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Students' Perspectives Regarding the Quality and Effectiveness of Nurse Practitioner Care in a University Health Center Setting

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NP CARE IN UNIVERSITY HEALTH CENTER SETTING

Abstract

This study aims to explore student perspectives regarding quality and effectiveness of care provided by nurse practitioners (NPs) at a university health center in the Northeastern United States. As the NP role continues to expand, input from their diverse patient populations should be examined. Current university students were surveyed via an electronic link posted to university-affiliated social media pages, reaching an estimated 6,700 members. Seventy percent of participants reported being extremely satisfied, very satisfied, or satisfied with their care (mean of 3.11 on a 1-5 scale). Fifty-seven percent or more of subjects responded positively in terms of symptom management, provider education, and overall health improvement with plan of care. The findings show that NP care is perceived positively by students.

Keywords: nursing, nurse practitioner, primary care, university health center, patient satisfaction, quality of care

Students' Perspectives Regarding the Quality and Effectiveness of Nurse Practitioner Care in a University Health Center Setting

The nurse practitioner (NP) profession has continued to evolve over the past fifty years, with NP roles expanding greatly in more recent years (Society of Trauma Nurses, 2005). NP providers are integrated in healthcare as comprehensive primary care, acute care, and specialty care providers. For university-aged students coming from different parts of the United States and the world, students may lack familiarity with NPs as health care providers. This model of care typically varies across state lines and may not be known internationally. There is evidence in the literature regarding enhanced quality of care for certain patient populations being treated by NPs (Hubbs, 1999; Society of Trauma Nurses, 2005; Newhouse et al., 2011). Research evidence about perceptions university-aged students have about NP care is lacking. The project was designed to target this understudied population and how it perceives the quality and effectiveness of patient care delivered by NPs in a primary care setting such as an on-campus university health center.

The project utilized quality care attributes described by Stanik-Hutt et al. (2013) for its framework. Quality includes the patient's perspective about clinical and experiential pieces of his/her care, along with their idea of effectiveness, which is care that produces the intended result, recovery from the presenting illness, and general patient outcomes (Stanik-Hutt et al., 2013).

Background

While the NP profession started out of a need for more primary care providers (PCP) (O'Brien, 2003), restrictions on medical resident hours provided further impetus for more NP providers (Austin, 2016; Institute of Medicine, 2008). The NP profession has expanded and

continues to expand to include delivery of care in a variety of primary, specialty, acute, and critical care settings (Society of Trauma Nurses, 2005).

There is a good body of research regarding accessibility, quality, efficiency, safety, continuity, and affordability of care provided by NP providers, as well as satisfaction with NP care (Austin, 2016; DeCapua, 2016; Horrocks, Anderson, & Salisbury, 2002; Hubbs, 1999; Newhouse et al., 2011; Rejtar, Ranstrom, & Allcox, 2017). In a systematic review of patient care outcomes after treatment by a NP, it was concluded that NPs provide effective and high-quality care to patients (Newhouse et al., 2011). In all cases, collaboration between a NP and physician provided equal or better care than given by a physician alone (Newhouse et al., 2011). In another study from 2002, it was shown that patients were more satisfied with their care provided by a NP than a doctor (Horrocks et al., 2002). NPs were able to have longer consultations and therefore made more investigations about patient health status than doctors did (Horrocks et al., 2002). They also scored higher on patient satisfaction by offering more advice on self-care and health management (Horrocks et al., 2002). NPs have higher satisfaction in many scenarios and improve patient care in various situations (DeCapua, 2016). At a large tertiary care children's hospital, the implementation of a 24/7 NP coverage model of care led to a reduction in intensive care unit (ICU) transfers from surgical units and an overall greater satisfaction by nurses and attending surgeons (Rejtar et al., 2017).

According to Newhouse et al. (2011), NPs are able to provide safe, effective, and quality care to many different populations and in collaboration with other health care professionals, they are an invaluable asset to improving patient health outcomes. NP-driven patient care also improves communication and increases satisfaction among patients and health care providers

(DeCapua, 2016; Horrocks et al., 2002; Hubbs, 1999; Kilpatrick, Lavoie-Tremblay, Ritchie, Lamothe, & Doran, 2012; Rejtar et al., 2017).

A limited amount of research is available regarding care university-aged patients receive in a university-based health center. Available literature is restricted to specific types of health care, such as mental health, or restricted to specific populations within universities (Medavarapu, 2014) but not necessarily to specific providers. Level of satisfaction with integrated behavioral health program was reported by Funderburk, Fielder, DeMartini, and Flynn (2012) who found that students were typically satisfied with the care they received by behavioral health providers, which included primary care providers and nurses in a university health center setting. On a scale of 1-5, with 1 being extremely unsatisfied and 5 being extremely satisfied, the median was 3.5 in terms of level of satisfaction with the service provided by the behavioral health provider. Further research is needed to investigate perceptions associated with care provided by health care providers to university-aged students and the millennial generation.

