Assessment of Advanced Practice Nursing Students' Perceptions and Expectations of

Clinical Experiences, and Factors that Lead to Future Careers in Rural Health

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The role of the advanced practice nurse (APRN) is expanding, and with it, the number of APRN training programs (Iglehart, 2013a). New graduates practice largely in environments that require all of their skills, including hospital-based roles, specialty roles, and primary care roles. In many states, APRNs practice almost entirely independently, which requires that their knowledge and skills be honed to an exceptional degree (Institute of Medicine [IOM], 2010).

As the role of the advance practice nurse has expanded, training programs have evolved from certificate programs into combined advanced practice nurse and doctoral level training (Rounds, Zych, & Mallary, 2013). The evolution of training APRNs has not only grown to include more rigorous didactic coursework, but has also increased requirements for clinical time spent directly caring for patients (American Nurses Association [ANA], 2008).

Historically, a preceptor is either an advanced practice nurse or a physician who is responsible for offering the APRN student direct training in clinical practice. Physician assistants (PAs) are barred from acting as a primary APRN student preceptor (National Council of State Boards of Nursing [NCSBN], 2008, Mitchell, 2004). The current APRN model of training differs in some ways from the one employed in many traditional Bachelor of Science in Nursing (BSN) programs. Under the typical BSN model, a group of students is placed together on a specific unit with direct supervision from a faculty member. Additionally, the group is assigned to work with a professional registered nurse (RN) preceptor. Due to the independent nature of advanced practice, this undergraduate model is not possible, nor is it practical. APRN students are frequently placed without direct faculty supervision, and with practicing APRNs who may not have had specific

training in teaching or any direct affiliation with the APRN student's academic program. In general, most professional APRN preceptors choose to engage in this practice voluntarily, and most of the benefits for the preceptor are intangible (Lyon & Peach, 2001). This lack of direct incentive has contributed to two significant problems in the world of training APRNs. The first problem is multifaceted, and includes: finding, utilizing, and retaining qualified APRN preceptors. The second problem is that student experience can vary quite widely (Forsberg, Swartwout, Murphy, Danko, & Delaney, 2015).

Over the past 20 years, the number of APRN programs has grown considerably (Health Resources and Services Administration [HRSA], 2014). There are currently 350 advanced practice nurse programs in the United States (American Academy of Nurse Practitioners [AAPRN], 2014). Also reflected in the growth of these programs is the number of certified APRNs graduating throughout the country, which has more than doubled between 2002 and 2012 (HRSA, 2014). As the current healthcare system in the United States pivots away from the management of illness in large tertiary care centers to management in the primary care, clinic-based setting, APRNs are poised to become an even more critical part of caring for patients (IOM, 2010).

However, as the number of APRNs has expanded in the past decade, a shortage of qualified faculty and preceptors has developed; in fact, the shortage of trained faculty in many nursing programs throughout the United States is a well-documented issue (Nardi & Gyruko, 2013). This shortage is reflected both at the undergraduate and at the graduate level. As APRN programs have struggled to hire and retain faculty members, they have additionally been challenged with locating and retaining qualified preceptors (Campbell

& Hawkins, 2007). In some ways, this occurrence is paradoxical; if APRN programs are continually producing qualified APRNs, wouldn't it seem that if at least a fraction of these graduates went on to work locally, there would be a never-ending supply of preceptors? Of course, this is not the case.

Research has indicated that many preceptors do, in fact, precept early in the role after graduation (Amella, Brown, Resnick, & McArthur, 1999). However, the ideal of a "continual supply" of preceptors is not the reality. Other healthcare professions may have potential answers to this situation, however their educational structure is fundamentally different, creating difficulty in replicating solutions. For example, medical students in clerkships, internships, and residencies are typically assigned to faculty who are active in academic medical centers, which makes the preparation of students a core job function. Additionally, there is significant federal financial incentive to train residents at many locations (Iglehart, 2013b). Conversely, most APRN students—especially those in primary care tracks such as that of the Family Nurse Practitioner (FNP), Adult Gerontology Acute Care Nurse Practitioner (AGACNP), and Pediatric Nurse Practitioner (PNP)—may be trained in a variety of clinical settings that are also removed from the academic medical setting (Mitchell, 2004).

