APRNs' Confidence to Prescribe

by

Holli J. Brousseau

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Abstract

Prescribing medications is an integral part of the Nurse Practitioner (NP) role. Review of the literature revealed a considerable amount of evidenced-based practice recommendations related to prescribing with accuracy. Petty (2012) suggested using evidence-based data to drive prescribing decisions; knowing the patient's medications; involving the patient in the decision making process; being knowledgeable about drug interactions; remembering that every patient is unique and listening to their story; avoiding polypharmacy; and reviewing the need for continuing a medication and monitoring appropriate labs/diagnostics related to usage. The purpose of this study was to explore the confidence level of the NP related to prescribing medications. The survey used to examine prescribing confidence levels was a 10-question survey entitled *Measuring Confidence*. This study used a quantitative descriptive design with one open ended question. The sample included a convenience sample of NPs from one organization. Results revealed that overall NPs were confident in prescribing practices. Four areas of low confidence included adjusting medications prescribed by other providers, recommendations for alternative therapies, identifying potential drug interactions, and identifying adverse drug interactions. The practitioners identified the need and desire for further education related to prescribing. Recommendations and implications for practice are discussed.

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Statement of the Problem

Midlevel practitioners have become essential in today's acute care health system. A midlevel practitioner is defined as a state licensed individual, and may include a physician assistant (PA) or an advanced practice registered nurse (APRN) (APRN Joint Dialogue Group, 2008)). According to the Consensus Model for APRN Legislation (APRN Joint Dialogue Group, 2008), there are four APRN roles, including nurse practitioner (NP), midwife, clinical nurse specialist (CNS), and certified nurse anesthetist (CRNA). The model supports licensure, accreditation, certification, and education as the corner stone for APRN practice. A cornerstone of the Consensus Model is that all APRNs across the nation practice within their full scope, and that there will be commonality across the states to promote adequately prepared practitioners.

Advanced practice registered nurse practice must include prescriptive privileges in order to manage the whole patient in a comprehensive way (Chapell, Marquis, Ward, & Kiehne, 2010; Courtenay & Carey, 2007; Milligan, 2012; Scrafton, McKinnon, & Kane, 2012). The scope of practice for the APRN, specifically related to the authority to prescribe, varies among the states. According to the American Association of Nurse Practitioners (NP) (n.d.), 17 states allow full practice for the NP, including Rhode Island.

Educational institutions need to adequately prepare practitioners with the required pharmacology, pathophysiology, and physical assessment classes. This is mandated by the accrediting bodies and reaffirmed by the Consensus Model legislation. Training should include hands on preparation in the prescribing area. Continuing education needs

to be mandated, as it is in RI, in order to expand and reinforce knowledge related to pharmacology for NPs to apply in the practice setting. In RI, the State Board of Nursing is the body that grants the APRNs the privilege to prescribe (RI State Board of Nursing 5-34-45). The application requires 30 hours of education in pharmacology three years immediately prior to the date of application. Also required is a completed RI uniformed controlled substance act registration (CSR), which allows the practitioner to prescribe controlled substances and provides a DEA number from the federal government. Upon hire, the new NP's orientation should include the prescriptive piece related to proper prescribing including information required on a prescription and competence (Scrafton et al., 2012).

In order to be an effective prescriber, the APRN must also be confident in his/her ability to safely and effectively prescribe. Much of the literature regarding prescribing practices and prescribing confidence refers to physician practice. A potential problem is that the level of confidence in prescribing medications has not been well studied as it relates to NPs, and there is some suggestion in the literature that prescribing confidence may be variable and even low (Scrafton et al., 2012).

The purpose of this study was to explore the level of confidence with prescribing in currently practicing NPs. Advanced practice with prescribing privilege's is an essential component with the health care system today. The confidence in which the nurse feels capable of assuming this responsibility is a key factor in clinical decision-making. Understanding the degree of confidence amongst the nurse practitioner population can help to direct further educational needs and practice refinement.

Literature Review

A literature review was conducted within several databases (Cumulative Index to Nursing and Allied Health Literature [CINAHL]; Pub Med; and Up-to-Date) using the keywords nurse practitioner, midlevel provider, prescribing practices, practitioners, regulating of prescribing, advanced practice nurse and prescribing, confidence level of prescribers, confidence level of nurse practitioners, and The American Academy of Nurse Practitioners (AANP). In addition, the Centers for Disease Control and Prevention (CDC) website was consulted.

