td>
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<tr>
<td>Item 28</td>
<td>.764</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 22</td>
<td>.757</td>
<td></td>
<td></td>
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<tr>
<td>Item 17</td>
<td>.739</td>
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<td>Item 25</td>
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<td>Item 18</td>
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<td>Item 10</td>
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<td>.875</td>
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<td>Item 11</td>
<td></td>
<td>.868</td>
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Table 4

*Item Analysis and Descriptive Statistics for the NPRTS (v. 3)*

<table>
<thead>
<tr>
<th>Dimension/Item</th>
<th>Response Percentage</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor A – Role Confidence, Comfort, and Competence</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 I felt confident as a nurse practitioner.</td>
<td>6 37 22 30 5</td>
<td>2.91</td>
<td>1.05</td>
</tr>
<tr>
<td>1 I was very comfortable managing my patients.</td>
<td>7 43 20 27 3</td>
<td>2.78</td>
<td>1.02</td>
</tr>
<tr>
<td>2 I felt very competent managing my patient case load.</td>
<td>7 38 21 32 3</td>
<td>2.87</td>
<td>1.03</td>
</tr>
<tr>
<td>3 I was comfortable in my role.</td>
<td>4 34 20 38 5</td>
<td>3.05</td>
<td>1.03</td>
</tr>
<tr>
<td>8 I was able to complete my responsibilities in the allotted time because I was comfortable with my skills.</td>
<td>4 28 24 38 6</td>
<td>3.14</td>
<td>1.01</td>
</tr>
<tr>
<td>9 I had confidence in my decision making.</td>
<td>4 32 22 36 6</td>
<td>3.09</td>
<td>1.03</td>
</tr>
<tr>
<td>4 I felt it was easy to transition from nurse to nurse practitioner.</td>
<td>9 36 20 30 5</td>
<td>2.87</td>
<td>1.10</td>
</tr>
<tr>
<td>5 I felt I had the skills to deal with role transition.</td>
<td>3 18 19 49 11</td>
<td>3.47</td>
<td>1.00</td>
</tr>
<tr>
<td>7 My nurse practitioner program prepared me for a smooth role transition.</td>
<td>8 25 29 31 7</td>
<td>3.04</td>
<td>1.08</td>
</tr>
<tr>
<td><strong>Factor B – Collegial Relationships</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 I felt that I was supported by my physician colleagues.</td>
<td>2 10 17 46 26</td>
<td>3.83</td>
<td>0.99</td>
</tr>
<tr>
<td>29 The physician staff worked collaboratively with me.</td>
<td>1 6 14 56 22</td>
<td>3.93</td>
<td>0.84</td>
</tr>
<tr>
<td>28 I felt that I had a good relationship with the physicians.</td>
<td>1 5 14 59 21</td>
<td>3.94</td>
<td>0.80</td>
</tr>
<tr>
<td>22 I was treated as a professional by my colleagues.</td>
<td>1 7 15 59 18</td>
<td>3.85</td>
<td>0.85</td>
</tr>
<tr>
<td>17 I felt I got a lot of support.</td>
<td>4 15 19 45 17</td>
<td>3.57</td>
<td>1.06</td>
</tr>
<tr>
<td>25 I was respected by other healthcare professionals.</td>
<td>3 18 2 43 15</td>
<td>3.49</td>
<td>1.04</td>
</tr>
<tr>
<td>18 I felt that I was supported by management.</td>
<td>1 7 21 56 15</td>
<td>3.78</td>
<td>0.80</td>
</tr>
<tr>
<td><strong>Factor C – Understanding of Role by Clients</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 My nurse practitioner role was very well understood by the public.</td>
<td>23 45 16 14 3</td>
<td>2.28</td>
<td>1.04</td>
</tr>
<tr>
<td>11 My nurse practitioner role was very well understood by my patients and families.</td>
<td>15 40 17 25 3</td>
<td>2.62</td>
<td>1.10</td>
</tr>
</tbody>
</table>

Rating scale: 1 = *Strongly Disagree*; 2 = *Disagree*; 3 = *Neither Disagree or Agree*; 4 = *Agree*; 5 = *Strongly Agree*
Figure 1. Revised NPRTS (v. 2) final CFA model: Standardized factor loadings, factor correlations, and error terms.
Chapter 5
Discussion and Review