Historically, APRNs who precept tend to do so repeatedly, which may lead a school of nursing to know a great deal about that individual preceptor's skills, as well as the nature of the clinical site based on past experiences (Lyon & Peach, 2001; M. McKimmy, personal communication, 2015). But as most APRN programs are only a few years in length, faculty may not have had a previous opportunity to make specific evaluations of students' needs and goals relating to clinical placement. There has not

been a significant focus in the literature on systemically analyzing the expectations and

experiences of students prior to, during, or after completion of clinical rotations. The

primary aim of this project will be to describe these experiences from the perspective of

the APRN student in an effort to better understand ways to improve both their individual

experiences and overall program outcomes.

Currently, part of the mission of Oregon Health and Science University (OHSU),

and the OHSU School of Nursing (OHSU SON) is to train future APRNs to meet the

needs of rural communities across the region (Oregon Health and Science University

[OHSU], 2015). Within the literature, there are a number of analyses regarding what

attracts future healthcare providers to a career in rural and underserved settings (Budd et

al. 2014, Rasmor, Kooienga, Brown, and Probst, 2014). However, the Rural Health Track

at OHSU SON is currently a voluntary program open to only Family Nurse Practitioner

and Psychiatric Mental Health Nurse Practitioner (PMHNP) certification students

(OHSU, 2015). Therefore, the secondary aim of this project will be to describe the

interest level in a future career in a rural health setting across all direct patient care APRN

certification tracks at OHSU SON, and to identify common themes or qualities that will

allow for wider access to the Rural Health Track.

Regardless of the location of preceptorship, each moment a student spends in the

clinical setting represents critical learning experiences; it is essential that each student's

needs for learning and practicing are met or exceeded during the time they spend with a

preceptor. Accredited APRN programs require students to complete at least 500

precepted hours (National Organization of Nurse Practitioner Faculties [NONPF], 2014).

Given the complexity of the current healthcare environment, one could argue that this is a

small timeframe in which to master a significant amount of information, which means it is imperative that all of their clinical experiences are robust and of high value, for optimal educational outcomes.

An assessment of student expectations, learning styles, and specific desires may help to assist nursing school faculty in placing students in environments where they will achieve the highest levels of success, and to improve the outcomes for future cohorts. Such an assessment may also yield valuable information about trends among APRN students' expectations, learning styles, and specific desires related to their clinical placements, which may have previously been unidentified. Likewise, a more robust understanding of the OHSU SON APRN student populations' interest in a future career in rural health may allow faculty to develop the most robust training program possible to produce APRNs who are prepared to work in the rural environments.

Literature Review

Gaps in Graduate Nursing Student Training

Current literature on the subject of primary care APRN students includes a large amount of research on the topic of preceptorship related to nursing schools, individual preceptors, and academic medical centers. However, there is an absence of research as it pertains to student perceptions of their clinical experience. This gap in the literature is critical to address in order to improve graduate nursing education outcomes, and in turn, to improve the quality of care provided by professional APRNs.

As healthcare shifts more toward the outpatient setting, and more responsibility is placed on primary care providers to coordinate and conduct care, the level of

comprehensiveness of APRN training becomes even more essential (IOM, 2010). While

APRN training curriculum at the classroom level has evolved a great deal over the years,

the APRN precepting model has remained largely the same since the 1960s. This

apprenticeship model relies on the ability of the practicing APRN to instill certain

knowledge upon a student in a defined, and often limited amount of time (Giddens et al.,

2014). Given the brief time a student has with a preceptor, and that this preceptor may or

may not be skilled in various areas, this model does not ensure that future APRN students

will be prepared to meet the primary care needs of the U.S. Healthcare System. During

the course of their education, APRN students often have multiple preceptors with various

specialty skills. However, without formal assessment, it is impossible to quantify the

quality or usefulness and learning of their experiences.