Introduction: Prescriber Confidence Level

The level of confidence that a provider has to perform a particular task is subjective. Confidence is a feeling or belief that you can do something well or succeed at something (Klein & Kaplan, 2010). Confidence related to prescribing comes from the prescriber believing that he/she is competent to prescribe. Competence is an individual's overall ability whereas competency is an outcome measure to a specific skill such as prescribing (Klein & Kaplan). Increased confidence comes with experience and knowledge in the particular practice area and increases over time and familiarization with the medications being prescribed (Ross, 2012). According to Cashin, Stasa, Dunn, Pont, and Buckley(2014), NPs are reasonably confident about certain aspects of their prescribing practice, namely educating clients and monitoring responses to medications. They are less confident about adjusting or discontinuing medications another health care

professional prescribed for the client. Possibly lack of experience and education is contributors to this lack of confidence. Cashin et al. used a 10 question survey that will also be used in this research student's survey. It was designed to document various aspects of prescribing practices of the NP and the confidence level. It was an online survey that had an invitation to the link to participate in the survey in a mass emailing to all endorsed NP members of the ACNP. There were 251 total members and 209 completed the questionnaire survey. Courtenay (2007) and Scrafton et al. (2012) reported that confidence levels of midlevel practitioners are variable. The authors surveyed 34 NP's who met the inclusion criteria of being a prescribing NP for at least one year. Fifty three percent of the NPs surveyed (n = 17) reported that they felt confident to prescribe in their new role. A convenience sample of nurse prescribers was interviewed using a single broad question for them to elaborate on their experience in prescribing. The participants reported key concerns related to the education programs attended, they wanted more of them and on specific drug classes, or new drugs on the market and consistently reported that the level of pharmacology education was low and did not meet their expectations.

Overall, four themes were identified from the literature that can potentially contribute to accurate and safe prescribing: education; legislation and licensing; functional prescribing practices; and access to care which can impact patient satisfaction. Literature related to these four themes will be presented next.

Education

Education has been determined to be a significant factor in the confidence level of the practitioner (Ross, 2012). Both mid-level practitioners who prescribe and those choosing not to prescribe have identified a lack in education related to how to prescribe and have suggested three options to increase the practitioner's knowledge: formal academic education; workforce provided seminars; and self-initiated continuing education options (Scrafton et al., 2012).

In 2009-2010, the American Academy of Nurse Practitioners (AANP) conducted a national survey, the purpose of which was to provide an accurate picture of the NP work force. The overall intent was to collect data on a wide range of variables related to the NP such as education, prescribing practices, compensation, and liability experience. There were 13,562 anonymous surveys returned, which represented approximately 10% of practicing NPs. Results indicated that the education of the NP in preparation for practice was obtained in one of three ways: 74.3% (n = 10,035) earned a master's degree, while 15.7% (n = 2,169) had attended a postmaster's NP program and 0.9% (n = 1,228) were prepared through a Doctorate of Nursing (DNP) program (Goolsby, 2011). All participants reported being educated in different ways and all identified the common theme that continued education is needed before prescribing. Clinical pharmacology was an area NPs identified as essential, and on-going education related to all medications was recommended. This was thought to be especially important given the ever growing and changing market, with new medications being frequently released.

Chapell et al. (2010) conducted an exploratory, descriptive research study that included 128 participants. All were certified NPs, with 109 (85%) actually choosing to prescribe; of those, only 70% (n = 90) had a Drug Enforcement Agency (DEA) number for controlled substances. The questions were sent out via survey monkey to the members of the Pennsylvania Coalition of Nurse Practitioners. Results demonstrated that enhancing graduate nursing education, especially in clinical pharmacology, resulted in practitioner satisfaction and adaptation of available prescribing privileges. Enhancing education programs at the university or college level should include incorporating prescriptive privileges as an essential function of the NP. These should be threaded throughout the educational experience, and include clinical time in the practice of prescribing. Both aspects were identified as needed for the NP to function at the full scope of practice.

Scrafton et al. (2012) conducted a cross sectional qualitative convenience sample of NPs who prescribed. The purpose of the study was to explore the experiences of nurse prescribers to establish how prescribing was employed and what were the perceived benefits and disadvantages. The authors employed a single broad question to elaborate on what the meaning of experience for that individual was and to facilitate a deeper understanding of the experiences, thoughts, and emotions of the participants that promoted elaboration of respondents from the 34 participating NPs. The NPs reported that there was a lack of focus in formal education on prescribing outside of hospitals, and also noted that education that was provided was significantly limited in terms of pharmacology information and the practice of prescribing. Advanced practice registered

nurses in ambulatory care (outside of hospitals) indicated that NP education is directly connected to patient safety and practitioner confidence. They believed that there was a wider range of drugs prescribed in the clinics or community as compared to in the hospitals.

Three main themes emerged from the data: motivation to prescribe; benefits and limitations to prescribing; and continuing professional education and prescribing in practice. Motivation to prescribe by the NP was identified as potentially enhancing the delivery of comprehensive care. The benefits and limitations to prescribing were identified: it was thought that additional pharmacology education would be a benefit and that the different education of practitioners was a limitation. It was noted that midlevel practitioners are educated with different degrees and come from different backgrounds. Continuing education and prescribing in practice were believed to be a patient satisfier and also to increase patient safety. It was concluded that prescribing was a valuable part of the scope of practice and it came with accountability.

After the NP leaves the formal education venue, the burden of maintaining prescribing competencies continues. Continuing education is a mandate for licensure renewal and some states have dictated that a portion of the continuing education must be completed in pharmacology. The requirement of continuing education is not only mandated by the individual states, but the American Nurses Credentialing Center (ANCC) also requires continuing education to maintain certification (Chapell et al., 2010). The same continuing education units can be applied to both licensure and certification. The ANCC requires 75 contact hours in continuing education to maintain

advanced practice certification, and 25 of these 75 must be in pharmacotherapeutics (ANCC, 2014).