The goal of this study was to learn about students' perceived quality and effectiveness in the delivery of primary care by NPs based on their treatment and outcomes of care at the on-campus health center. Are students satisfied with the care they receive from a NP in a primary care setting, such as the university health center?

Methods

Invited participants were current students of the studied university in the Northeast of United States who were recruited via six student groups on Facebook, which were affiliated with the university. The specific Facebook social media pages require members to register with a university-provided email address for access to the content. The participant pool was based on a convenience sample of university student volunteers. Per official university records, in 2017, the

degree-seeking student body consisted of 35,635 students and comprised of ~51% female and ~49% male reported gender status with average age of an undergraduate student being 21 years (degree seeking undergraduate students account for ~56% of all students). The ethnic profile of the students is 67% White, 16% Asian, 10% Hispanic, 6% African-American, <1% Native American with 20% of students being international students.

The university students were eligible to participate in the study if they belonged to one of the Facebook social media groups and clicked on a survey web link inviting them to participate in the study. Participants were excluded if they reported that they were not seen or were unsure if they were seen by a NP at the university health center.

The study was conducted after the review and approval from the university institutional review board. There were no ethical concerns associated with this study. Participants consented electronically before the survey was opened. Emphasis was made that all participation was voluntary and anonymous.

In total, the members of university Facebook social media groups added up to 32,515 in spring 2017. The number is not indicative of the total number of students reached, as many are members of multiple groups or have already graduated the university and have not removed themselves from the groups. After these considerations were taken into account per university sources, it is estimated that about 6,700 students were reached (~20% of the student body). Ninety-seven students agreed to participate in the study, which corresponds to a 1.45% response rate.

An electronic survey was utilized for data collection using an online survey platform, Qualtrics (Provo, UT). Students who clicked on the invitation weblink on the Facebook social media page were automatically redirected to the Qualtrics survey. The survey included 8

questions. Outside of study eligibility and gender data, the survey included multiple choice questions, 5-point Likert scale questions, and one open-ended question.

Development of the survey was based on the quality care attributes as described by Stanik-Hutt et al. (2013) including the patient's perspective about clinical and experiential pieces of his/her care, along with their idea of effectiveness, which is care that produces the intended result, recovery from the presenting illness, and general patient outcomes. These attributes informed formulation of questions developed for this survey, which inquired about overall satisfaction, symptom management, provider effectiveness, and overall health improvement associated with care provided by NPs at the university health center. Two content experts from healthcare and nursing fields reviewed the questions to assure the question content was closely matched with quality care attributes proposed by Stanik-Hutt et al. (2013) and applicable to the studied population and setting.

Responses for the Likert scale questions were labeled 1 through 5, with 1 corresponding to "not at all," 2 corresponding to "somewhat," 3 corresponding to "satisfied," 4 corresponding to "very," and 5 corresponding to "extremely." The Likert scale enabled capture of the full range of students' perspectives. The open-ended question allowed participants to share personal experiences about their care at the studied university health center.

One person was responsible for collection of the data. There was no compensation associated with completion of this survey. Although reliability was not measured in this specific study, Likert scale questions have a recommended reliability of 0.65 and 0.8 using Cronbach's alpha measurement (Goforth, 2015) with five-point Likert scale questions generally having a reliability of 0.84 (Lissitz & Green, 1975). A cross-sectional, mixed-method quantitative study design with a qualitative component was utilized for this project.

Results

Survey results were captured and analyzed by an online survey platform, Qualtrics (Provo, UT). The survey was open from March 24 to April 11, 2017. Quantitative data were analyzed using basic descriptive statistical methods. For the open-ended section, responses were analyzed for recurring themes.

In the 18 days that the survey was open, 97 responses were recorded. Out of these 97 responses, 16% of the participants were male and 84% were female. Of these respondents, 67% were seen by a NP, 18% did not see a NP, and 16% were unsure if they were seen by a NP. The survey ended at this point for those that responded that they did not see or were unsure if they saw a NP at the university health center. Some attrition (3 respondents) was observed after the initial questions.

For 62 participants that were eligible to participate in the study, the survey continued. The first question asked, "Overall, how satisfied were you with the care you received by the NP in your most recent or notable visit?" In total, 70% were satisfied or higher with their care by the NP. The results show that 15% of students were extremely satisfied, 24% very satisfied, 31% satisfied, 19% somewhat satisfied, and 11% not satisfied at all with their care. Figure 1 shows a normal distribution graph, with a mean of 3.11 (indicating a higher than satisfied result), median of 3.00, and standard deviation of 1.21, where 1 is not satisfied at all and 5 is extremely satisfied.

The next question was, "How well do you feel your symptoms were managed, in terms of medications or alternative treatments received?" Overall, 58% of respondents perceived their symptom management to be handled positively ("well" to "extremely well"). The mean of the responses on a 1-5 scale was 2.84, median was 3.00, and standard deviation was 1.32.