Current literature has identified that the apprenticeship model of precepting

APRN students is not ideal for a number of reasons (Giddens et al., 2014). However,

there have been few robust, transformative solutions offered that suggest changing the

model of APRN clinical education. Given a lack of funds and a lack of a national

consensus for change, much of the literature in this area has focused on analyzing the

various players in the APRN clinical education equation, but not on the students

themselves (Forsberg et al., 2014). In 2014, a National Leaders' Dialogue outlined a

number of topics they felt essential for the progression of APRN clinical training. These

included: (a) expanded national dialogue about a redesign of the clinical education

experience, (b) standardized preclinical preparation of students, (c) the use of entrustable

professional activities (measureable student milestones, such as charting a patient visit,

completing an exam, or suturing a wound vs. just completion of a minimum number of

contact hours) (ten Cate & Scheele, 2007), (d) immersive clinical experiences, (e) team-

based care, (f) innovative education practices, and (g) standardized student assessment.

This last topic, standardized student assessment, was defined as an evaluation of the

students' knowledge, skills, and capabilities prior to clinical placement. This proves that

assessment of students must be taken into account, yet this remains just a topic of

consideration, and has yet to be researched, analyzed, or sufficiently addressed (Giddens

et al., 2014).

Advanced Practice Nurse Preceptors

When exploring the research related to APRN student preceptorship, the most in-

depth area that has been reviewed is the preceptors themselves. For example, Lyon and

Peach (2001) surveyed a number of preceptors while looking for a detailed analysis of the

barriers to becoming and remaining a preceptor. They noticed that limitations in office

space and lack of sufficient time to manage a patient load while teaching a student were

common issues. A different analysis on the same topic by Barker and Pittman (2010)

found that APRNs who precepted students tended to see 1.4 less patients, and had to

spend an extra 51 minutes at work per day. Additional barriers included patients'

expectations or preferences not to see a student, lack of comfort with the teaching role,

and lack of continuity in the teaching experience (Amella et al., 1999; Brooks &

Niederhauser, 2010).

Despite many of the barriers noted above, in a study conducted among neonatal

nurse practitioner preceptors, Wilson, Bodin, Hoffman, and Vincent (2009) found that

preceptors showed enthusiasm for many of the incentives suggested. Despite the

knowledge of both how to ease the burden on preceptors and also how to incentivize

preceptors, locating and retaining them remained a struggle (Wilson et al., 2009). In their

analysis of the rewards issued by academic institutions to those who agree to precept,

Campbell and Hawkins (2007) found a tremendous amount of variation. Incentives

offered to preceptors ranged from the common (such as a certificate of recognition or the

use of precepting hours to recertify), to the uncommon (such as faculty appointment,

tuition discounts, or financial incentives). This variation in incentives reveals some of the

challenges that APRNs face when choosing whether or not to precept.

Advanced Practice Nurse Education Programs

Shifting away from the barriers encountered by preceptors themselves, the

literature also details views on preceptorship from the perspective of educational

institutions. Research in this area outlines that specific APRN program requirements and

State Board of Nursing requirements may limit preceptor selection. A program may

develop qualifications for a preceptor, such as the length of time a preceptor has been in

practice, the practice setting, or the type of practice (Wilson et al., 2009; Oregon State

Board of Nursing Administrative Rules, 2013), which has the potential to limit APRNs

who are able and willing to precept. Programs may also refrain from placing a student

with a newly graduated APRN, or may not want to place an FNP student in an intensive

care unit (ICU) setting with an adult geriatric acute care nurse practitioner due to scope of

practice considerations (NONPF, 2014). Logan, Kovacs, and Barry (2015) explored the

difficulties that academic medical centers have navigating APRN clinical precepting; the

most significant issue they noted was poor communication between different schools of

nursing and the medical center, along with varied requirements from each school. Additionally, they found that APRN students often presented with inconsistent clinical training, some lacking basic skills, which presented difficulties once students were at their sites within the system. This issue was the most prevalent at pediatric sites, which are the hardest to locate and secure (Logan et al., 2015).