Legislation and Licensing

According to Cipher and Hooker (2006) and Courtenay and Carey (2007), the healthcare system drives the role of the NP. However, this alone cannot increase patients' access to medicines, make more effective use of resources and time, legitimize work that nurses are already doing, and improve relationships between healthcare professionals. Sometimes the government, through legislative action, needs to help facilitate these processes (Hooker, 2010).

Prescribing privileges for the NP are relatively new. Initially there was resistance from physicians, as some saw the NP as competition (Ross, 2012). It took repeated legislative action to sway the American Medical Association (AMA) into releasing a position statement that supported prescribing privileges by the mid-level practitioner. However, the statement stopped short of supporting privileging for a clinical nurse specialist (CNS) (Ross).

The prescribing credentials vary state-to-state (Ross, 2012). There are some common elements to licensing across the 50 states, such as newly licensed NPs need to be at least master's level prepared and credentialed by an accrediting body such as the American Nurses Credentialing Center (ANCC) (Ross). Discrepancy between states can increase the difficulties for practitioners who seek to practice in cross-border states (Goolsby, 2011). The AANP survey revealed that nationally, 97% of NP's are credentialed to prescribe, but there is a restriction on prescription of certain drug types,

and only 77% are credentialed to prescribe controlled substances (Goolsby). The Consensus Model (Johnson, 2008) promotes the idea that all APRNs, including NPs, in every state should be able to practice at the full extent of their educational preparation; if fully realized, this would facilitate consistent APRN and thus NP practice across the states.

On occasion, a difference in licensing and ability to practice to the full scope of the NP license can cause downstream effects, such as increasing the costs of care. In some states prescriptions written by NPs must be cosigned by a physician, regardless of whether it is a controlled substance or not (Ross, 2012). In RI a prescription does not need to be cosigned and NPs are able to obtain a DEA number to prescribe narcotics (RI State Board of Nursing, 2014).

Prescribing Practices

An AANP national survey was conducted (Goolsby, 2011) to provide an accurate picture of the NP work force and included prescribing practice information. There were 13,562 anonymous surveys returned, which represented approximately 10% of practicing NPs. Survey results indicated that 3% (n =409) of NPs with authorization to prescribe chose not to prescribe medications (Goolsby). The choice not to prescribe by the provider was related to lack of ongoing education on pharmacology. Further study of prescribing practices revealed prescribing and cost containment strategies are needed. Both quantitative and qualitative studies about NP and PA prescribing practices are necessary. This is a new area for cost-containment strategies with ensuring the prescribing is not done in the interest of the pharmaceutical company (Hooker, 2010).

Midlevel practitioners as well as physicians are influenced by the pharmacologic industry (Ross, 2012). The pharmacologic industry collects data on prescriptions written including who is writing them and what drugs are being prescribed. An unseen barrier to prescribing identified in the literature was the influence of the insurance formulary versus the pharmaceutical companies free sample programs and ease of access to these medications. A practitioner may hesitate to provide the free sample of the medication if it is not on that particular patient's insurance formulary. As the practitioner is trying to treat the "whole" patient, the need to balance insurance cost effectiveness and patient's ability to obtain the medications can be a significant conundrum (Ross).

Cipher and Hooker (2006) reviewed the results of the National Ambulatory Medical Care Survey (NAMCS), the intent of which was to examine the prescribing behaviors and characteristics of providers. The survey further identified types of prescriptions written by NPs and PAs and compared them to physicians' prescriptions written. Similarities in prescribing practices between the physician, NP, and PA were identified. They were all likely to write at least one prescription, and in a primary care setting the average number of times they prescribed a controlled substance was similar. The three prescribers were noted to use evidence based medicine when prescribing and for treatment of the patient. Physician assistants were found to be more likely to prescribe a narcotic than a NP or a physician in metropolitan areas. The NPs prescribed an average of 1.7 prescriptions per visit, and in the non-metropolitan areas NPs prescribed the largest average number of medications (Cohen's d= .28). The authors concluded that midlevel practitioners and physicians practice essentially in the same way,

using evidence based practice for treatment and prescribing medications for the patient. Reed (2011), through a review of the literature, suggested that NPs who prescribe take a holistic approach of the patient, considering the physical, social, and psychosocial aspects of the patient and seeing the "whole" patient.

Jones, Edwards, & While (2010) conducted a mixed method single case study; the purpose was evaluate NP prescribing in acute care. Team members observed the practice of two NPs and two physicians. Also, 122 patients participated in the survey portion of the study, with a 61% (n= 74) response rate. The role of the patients in the study was to test the null hypotheses that there were no differences between the roles of medical nurse prescribers and this sample of patients would likely confirm or refute the propositions held. There were six propositions that were translated into questions; Nurses spend more time with patients than doctors, Nurses give more information about their medicines than doctors, Patients who have medications prescribed by nurses are more knowledgeable about their medications than those who have medications prescribed by doctors, Patients who have medications prescribed by nurses are more compliant with their treatment than those who have medications prescribed by doctors, Patients who have medications prescribed by nurses experience fewer side effects than those who have medications prescribed by doctors, Prescribing is a risky activity irrespective of the professional background of the prescriber. The nature of the interviews collected from July 2005 through September 2006 was the observations made on the 2 NPs and 2 physicians in prescribing practices. The team members that did the interviews were a small group that had nothing to do with the environment the providers were observed in and followed a