The challenges and distress encountered by newly graduated NPs as they transition into practice is well established in the literature (Bosch, 2000; Brown & Draye, 2003; Fleming & Carberry, 2011; Szanton, Mihaly, Alhusen, & Becker, 2010) and supported by the qualitative findings of the study presented within this dissertation (Cusson & Strange, 2008). This work and others have begun to address the need for the identification of factors that influence and strategies that support successful NP role transition (Flinter, 2011; McKay, 2006; Yeager, 2010). There is early evidence that the implementation of a structured orientation program or an NP residency training fosters a smooth, positive transition (Bahouth & Esposito-Herr, 2009; Flinter, 2011; Kleinpell & Hravnak, 2005; Szanton, Mihaley, Alhusen, & Becker, 2010). However, there is limited testing regarding the degree to which these factors and strategies can be reliably measured to assess the degree of transition in multiple settings. The goal of the work presented in these three studies as part of a dissertation was to not only add to the body of knowledge encompassing NP role transition, but to develop a quantitative measure that includes the factors and indicators that define NP role transition. A reliable and valid measure would then be able to assist educators, mentors, and NPs themselves in understanding the elements of role transition and enable early recognition and intervention to support an enhanced transition experience.

The NPRTS has undergone development, revision and validation testing using factor analyses with two independent samples. These analyses have resulted in the current version of the NPRTS (v. 3), which is comprised of three factors including 18 indicators that describe NP role transition in the first year of practice and are named as Factor 1 – Role Confidence, Comfort, and Competence; Factor 2 – Collegial Relationships; and Factor 3 – Understanding of the Role by Clients.
The resulting named factors fit well in the conceptual framework of transition theory (Meleise, Sawyer, Im, Messias, and Shumacher, 2000) that served as a platform for these instrument development studies. As described by these authors, transition theory focuses on individuals experiencing a life transition related most often to changes in health status. The ensuing transition can be viewed as a product of the individual’s experiences and responses to the change. In this theory, transitions unfold over time and identify process indicators that move one either in the direction of outcomes of mastery or toward vulnerability and risk. The resulting factors of the NPRTS can be interpreted to serve as the process indicators in a NP role transition model.

The role confidence, comfort and competence construct from the NPRTS (v. 3) is similar to the developing confidence and coping process indicator in that individuals undergoing a transition develop confidence in their knowledge and understanding of a situation; and, with this confidence demonstrate improved ability to cope with and adapt to the change. The construct related to collegial relationships has similarities to the feeling connected process indicator, in which maintaining old connections and making new contacts during the transition phase are important for positive movement toward the change. The process indicator of interacting and location and being situated share commonalities with both the NPRTS constructs of understanding of the role by clients and collegial relationships. These indicators describe the creation of new meanings and perceptions related to the transition. In developing new meanings and perceptions, movement from an old (previous) to a newly situated embedded self is viewed as a positive component of healthy transitions. Embracing newly developed interactions with both clients and colleagues, new NPs develop relationships that can support and understand the impact and value of their role.
With each of the two analyses, similar constructs were identified with a total of 14 indicators retained from the original draft NPRTS (v. 0) in the final version. This version of the NPRTS (v. 3) was judged to be reliable and valid based on the results of an EFA. However, as noted a CFA analysis on the revised model was not supported as a good fit from the data. The strongest construct was that of the development of confidence, comfort, and competence in the role. The same eight indicators consistently carried through in each stage of instrument development. There exists, therefore, steady support for a strong relationship between these indicators and the Role Confidence, Comfort and Competence construct. This factor represents new NPs’ level of perception related to confidence and comfort in the role as well as the ability to competently perform. For success, it is essential that feelings surrounding a lack of confidence, comfort, and competence be identified quickly in order to adjust the transition trajectory and implement meaningful interventions.

The remaining two constructs are also supported throughout the NPRTS development, but with slightly less rigor. The second factor revealed from these studies embodies the concepts of collegiality, support, and relationship articulating the need to feel there is a developed, strong working collaborative relationship with professionals and other work colleagues, especially physician mentors and supervisors. If NPs perceive a strong working relationship, they may then be more likely to move through the transition process with less barriers and stress, which will ultimately optimize patient care. In the analysis, the resulting construct was comprised of seven indicators; four of which carried through from the original draft version (v. 0) and three of the new indicators added to the NPRTS (v.1).

The third factor, Understanding of the Role by Others, remains a valid emerging construct in the final NPRTS (v. 3); however, the focus of that understanding seems to stem from the patients and families in the final NPRTS (v. 3) versus all parties involved in the NP role as
initially hypothesized. This factor is comprised of only two indicators, which was included in the original hypothesized NPRTS (v. 0) and carried through each version of the scale’s development. Although this factor may benefit from additional revision in a future model, it is interpreted as representing the need for a NP’s to perceive that their patients have an understanding of the role in order to feel they are providing value and being effective in providing care. Feelings of poor understanding of the role from clients could impact the ease of transition.