A comprehensive review of the literature revealed few studies that explored student expectations and perceptions of their clinical rotations. There also appears to be a lack of consideration of students' perceived quality of the rotation, or an analysis of their skill development. Despite the lack of research in this area among APRN students, there is some literature related to this topic in the graduate medical world (Lubetkin, Krakov, & Storey-Johnson, 1999). As previously noted, maximizing learning during an APRN student's time with a high-level preceptor is essential to producing qualified future APRNs. There are a number of studies available exploring this area at the undergraduate nursing education level. Bjork, Berntsen, Brynildsen, and Hestetun (2014), explored student perceptions of learning in clinical sites outside of traditional hospital settings. There is also worthwhile analysis of the quality of preceptorship in the pharmacy education literature, but little in the graduate APRN nursing sphere (Buck, Wilkinson, & Phillips, 2014; Wilkinson, Couldry, Phillips, & Buck, 2013).

In 2002, Chan developed the *Clinical Learning Environment Inventory*, a metric that has been tested and validated as a method of determining which clinical placements may be best for a student. However, this metric—developed for hospital-based RNs— was not designed for APRNs. Many APRN programs survey students after a rotation to determine the quality of their experience, and these programs also survey preceptors

about student performance, but they do not survey students at other time points, prior to,

or during preceptorship (Forsberg et al., 2015; M. McKimmy, personal communication,

May 17, 2015).

Early Advanced Practice Nursing Student Evaluation and Rural Careers

As experts in the field of nursing education have pointed out, redeveloping and

improving APRN clinical education must take a multi-faceted approach (Giddens et al.,

2014). A key component of this approach will be to evaluate student experiences at

multiple time points in relation to their clinical placements in an effort to maximize the

efficacy of their time spent in clinic with preceptors. Currently, little is known about

graduate APRN students' attitudes, perceptions, and expectations relating to their clinical

site placement. Rasmor, Kooienga, Brown, and Probst (2014) have specifically analyzed

APRN student perceptions about working with low income and uninsured patients at free

clinics, but there is a lack of studies about broader student expectations independent of

specific patient populations. As it has been shown, finding clinical placements for APRN

students is difficult for many reasons. However, Budd et al. (2014) have done specific

work analyzing APRN students' future plans for work after graduation. As part of their

analysis, they found that one of the major factors that potentially drove a graduating

APRN student to work in primary care was clinical experience with a preceptor working

in primary care. Their research showed similar results for APRN students interested in

practicing in rural environments. It would seem logical that an APRN student who is

interested in a career in primary care or rural healthcare would have the opportunity to

complete clinical in a setting that is in line with his or her interests, which would then

result in professional employment in a matched environment. Additionally, while faculty charged with APRN student placement may have various levels of relationships with their students, it is presumptive to assume that all faculty have a good knowledge of each student's career goals in mind (M. McKimmy, personal communication, May 17, 2015).

Research has shown that students tend to gravitate toward future careers that are reflective of their clinical experiences (Budd et al., 2014). When we consider this reality, coupled with the knowledge that the U.S. healthcare system faces a deficit of providers working in primary care and rural settings, we see the essential need to properly identify students' goals prior to clinical placement in an effort to direct them to career placements they may desire, while also improving the supply of practitioners in these settings. One facet of the literature on this topic is that the students most frequently included in analysis of future careers in rural settings are primary care track APRN students. However, this ignores the reality that robust rural healthcare is supported by multiple disciplines, such as mental health and those trained in inpatient specialties. Assessing students' desires to work in a rural setting across all APRN specialties is an important step to building a more complete rural healthcare workforce.

Project Proposal

The proposed solution to this gap in the literature is to undertake an exploration of the perceptions and expectations APRN students have at multiple time points in their clinical education. Additionally, this project will seek to elicit information from students across all APRN certification tracks about their interest in a future career in a rural setting, and how to better understand what characteristics influence this interest.

Approach to the Conduct of the Project

Setting

This proposed project setting is OHSU SON. The purpose of this setting is twofold. First, this project is intended to have some quality improvement outcomes on the OHSU APRN training program; using this setting is essential to achieve that aim. Secondly, OHSU SON houses multiple APRN certification programs, including: Family Nurse Practitioner (FNP), Certified Nurse Midwife (CNM), Psychiatric Mental Health Nurse Practitioner (PMHNP), Pediatric Nurse Practitioner (PNP), Adult Gerontological Acute Care Nurse Practitioner (AGACNP), and Nurse Anesthesia (CRNA) tracks. The use of OHSU SON setting allows for this project to be representative across multiple APRN disciplines.