fifteen- point checklist. The same team member interviewed the provider in the second round of interviews. The checklist was devised to assess prescriber competence and management of the patient's medications. The NPs were interviewed at the beginning of the study and again nine months later along with their physician colleagues there were no differences in NP versus physician prescribing practices. There was a statistically significant difference of ($P< 0.001$) in the provision of patient education related to medication between the physician and the NP with the NP scoring a higher mean rank reported from the patients surveyed. The NP was giving additional education on medications to the patients. There was also a statistical difference noted in mean total satisfaction across professional groups, with NPs with a higher mean than the physicians ($P<0.001$) in prescribing medications.

Currently, there are some NPs that do not practice to the full extent of the license. Scrafton et al. (2012) indicated that lack of education is a contributor to practitioners choosing not to prescribe, although in some states regulations also impede practices. Chapell et al. (2010) studied 128 NPs practicing in a state with prescriptive privileges and ability to have a DEA number. They identified that 70% of the NPs ($n = 90$) chose not to engage in prescriptive practices. The study demonstrated a relationship between respondents not prescribing and risk-taking and risk perception**.** The NPs who chose not to prescribe identified prescribing with risk and perceived it as risky behavior and one for which they had not been adequately educated. The relationship was measured using the Domain-Specific Risk-Taking Scale (DOSPERT). The DOSPERT estimates the risk taking scores range from 0.71 to 0.86 and risk perception scores of 0.74 to 0.83. Two

statistically significant relationships evidenced in this data. The first is the relationship between risk-perception and resilience (low correlation at 0.298, p= 0.011) and second is between risk taking and risk-perception (moderate correlation at –0.522, p= 0.000). Holding a DEA number and practicing to the full scope of your license continues to be essential to the Nurse Practitioner role, however the results also reveal the importance of education related to pharmacology and that it is needed to be confident in prescribing.

Petty (2012), a practicing pharmacist conducted an extensive review on medication errors. Petty identified some common themes and made recommendations in order to promote safer patient outcomes. Petty identified 10 tips to safer prescribing: (1) prescribe in area of expertise, (2) do not prescribe simply because the patient asks for it, (3) use evidence-based data to drive prescribing decisions, (4) know your patients medications, (5) involve patient in decision making process, (6) education and coping levels vary so keep explanations and treatments as simple and streamlined as possible to maximize potential results and increase safe usage, (7) be knowledgeable about drug interactions, (8) remember every patient is unique and listen to their story, (9) avoid polypharmacy, and (10) review the need for continuing a medication and monitor appropriate labs/diagnostics related to usage. Petty viewed the NPs role as enhancing safety and ensuring that prescribing happens without error

According to HRSA (2008), practice-prescribing errors occur no more frequently by the NP than by other midlevel providers. White (2011) reviewed research driven strategies for enhancing safety in organizations and preventing errors in prescribing, with a focus on APRN education. The article was a review and summary of the discussions

and current issues faced by health care professionals, with an emphasis on APRN prescribing. White suggested empowering patients to be proactive in their own individual healthcare, and to question medications prescribed and treatment. Using the brown bag method of drug reconciliation at each visit with the provider was also recommended to reduce medication errors. It was discussed that ineffective communication between prescriber and patient, health literacy of the patient, and cultural and language barriers can all contribute to prescribing errors.

Patient Satisfaction

The benefits of a midlevel practitioner prescribing includes; facilitating patients quicker access to care by not necessitating seeing a second clinician for a prescription. Both of these factors have been potentially identified as increasing patient satisfaction (Jones, Edwards, & While, 2010). Jones et al. conducted a mixed method and single case study using purposive sampling and they also surveyed the patients seen by these practitioners. The purpose was to evaluate NPs prescribing in the acute care setting. Eighteen semi-structured interviews were conducted with staff members working on the units the providers were also working on as well as a non-participatory observation of two physicians and two NPs. The researchers completed 52 patient prescriber consultations, which were patient consented observations of their interaction with their provider, and also 122 patients were surveyed to confirm or refute the null hypothesis. The patient response rate was 61% (n=74). No differences were found between physicians and NPs prescribing practices. The data did not show any statistical difference in the way the NP and physician approached the patient or in the way their

medicines were managed. There was no difference in the length of the consultation and the professionalism of the prescriber. A statistical difference ($p<0.001$) was demonstrated from patient report of medication information provided by NPs versus physicians. The survey results also revealed: unanimous patient confidence ($n = 74$) in the prescriber; no significant differences related to medication adverse effects between NPs and MDs, and a significant difference ($p<0.001$) related to satisfaction with medication information given to them by their provider. The study concluded that the visions and goals shared by practitioners are one and the same: quality safe patient care. The study revealed the NP and physician are practicing and advocating for the best care for a patient.