The role of the NP is vital to the success of the current and future healthcare delivery system. In spite of the current established standards for education and patient care, a continued struggle with the actual role transition from RN to NP remains for many. The findings of the NPRTS development and analyses as well as the qualitative study of NNPs discussed here impart evidence of congruency with current transition theory (Bridges, 1980; Meleis, 1997) and embrace the phenomenon of retention of expert status in the NP role. Transition has been defined as the transformation of self, which is the process by which a NP moves from being an expert RN to a novice NP. The goal is to support a smooth, complete transition with limited barriers and undue stress. The NPRTS may be used as a beginning measurement model of NP role transition, with applications to both academia and clinical practice.

Limitations

The NP samples in both studies related to instrument development may be limited by the nature of the variety of specialties and practice settings and the extended lapse of time since role transition had been experienced. In the recruitment of these samples, the inclusion criteria encouraged any NP regardless of specialty or practice setting to participate. Although this strategy may have increased the overall sample size, the variation and over-representation of some specialties may have skewed the results. It is unknown if or how much the transition experience varies across specialties and/or practice settings. In addition, the length of time since
the actual role transition was experienced may have altered the respondents’ perception and recollection. In study 1 the average years of NP experience equaled 9.2 years and 11.2 years in study 3, which means nearly 8-10 years had lapsed since the NPs had completed their first year in the NP role. However, regardless of time lapse, NPs in multiple studies were able to vividly describe their role transition experience (Brown & Olshansky, 1997; Cusson & Strange, 2008, Heitz, Steiner, Bruman, 2004). In addition, the large sample size (n=427) in study 3 may have contributed to the poor model fit in the CFA of NPRTS (v. 2) due to the effect on the chi-square value. As the value of the model chi-square increases, the fit of an overidentified model becomes increasingly worse. However, there is no consensus on an exact specification for the ratio of respondents per indicator.

Results from study 2, the qualitative analysis of the NNP’s role transition experience, were used to enhance the NPRTS by adding new items (indicators) to the scale and were then subsequently applied to the general NP populous in study 3. Although these experiences were congruent with others reported in the literature related to a variety of NP specialties, it is not clear what factors, if any, may have been specific to the neonatal specialty and practice settings.

The addition of 11 new items in the revised NPRTS (v. 2) may have been premature. The intent at the time was to increase the scope of the items for each of the hypothesized constructs and to better represent findings from content analysis and expert judgment. As only four of the newly added indicators performed well and were carried over into NPRTS (v. 3), it may have been unnecessary to add so many.

**Implications for Practice**

The goal of this series of research studies was to better understand the constructs and indicators of NP role transition during the first year of practice and to develop a reliable and valid instrument that could quantify the resulting model. The results reveal strong and consistent
evidence of the existence of three constructs representative of NP role transition namely (1) development of confidence, comfort, and competence in the role, (2) collegial relationships, and (3) understanding of the role by clients. These constructs and their defining indicators can be used as a beginning model to inform both academic and practice settings. In the educational preparation of NPs, it is recommended that open discussions regarding the realities of role transition be incorporated into the current curriculum (Nicholson, Burr, & Powell, 2005) as means to increase awareness and improve understanding. Additionally, it is recommended that structured orientation programs be implemented in the practice setting for all new NPs, which incorporate the assessment of key facilitators and inhibitors related to the progression and successful transition into the role (Bahouth & Esposito-Herr, 2009; Flinter, 2011; Kleinpell & Hravnak, 2005; Szanton, Mihaley, Alhusen, & Becker, 2010). The NPRTS begins to fill the gap in both of these situations. It can be quickly and easily completed, scored, and interpreted as means to assess current role transition progress and identify potential or actual barriers early and ongoing in the transition process. Early identification of barriers or difficulties enables implementation of interventions that can be designed to move the NP toward the mastery level. Ease and timeliness of NP role transition is assumed to increase the quality, efficiency, and satisfaction of new NPs, their mentors and colleagues, as well as their clients.

Implications for Future Research

Because the latest version of the NPRTS (v. 3) developed during the third study’s analyses results from EFA, an additional round of sampling and CFA will be necessary before finalizing the instrument’s content. It may also be advantageous to examine the NPRTS individually with different groups of NP specialties and practices settings to ascertain variations. In addition, using a sample in which the respondents have recently completed their role transition may improve the accuracy of responses as less time has elapsed. The ongoing development and
analysis of structured orientation programs to facilitate transition into the NP role is needed to advance the knowledge base and theories surrounding the phenomenon of NP role transition.
References