Currently, OHSU SON utilizes some evaluative measures of both students and preceptors in relation to clinical rotations. However, the OHSU APRN clinical site placement program is undergoing significant changes geared toward quality improvement and the retention of APRN preceptors. It is hoped that this project will support this aim, and add a needed component of student input to this improvement process.

Some perceived barriers of this project would be adequate respondent numbers and participation. Aspects of this study setting that will act as facilitators include a vested desire on the part of students to improve their own educational experience, and the desire of OHSU SON to improve both student satisfaction and outcomes.

Participants/Population

   A convenience sample of APRN students currently enrolled at OHSU SON,
including FNP, CNM, PMHNP, PNP, AGACNP, and Nurse Anesthesia certification
programs will be used. All students will be surveyed regardless of progress in
matriculation or number of clinical rotations completed. Students' email addresses will be
collected from the OHSU SON graduate student email exchange database. Formal OHSU
Institutional Review Board approval will be sought and secured. Inclusion criteria will
comprise being a current APRN student at OHSU SON in the FNP, CNM, PMHNP,
PNP, AGACNP, or Nurse Anesthesia track, along with completion of the Survey
Monkey survey. Exclusion criteria will include registration in the Health Systems and
Organizational Leadership (HSOL) certification track The reasoning for this last
exclusion is that HSOL students do not engage in direct patient care during their clinical
experiences.

Proposed Implementation

Implementation Procedure

An online Survey Monkey survey will be utilized, and will contain a variety of multiple choice questions tailored to collect demographic data, identify current or completed student certification program, identify interest in rural health, and to identify experiences in (or preferences related to) clinical rotations. Utilizing the OHSU SON graduate student email exchange database, an email containing the electronic survey link will be sent to all active addresses. Recipients will then have the option to complete or disregard the survey. All survey data will be de-identified. A short explanation of the survey will be attached to the email itself. Each page of the survey will contain a link allowing participants to stop the survey at any time. Participants will be informed that in exchange for participation, 10 respondents will be selected using random number table to receive a $10 Starbucks gift card. The survey email will be issued in coordination with the start of the Fall 2015 term at OHSU SON. Once either a response rate of at least 50 percent is reached or 21 days has passed, the survey will be closed. The objective of this timeframe is to achieve a composite of students who have not yet engaged in a clinical rotation, those who have some experience in clinical rotations, and those who are far into their program. The survey itself will include questions common to all respondents, but also those tailored specifically to each of the four following groups: APRN students prior to any graduate clinical placement/experience, APRN students who have completed at least one graduate clinical placement/experience, APRN students enrolled in the rural

health track, and APRN students not enrolled in the rural health track. Once the survey

has been closed, appropriate statistical and data analysis will be employed.

Final Report

Implementation of the Project

To establish face validity and identify any flaws in the survey, the intended

survey email was sent to five APRN students representing different certification tracks

for pre-testing. The survey experience was reviewed with each respondent and

appropriate changes were made to improve the survey experience. These five students did

not participate in the "live" survey data collection.

Email addresses of all current OHSU APRN students were obtained from the

OHSU email exchange database. A survey invitation email was then sent out to 147

students enrolled in the Fall of 2015. Three of the email addresses were no longer active,

leaving the total invited study participants at 144. The choice was made to not dispense a

study incentive, in the form of a gift card, based on feedback from the OHSU IRB. After

two weeks had elapsed, a second reminder email was sent out to invite student

participation in the survey. After 21 days had elapsed, the survey response rate had not

yet reached the desired goal of 50%. A study revision application was sent to the OHSU

IRB asking for the allowance of two additional reminder emails, for a total of four emails

to students. This was approved by the OHSU IRB, and an additional reminder email was

sent out immediately. After the third email, a 50% response rate was reached, about 30

days had elapsed. No additional invitation emails were needed and the survey was closed

electronically to new responses.