According to a self-reflection assessment conducted by Milligan (2012), the study was a medical notes assessment of level of patient satisfaction level in relation to midlevel practitioner prescribing practice. A random selection of patients' medical notes written by midlevel provider prescribers from April 2009 and March 2010 were evaluated using 11 domains based on the Nursing and Midwifery Council (NMC, 2006) standards for prescribing. These standards include: legible documentation and consent to treatment; appropriate medical history including drug allergies; appropriate examination, interpretation of results were appropriate, considerations of contra-indications; presenting medical and family history; current medications; documentation on advice on appropriate way to take medication and possible side effects and lastly legible signature.

The results showed a high level of patient satisfaction. The researchers inline with the objectives of improving the experience of patients, a patient satisfaction evaluation survey of satisfaction related to medications prescribed was used. The survey

had five questions if you were prescribed medication while you were in the hospital or in clinic outpatient. The survey was anonymous and both online and on paper, 69/71 was very satisfied with their care and received sufficient information regarding their medications. The patients were very satisfied with NP prescribing and appreciated the seamless care that prescribing allowed. The evolving role of the nurse as an autonomous practitioner is reflected in patient satisfaction related to the ability to prescribe and manage their care seamlessly. Evidence for compliance with the NMC standards for prescribing was supported through documentation (Milligan, 2012).

In summary, the literature supports that confidence levels of NPs vary, and that confidence comes with education and experience. That NPs desire for increased education in pharmacology in relation to prescribing is a theme noted throughout the literature. The research also supports that there are many similarities, but also some subtle prescribing difference between the APRN, PA, and physician.

Next, the theoretical framework that guided this proposed study will be presented.

Theoretical Framework

Faye Abdellah's theory "Patient-centered approaches to nursing" (McEwen & Wills, 2007) closely aligns with the basic principles of the advanced practice nurse model. The primary tenet of the theory is one of a patient centered approach, which is within the scope of a human needs theory. Abdellah's theory requires each practitioner to focus on the individual needs of the patient and not apply a standardized medical model cookie-cutter approach. Abdellah identified 21 overarching nursing problems that can occur with a patient:

- Maintain good hygiene and physical comfort
- Promote optimal activity, exercise, rest, and sleep
- Promote safety through prevention of accidents, injury, or other trauma and through the spread of infection;
- Maintain good body mechanics to prevent and correct deformities;
- Facilitate the maintenance of a supply of oxygen to all body cells;
- Facilitate the maintenance of nutrition to all body cells;
- Facilitate the maintenance of elimination;
- Facilitate the maintenance of fluid and electrolyte balance;
- Recognize the physiologic responses of the body to disease conditions;
- Facilitate the maintenance of regulatory mechanisms and functions;
- Facilitate the maintenance of sensory function;
- Identify and accept positive and negative expressions, feelings, and reactions;

- Identify and accept the interrelatedness of emotions and organic illness;
- Facilitate the maintenance of effective verbal and non verbal communication;
- Promote the development of productive interpersonal relationships;
- Facilitate progress toward achievement of personal spiritual goals;
- Create and maintain a therapeutic environment;
- Facilitate awareness of self as an individual with varying physical, emotional, and developmental needs;
- Accept the optimum possible goals in light of physical and emotional limitations;
- Use community resources as an aid in resolving problems arising from illness;
- Understand the role of social problems as influencing factors in the cause of illness (Abdellah, Beland, Martin, & Matheney, 1968).

Identification of these problems and corresponding goals can assist nurses to practice in an organized and systematic way (Tomey and Alligood, 1998). The ability to use critical thinking while assessing an individual patient through the 21 problems and uniquely adapt nursing diagnoses and medication needs for each patient requires a high level of practitioner confidence (Abdellah et al., 1968).

Abdellah brought science into nursing, her vision drove her research and she is considered the "mother of nursing research" (Houser & Player, 1957). Abdellah's vision for education and research continues to drive nursing today on some level. Abdellah brought forward the basic tools to provide evidence based practice for staff nurses and continued to promote the importance of a strongly educated nurse throughout her career (Abdellah et al., 1968). According to Abdellah et al., positive patient outcomes are seen

with science education of the nurse. It was her belief the entry level nurse should have a baccalaureate degree to practice at the bedside, assuring that the nurse was a well-rounded scientifically educated nurse. She promoted advanced nursing education including the use of science as a basis for the continuing education of the professional nurse as a nurse leader (Abdellah et al.).

Abdellah's theory supports the need to provide advanced education for nurses and professional development for nurse leaders (Abdellah et al., 1968). Advance practice nurses by definition have advanced education, but advanced education does not necessarily translate into the knowledge, skill, and attitudes needed to function effectively in clinical practice. Clinicians, at all levels, must continue to expand their education through independent study, continuing education courses, agency endorsed education programs, and pharmaceutical sponsored programs (Saenz, 2004).

Abdellah may have written her 21 nursing problems and 10 skills over 50 years ago but they still apply today. They are the grass roots of nursing and basic principles to practice. Abdellah was a pioneer for nursing and changed the way nursing practiced. Her theory was adapted and used in educating nurses around the country.