Study Outcomes: Demographics and Rural Health

A response rate of 50% was achieved (n=72) across all certification tracks with

FNP (30, 63%), PNP (6, 46%), CNM (10, 41%), PMHNP (13, 40%), Nurse Anesthesia

(3, 14%), AGACNP (8, 50%), and two respondents skipped this question. The majority

of respondents were Caucasian (85%), female (87%), and between the ages of 30-39

(45%). Most respondents reported being from non-rural areas (60%). The vast majority of

survey respondents reported that they were not the first in their family to attend college

(76%), and that most of their parents had achieved either a bachelor's (24%) or master's

degree (24%). Finally, the majority of respondents had been working as registered nurses

for three to five years, with 14% never having worked as a registered nurse before.

In relation to rural health specifically, 52% of respondents reported that they were

not in the OHSU SON Rural Health Track, while 20% reported that that were. 15%

reported that they did not know what the Rural Health track was, and 12% had yet to

decide on enrollment in the track. Of those enrolled in the Rural Health Track (14), 10

were in the FNP program, three were in the PMHNP program, and one was in the PNP

program. It is the understanding of the author that the Rural Health Track is only open to

students enrolled in the FNP and PMHNP program, so it is not clear if the PNP response

was an outlier, or not. A majority of respondents across all certification tracks reported an

interest in completing a clinical rotation in a rural area (76%). When these responses

were further broken down, it was apparent that there was a wide interest in completing

rural health rotations within each specific APRN certification track, with 61% of PMHNP

respondents, 80% of CNM respondents, 84% of PNP respondents, 93% of FNP

respondents, 66% of Nurse Anesthesia respondents, and 25% of AGACNP respondents

indicating high interest in a rural health rotation. A predictable decrease in desire to

practice in a rural setting among APRN certification tracks that are more commonly

associated with practice in both the inpatient, and academic medical center setting was

noted. For example, most APRNs practicing in rural regions are likely FNPs given their

scope of practice, versus most APRNs practicing in ICU settings being AGACNPs,

which reflects the above results in an appropriate fashion. In response to the question "do

you have an interest in practicing in a rural setting after you graduate ?", 57% of

respondents answered "yes". When looking deeper at each certification track, 38% of

PMHNP students, 70% of CNM students, 33% of PNP students, 76% of FNP students,

66% of Nurse Anesthesia students, and 12% of AGACNP students reported interest in

employment in a rural setting after graduation.

      74% of respondents were interested in programs designed to exchange service in a

rural area for financial support, while only 69% were aware of such programs. 33% of

respondents reported speaking a second language proficiently, most of whom spoke

Spanish. Additionally, 38% of respondents across all certification tracks reported a desire

to complete a clinical rotation in a setting conducted in a language other than English.

Study Outcomes: Pre-Clinical Group

      Out of the whole study respondent population (72), 33 or approximately 45% of

respondents had not yet completed an APRN clinical rotation. Among these respondents,

68% reported a desire to have OHSU locate and assign clinical rotations for them, versus

finding one on their own. Among this group of pre-clinical respondents, 68% reported

wanting to have a choice in their clinical rotation. 53% percent of respondents reported a

preference of clinical rotations in both inpatient and outpatient settings. Different APRN

certification tracks showed expected trends, with typically inpatient specialties preferring

an inpatient training setting, versus traditionally outpatient certifications preferring

outpatient settings. 93% of students across all certification tracks felt that students should

be placed in clinical rotations that reflect their interests, if possible. The majority of

respondents (40%) in this group reported being willing to commute up to 30 minutes to

their clinical site. Slightly less (31%) agreed to commute up to an hour to their assigned

site. Most respondents in this group reported the expectation of seeing at least 5-6

patients independently during a routine clinical rotation day, and 71% expected to be able

to access, and chart in the electronic health record (or paper record) at their assigned site.

Students in the pre-clinical respondent group ranked comprehensive physical exam,

medication prescribing management, laboratory interpretation, diagnostic imaging

ordering/interpretation and EKG interpretation as the most important skills they expected

to master in their prospective clinical rotations. No students in this group felt that gender

sameness of preceptor to student was important, and most respondents felt that their

prospective preceptors should have been practicing for 2-3 years prior to having students.