The theoretical framework provided by Abdellah stresses the importance of education. She spoke of being scientifically educated, and this is a perfect example of nursing wanting that type of education. The Nps that were surveyed, observed, and questioned through out the literature seemed to stress that education in pharmacology was important to their prescribing practice. Prescribing with confidence came with education and knowledge about what you were prescribing. Abdellah's theory supports the need for

commitment within the organization for continuing education of advanced practice nurses. Critical thinking in relation to prescribing practice relates to the patient problems of safety and promotion of regulation of physiological functioning in managing patient health issues. Skill development in managing medications for multiple patients will improve patient outcomes.

In the next section, the method used in this study will be presented.

Methodology

Purpose

The purpose of the proposed study was to explore NP confidence in prescribing medications. There is a ten -question survey that will identify confidence levels. In addition, the study will identify if there are specific needs for midlevel prescribers on how to prescribe.

The research question for the study is "What is the prescribing confidence level of a selected group of currently practicing NP's?

Design and Measurement

The research study proposed is quantitative descriptive with one open ended question that will be analyzed for themes.

Sample

The study employed a convenience sample of Nurse practitioners that work at Optum Care Plus and attended the regional meeting. Of the 20 potential participants, 10 (50%) were the goal sample size. This number was determined from the amount of employees that work for the company Optum Care Plus where the convenience sample was being surveyed. The inclusion criteria is that the participant is willing to participate, is an employee of Optum care Plus and was present at the April 21st staff meeting. The exclusion criteria are the employee is not present at the staff meeting.

Site

Optum Care Plus provides medical services to nursing home patients. Midlevel practitioners are used in conjunction with physicians. Optum Care Plus's program goal is to optimize health, and if illness or injury should occur, then to ease of access to a midlevel practitioner will result in reduced hospital use. The student researcher has been given permission to attend a regional meeting on April 21st, 2014 to potentially distribute the survey to interested members (Appendix A). Only NP's attending the regional meeting will be eligible to participate. Historically, these regional staff meetings have been well attended.

Procedure

The researcher was been given 20 minutes on the agenda of the meeting. Upon arrival into the conference room, the researcher placed a packet containing the IRB approved informational letter and the survey at every seat. When invited to begin, the student researcher introduced herself to the audience and described the purpose of the study and overall study procedures as well as the content of the IRB approved informational letter (Appendix B). Interested participants will be asked to complete the survey found at their seats. If they were interested in participating in the survey they completed it. There were no identifiers on the survey. Completing the questionnaire survey indicated implied consent to participation in the project. Participants were asked to place the completed survey in a sealed box set on the table in the back of the conference room. The surveys were collected during the first break after the presentation.

Measurement

This researcher utilized a ten- question survey developed in Australia by Cashin et al. (2014) to measure NP confidence in prescribing (Appendix A). The authors reported content validity was established by an expert panel and verified. The survey is divided into three sections based on question types: the first section has six questions to collect general demographic information; the second section includes 10 questions related to confidence levels and is scored with a Likert scale ranging from 3 = very confident to 0 = not confident at all. The final section consisted of a single open ended opinion question regarding needs related to increasing confidence levels in prescribing.

Data Analysis

Descriptive statistics were used to analyze the study variables. The open-ended question was evaluated for common themes.

Next, study results will be presented.

Results

Of the 20 possible participants, 17 NPs completed the survey (85%). One participant (5%) was male and 16 (95%) were female. Education ranged from a certificate (n = 1; 5%) to the Master's degree (n = 16; 95%). Years of experience in the NP role ranged from 2 to 45 years, with an average of 10 years of experience. Eleven participants (65%) had 2-9 years experience, and six participants (35%) had 10-45 years experience practicing as a NP. There was one outlier who identified as having 45 years of experience; when removed, the remaining five participants (29%) had 10-16 years of NP practice experience.

Nurse practitioners identified unanimously that they had the legal ability to prescribe medication for a time period ranging from 2 to25 years. Eleven (65%) had 2-9 years and six participants (35%) had 10-25 years of experience in prescribing medications. All 17 participants (100%) were certified: 11 (65%) were certified as Adult Nurse Practitioners (ANPs); four (23%) were certified as Family Nurse Practitioners (FNPs), and two (12%) were certified as a Geriatric Nurse Practitioners (GNPs). Fourteen participants (82%) were certified by the American Nurse Credentialing Center (ANCC), with three (18%) certified by American Academy of Nurse Practitioners (AANP).

Results from the 10 question confidence in prescribing survey are illustrated in Table 1.

Table 1
Confidence levels in Prescribing Medications By Percent of Respondents

CONFIDENCE LEVELS	Very confident	Confident	Low confidence	Not confident at all
How confident are you with:				
Meeting legal requirements for prescribing?	11(65%)	6(35%)	0(0%)	0(0%)
Adding a new medicine to your client's treatment?	9(53%)	8(47%)	0(0%)	0(0%)
Adjusting medications of prescribed by other health-care professionals?	5(29%)	11(65%)	1(6%)	0(0%)
Discontinuing medications prescribed by other health-care professionals?	6(35%)	11(65%)	0(0%)	0(0%)
Providing clients with education on their medications?	12(71%)	5(29%)	0(0%)	0(0%)
Providing other health-care professionals with education about medications?	9(53%)	8(47%)	0(0%)	0(0%)
Recommending complementary or alternative medications to clients?	3(18%)	11(65%)	3(18%)	0(0%)
Identifying potential drug interactions?	6(35%)	10(59%)	1(6%)	0(0%)
Identifying adverse drug reactions?	5(29%)	11(65%)	1(6%)	0(0%)
Monitoring client's responses to medications?	9(53%)	8(47%)	0(0%)	0(0%)

Overwhelmingly, responses were in the very confident and confident range. On the majority of questions (1—6 & 10), all NPs responded that they were confident or very

confident. On the seventh, eighth, and ninth questions, a small percentage of participants (18, 6, & 6% respectively) reported low confidence levels. These questions related to recommending complementary or alternative medications, and identifying potential drug interactions as well as adverse drug reactions The overall confidence levels by years of experience were examined, with no difference in average confidence level on any question between NPs having experience greater than the average (10years) and those having less than 10 years experience.

Table 2 illustrates the number and percentage of participants who had completed the required '3P' classes (physical assessment, pathophysiology, and pharmacology) as part of the NP program that they had attended, as well as those who had completed specific content related to prescribing.

Table 2

Number of Participants Completing the of '3 Ps' and Modules on Prescribing

Modules	Y	N
Required 3P	17 (100%)	0(0%)
Taught Prescribing	7(41%)	10(59%)
Taught Both	7(41%)	10(59%)

All NPs had completed the '3P'courses within their program. Ten participants (59%) had completed modules on how to prescribe within their educational program,

while seven participants (41%) had not. Seven NPs (41%) had completed both the '3P' classes and the modules on prescribing medications.

Results from the open ended question, "Regardless of your confidence level in prescribing medications, what would you need to increase your confidence level?" are illustrated below. Eight participants (47%) answered the question with the following responses:

- You can never have too much education;
- Post-graduate informal education and training;
- Polypharmacy and CEU programs;
- More time prescribing and observing effects;
- Buy-in from PCP;
- Interactions of new medications and updates;
- More updates to increase awareness of black box warnings, interactions, and new evidence on existing medication effectiveness;
- Continuous education

The over whelming theme derived from these comments was education (n= 5). Other themes included: information about new evidence on medications (n=2) and buy-in from the PCP (n=1); in general, the NP participant desired additional education related to medication for better prescribing practices.

Next, summary and conclusions will be discussed.

Summary and Conclusion

The NP role must include prescriptive privileges in order to manage the whole patient in a comprehensive way (Chapell et al., 2010; Courtenay & Carey, 2007; Milligan, 2012; Scrafton et al., 2012). The scope of practice for the APRN, specifically related to the authority to prescribe, varies among the states. According to the American Association of Nurse Practitioners (AANP) (n. d.), 17 states allow full prescriptive practice for the NP, including Rhode Island.

Nurse practitioners are reasonably confident about most aspects of prescribing practice, namely educating clients and monitoring responses to medications. However, they are less confident about adjusting or discontinuing medications prescribed by another health care provider (Cashin et al., 2014). Education has been determined to be a significant factor in the confidence level of the NP prescriber (Ross, 2012). Both mid-level practitioners who prescribe and those choosing not to prescribe identified a lack of education related to how to prescribe, and suggested three options to increase the practitioner's knowledge: formal academic education; workforce provided seminars; and self-initiated continuing education options (Scrafton, McKinnon, & Kane, 2012).

The purpose of this study was to explore NP confidence in prescribing medications. This study used a quantitative descriptive study with one open-ended. The study included a convenience sample of NPs who were employed at Optum Care Plus and had attended a regional staff meeting also attended by the student investigator. After review of an IRB approved informational letter, subjects completed the *Measuring*

Confidence questionnaire (Cashin et al, 2013), a 10 item Likert response survey designed to measure confidence levels related to prescribing.

Results indicated that the NP participants were overall very confident prescribers. Low confidence level were reported on three out of the 10 questions that queried about adjusting medications prescribed by other health-care providers, and recommending complementary or alternative medications to clients. The lower confidence level around adjusting or discontinuing medications prescribed by another health care provider confirms earlier results by Cashin et al. (2014). Analysis of the open- ended question supported the need and desire for additional and continuing education related to medications.

Limitations included that the study used a convenience sample of NPs from one site and type of practice; the sample was not representative of NPs practicing overall. The small sample size further limited the ability to generalize from these results. The majority of participants were female; though typical of the NP population, further study with a more diverse sample, including those of different ethnic groups, is indicated. Some additional limitations were the survey was time limited and did not account for experience of the NP.

In conclusion, this study was able to demonstrate overall prescribing confidence in this sample of NPs. Results also clearly support the need and desire for continued education. Educational institutions need to adequately prepare practitioners with the required pharmacology, pathophysiology, and physical assessment classes as mandated by the accrediting bodies and reaffirmed by the Consensus Model document. In RI, the

State Board of Nursing is the body that grants the APRNs the privilege to prescribe (RI State Board of Nursing 5-34-45). The application requires 30 hours of education in pharmacology three years immediately prior to the date of application. Also required is a completed RI uniformed controlled substance act registration (CSR), which allows the practitioner to prescribe controlled substances and provides a DEA number from the federal government.

Next, recommendations and implications for advanced practice will be presented.