Sixty five percent of respondents felt that being placed with another APRN student at

their same site would be favorable, and 81% asked to be placed in a site with a mixture of

professionals (MDs, PAs, etc.). Finally, 94% of respondents in the pre-clinical group

noted that they would like to precept APRN students after graduation.

Study Outcomes: Post-Clinical Group

Out of the respondent population, approximately 55% of respondents had completed an APRN clinical rotation. Among this group, the majority reported having completed five or more clinical rotations. 80% of respondents in this group reported completing rotations in an outpatient setting, versus 11% completing only outpatient rotations, and 9% completing a mix of both inpatient and outpatient rotations. Fifty eight percent of respondents in this group felt that they had a choice in their clinical rotation placement. Ninety seven percent of respondents felt that their clinical rotations prepared them to be APRNs and all students in this group felt that they gained new skills in their clinical rotations. With regard to specific skills, 94% learned medication prescribing and management, 88% laboratory interpretation, 80% comprehensive physical exam, 60% diagnostic imaging ordering/interpretation, 31% EKG interpretation, 71% PAP/Pelvic exam, 32% suturing, 31% joint injection, 3% anesthesia induction, 11% labor and delivery, and 28% psychotherapy. These findings reflected skills that are unique to programs in a specific way, for example all nurse anesthesia students reported learning anesthesia induction, while no PMHNP students reported learning this skill. Ninety one percent of respondents felt that their preceptors were qualified to practice as APRNs, while only 65% felt that their preceptors were satisfactory clinical teachers. The majority of respondents felt that they did not have enough time in the day to master needed clinical skills. Only 55% of respondents in this group were able to access the electronic health record at their site, and only 36% were permitted to chart at their site (paper or electronic). 58% of respondents reported being permitted to see patients independently on a routine basis, usually an average of 5-6 patients per day. 86% of respondents in the post

clinical group reported that they were only assigned clinical tasks they were comfortable

with and 91% reported that their preceptors were open to answering questions. 77% of

respondents felt that their preceptors did not have sufficient time in the day to teach them,

and 86% reported being treated with respect by their preceptors on a routine basis.

Overall, 72% of respondents reported being satisfied with their clinical rotations with no

significant variation across certification track, though there was no representation in this

group from PNP and Nurse Anesthesia students. 89% of respondents reported having

interest in precepting a student once they were practicing as an APRN.

Link to Literature

At the time of the initiation of this project, there was no evidence of similar

projects present in the literature base. As such, it was difficult to make a side by side

comparison of the current findings, to the findings in an alternate, similar project.

However, the data that this project collected does touch on other themes in the literature.

Firstly, on the topic of rural healthcare, we know that the literature presents us with a

number of ongoing concepts. There is currently a statewide deficit of healthcare

providers in rural regions, and healthcare institutions in rural regions have struggled to

recruit and retain qualified healthcare providers (Knapp et al., 1999). This knowledge

stands in contrast to the findings of this project, in which a vast majority of respondents

across most APRN certification tracks appear to be interested not only in training in rural

environments, but also in working in rural environments after graduation. Additionally,

this was true even of a respondent base that is largely made of up students from urban

areas. Additionally, the literature demonstrates that students who have clinical

experiences in rural regions tend to gravitate towards careers in rural health, this fact

supports the findings of this project (Budd et al., 2014).

There are currently no evaluations of APRN student perceptions and expectations

of their clinical rotations at different time points in the clinical education process in the

literature. However, the literature does present a number of facts that relate well to the

results of this project. Locating and retaining qualified preceptors remains a nationwide

challenge in graduate nursing education (Campbell & Hawkins, 2007). This stands at

odds with the findings of this project, which noted that in both pre and post clinical

groups, 90% of APRN students reported a desire to precept after graduation.

It is not clear how the majority of students wish to be preceptors when in practice,

while there is a nationwide shortage of preceptors. Students in the post clinical group

reported that in general, they did not have sufficient time to master the needed clinical

skills, and they reported that their preceptors did not have enough time to teach them.

Both of these themes already exist strongly in the literature. Most other works on this

topic have found that lack of time is the major negative force in the lack of, and poor

quality of preceptors. Lastly, only 65% of students in the post clinical group reported that

their preceptors were satisfactory teachers. This touches on the points made in multiple

other studies that lack of formal preceptor training drives variability in the experience,

and also leads to a lack of preceptors in general (Logan et al., 2015).