Recommendations and Implications for Advanced Nursing Practice

The Advanced Practice Registered Nurse (APRN) is a practitioner and leader within the interdisciplinary team. It is important that the APRN have organizational involvement and understand the culture of the organization in order to successfully support and lead needed evidence-based practice change. One of the primary roles of the APRN is to improve the quality and safety of patient care. This researcher identified a possible improvement in patient safety and outcomes that can enhance the prescribing confidence of the APRN. Patient safety and quality outcomes are everyone's responsibility in healthcare. The APRN has the opportunity to act as a leader and educator and to promote a high quality education for current students. Modeling safe prescribing practices and the need for on-going continuing education is an important role.

Advanced practice nurses need to continue to lobby for and support policies that enhance patient safety at the national level. Medication reconciliation and The Joint Commission safety goals are examples of national initiatives that promote safe prescribing practice. Active involvement at the local and state level is key, as well as active membership in professional organizations.

The APRN needs to be aware of financial aspects, including cost, utilizing resources to the max, and stream lining processes for efficiency, and the impact of all of these aspects on outcome measures. The APRN needs to promote safe, efficient care in a timely fashion. Assuring knowledge and confidence related to APRN prescribing has the

potential to improve patient outcomes by reducing the risk of error in prescribing by the NP.

Schools that provide APRN education, including for the NP, should consider including modules on prescribing in order to better prepare the NP as a novice prescriber. Likewise, NPs in practice need to model this behavior in practice, and through the role of preceptor, facilitate the transfer what is learned in educational programs to practice. The APRN needs to work in collaboration with employers for themselves and new NPs coming to the work force to request and encourage additional pharmacology educational activities. The literature continues to report that continuing education is wanted and needed at the work place.

The APRN is instrumental in identifying further research questions for clinical research. Currently much of the research compares the NP to physicians and their prescribing practice as well as other midlevel practitioners. Further research in NP prescribing is needed, with a focus on NP decision making how they make prescribing decisions in practice. This study demonstrated the desire for further education; replication with larger samples and more diverse APRNs samples is needed.

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Appendix A

Survey

Demographics Questions

A. Are you a Nurse Practitioner?

B. How many years have you held a license to practice as a Nurse Practitioner?

C. How many years have you had the legal ability to prescribe prescription medications?

D. What type of program prepared you for this role:

1. Certification program or 2. Master's education with preparation

What are you certified as? _____

Which certifying body? _____

E. Gender? Male or Female

F. Did your educational program for NP have

a. Require the 3 Ps – Physical Assessment, Pathophysiology and Pharmacology?

b. Require specific learning modules on how to prescribe medications?

Confidence Questions

Based upon your past experience, please rate how confident you are in prescribing within these scenarios. Use the following scale:

3. Very confident 2. Confident, 1 Low confidence, 0 not confident at all

A. How confident are you with meeting legal requirements for prescribing?

B. How confident are you with adding a new medicine to your client's treatment?

C. How confident are you with adjusting medications of prescribed by other health-care professionals?

D. How confident are you with discontinuing medications prescribed by other health-care professionals?

E. How confident are you with providing clients with education on their medications?

F. How confident are you with providing other health-care professionals with education about medications?

G. How confident are you with recommending complementary or alternative medications to clients?

H. How confident are you with identifying potential drug interactions?

I. How confident are you with identifying adverse drug reactions?

J. How confident are you with monitoring client's responses to medications? (Cashin et al., 2014)

Question

Regardless of your level of confidence in prescribing medications, what would you need to increase your confidence level?

Appendix B

Rhode Island College Institutional Review Board

Approval #: 1314-1076 Expiration date: 4/13/2015

CONSENT DOCUMENT Rhode Island College

Nurse Practitioners' Confidence to Prescribe

You are being asked to participate in a research study in which you will rate your confidence level in prescribing medications. The purpose of the study is to explore the level with prescribing in currently practicing Nurse Practitioners. You were selected as a possible participant because you are a Nurse Practitioner employed by Optum Care Plus and currently practicing. Please read this form and ask any questions that you may have before deciding whether to be in the study.

Holli Jean Brousseau RN, BSN, graduate student at the Rhode Island College, School of Nursing, is conducting this study.

Background Information

The purpose of this research is to explore the level of confidence with prescribing in currently practicing Nurse Practitioners. In addition the study will identify if there is a need for additional education for midlevel prescribers on how to prescribe).

Procedures

If you choose to be a participant in this research, you will be asked to do the following things: During a regularly scheduled meeting on Monday April 21 st 2014 at Optum Care Plus, from 2-5:00pm, the researcher will describe the study purpose and procedures. If you choose to participate, you will be asked to complete a brief survey about Nurse Practitioner confidence in prescribing medications. Completion of the survey will take about 10 minutes of your time. If you agree to participate, after you complete the survey, you will be asked to deposit it in a sealed drop box in the back of the conference room.

Risks of Being in the Study

The student researcher has determined that the risk involved in participating in this proposed program is minimal and no greater than or are about the same as what you would experience in your daily activities. There is no identifier on the survey so there will be no breach of confidentiality.

Benefits to You

There are no direct benefits to you for participating in the study.