Practice Related Implications

The findings of this project outline a number of central themes, first relating to

rural health, and then on the topics of APRN precepting. With regard to rural health, the

data collected would suggest that there was wide spread interest in the OHSU SON Rural

Health Track, in addition to rural health rotations, and future careers in rural health. The responses suggest that it may be worthwhile to consider expanding this program beyond just the PMHNP and FNP programs, as students across other certification tracks showed notable interest in rural health as well. The project findings also show that there was a majority interest in loan repayment programs, however there was a disconnect between the percentage of students who are interested in these programs (74%) and those who actually know details about them (69%). As such, it may be worth investing in additional education about such service programs, and in building a link between rural healthcare facilities to facilitate employment after graduation. Finally, there is likely an untapped interest among the respondent group in completing clinical rotations in a language other than English. Because most of these sites tend to be in either rural or underserved areas, some attention should be paid to this finding.

Regarding the data collected from the pre and post clinical groups, a number of large and important themes arise upon closer examination. Firstly, the majority (72%) of APRN students surveyed are pleased with the clinical training program offered to them by OHSU SON. The collected data showed that respondents generally were interested in having more than one student at each site, and in working with a mixture of healthcare professionals. This could allow for some solutions to the current APRN preceptor shortage. The largest negative findings are that students feel that they do not have enough time to learn properly, that their preceptors do not have enough time to teach them, and that many of their preceptors, while qualified APRNs, are not qualified teachers. As was discussed earlier, time and training are prevalent complaints from preceptors in the literature (Amella, E. J., Brown, L., Resnick, B., & McArthur, D. B., 2001). With this

knowledge, some logical solutions include efforts to allow more time in clinic for

students, finding ways to compensate preceptors to allow more time for training, and

developing formal preceptor training programs of workshops. Variations of these efforts

already exist, including at OHSU, however there may be room for further work in this

area. Students across most certification tracks ranked prescribing of medication,

lab/diagnostic imagining interpretation and ordering, and EKG interpretation as important

desired skill in the pre clinical group. We see in comparison in the post clinical group that

achievement of these skills was by no means guaranteed, with 31% obtaining sufficient

skills in EKG interpretation and only 60% having exposure to ordering and interpreting

diagnostic imaging. This issue could be directly addressed by the development of a core

competencies that was provided to preceptors in an effort to ensure these skills were

developed while a student was in clinic. Lastly, and perhaps most significant from a skill

perspective, only 55% of students were able to access the electronic health record (EHR)

at their clinical sites, and only 36% were able to chart in the EHR at their clinical sites.

This issue is a significant one, as proper documentation skills, and mastery of the EHR as

a tool are two of the most essential components to successful clinical practice both as a

student and as a professional APRN. More work needs to be done on the part of academic

institutions and clinical sites to remove barriers to student access to the EHR in order to

ensure improvement in this area.

Summary and Conclusions

The goal of this project was to describe APRN students' interest in rural health,

and also to better understand how APRN students' expectations of their clinical rotations

meshed with their actual experiences. While the ultimate sample size of the project was

small, in that a 50% response rate was achieved, it would seem that many of the findings

are likely representative. An effort was made to include students across all APRN

certification tracks, as this type of project does not exist in the literature, and there are

rarely side by side comparisons of APRN certification tracks. The respondent population

was more heavily weighted towards FNP students , simply based on response trends,

however students across other tracks are at the very least represented. Overall, the project

itself met many of the stated goals, and was able to highlight a number of essential areas

for improvement across APRN education and rural workforce development. Time, lack

of preceptor preparation, and EHR access remain large hurdles, which are all noted

across the literature base and in the data collected. Given that nearly all respondents

noted a desire to precept after graduation, more meaningful work needs to be done to

facilitate this growth, as it may prove to be a large boon to the profession as a whole, as

findings and retaining qualified APRN preceptors is a nationwide problem. Likewise,

bridging the gap between interest in a rural healthcare career and actual placement in

such an employment opportunity will be critical moving forward in order to develop a

robust rural healthcare workforce.

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