Subsequently, participants were surveyed on, "How effective was your provider in educating you

about your illness and ways of getting better?” In total, 57% of the sample reported positive effectiveness of care. The mean for this question was 2.85, median was 3.00, and standard deviation was 1.24.

The next question asked, “Was your overall health improved after seeing a NP and executing the plan of care that she/he recommended?” The majority, 59%, of the participants responded “yes”, while 22% said “no” and another 19% said “neither yes nor no” (see Figure 2). For the 13 participants that responded “no” to this question, they were surveyed further. That question read, “If your answer to the previous question is no, did you require additional treatment in another healthcare center such as urgent care or the emergency room?” Of the remaining respondents, 8 of these participants responded, “yes, because the level of care provided by NP was of low quality”, 2 participants responded, “yes, because the NP referred me due to my symptoms or severity of illness”, and the other 3 responded “no”.

To further investigate the quality of NP care at this university health center, respondents were asked to provide additional information in an open-ended response format. The prompt read: “Any additional comments regarding the care you received by a NP at the university as opposed to your regular primary care provider can be listed below. If you have been receiving care by NP or PA in your regular PCP office, please include that fact as well.” There were 16 responses recorded for this question. Recurring themes were identified in these responses and included medication delivery, patient expectations, factors out of provider control, potential confusion about type of the provider, and quality of care.

In terms of medication delivery, one participant stated that he/she “was prescribed medication that could have given [him/her] a [specific complication].” Patient expectations was another theme observed, with one participant stating that he/she “was very ill, unable to sleep at

night, and was denied medication/antibiotic[s].” Factors out of provider control emerged as another theme with students commenting that they were “frustrated by the service at the front desk” or who thought it “takes way too long to see anyone.” Some participants referred to NPs as doctors, which formed another response theme, potential confusion about type of the provider. Lastly, there was feedback regarding quality of care, such as “the NP didn’t ask standard questions” and, in reference to the provider, “it seemed like she wasn’t very competent in either and just had general knowledge.” A different response was also seen with a participant commenting he/she “had the NP go above and beyond emailing [him/her] and following up with [his/her] care.”

Discussion

The health center that was studied is accessible to all undergraduate and certain graduate students at a medium-sized private university in the Northeastern United States. There are seven NPs with one supervising physician and one sports medicine physician. Preventative and selected primary care services are offered, with no emergency services provided.

Overall findings from this survey were positive yielding a median of 3.00 for all of the Likert questions. Seventy percent of participants reported being extremely satisfied, very satisfied, or satisfied with their care (mean of 3.11). Fifty-seven percent or more of subjects responded positively in terms of symptom management, provider education, and overall health improvement with plan of care. Such findings coincide with available research evidence on quality and satisfaction with NP-driven patient care (DeCapua, 2016; Horrocks et al., 2002; Hubbs, 1999; Kilpatrick et al., 2012; Newhouse et al., 2011; Rejtar et al., 2017). Limited research evidence exists in regards to patient satisfaction and other attributes of care provided in

university health care centers and especially with specific type of providers (Funderburk et al., 2012; Medavarapu, 2014); thus, our findings add to this important body of evidence.

When looking at the open-ended question and themes observed, it was expected that participants would only share comments if they felt strongly, either positively or negatively (Aichholzer, 2013), about the student health center and provided care. Only 16 students offered feedback in the open-ended section, and constructive feedback was expected. From the comments, a salient takeaway was that students who were unhappy seemed to want a “quick fix” for illnesses that possibly required more time and patience to recover from or a higher level of care that was not able to be provided at a primary care setting such as this one. Another area of discontent for the surveyed students appeared to be logistical issues within the center, which the providers may have only indirect control over. In addition, some participants referred to NPs as doctors, which implied a possibility of doctorally-prepared NPs, but also potential confusion about the provider role.

Since the electronic survey was available to a large cohort of university-aged students and respondents were sampled through convenience, participants’ responses were not able to be controlled that well. A clear limitation of this study was a responder bias as the survey was conducted via social media. Generally, most participants who decide to click a weblink and respond to an online survey either have a very positive or very negative outlook. It was obvious that some of the students who responded to the open-ended question had strong expectations about how their care should have been handled, and their care did not match up with their potentially unrealistic expectations or it outperformed their expectations. These comments, though helpful, are also limited and would have benefitted from more elaboration and clarification in order to have a better understanding of the actual feedback. It is important to

acknowledge these themes while also looking at the function of a university health center, the expectations of care that the millennial generation may have, and limitations of extreme responding with a survey design. Having a focus group for those who responded with open ended feedback could have helped clarify some of the extreme responding. Another limitation is a potential for recall bias due to the fact that the survey did not specify about the participants' most recent health center visit. Participants may not have remembered the details of their health center visit. What could have alleviated such a confounding factor would have been conducting the survey in person as students exited the health center; however, this would have required more time and manpower than was available.

The survey response rate for this study was calculated as 1.45%. There is an average of 30% response rate for online surveys (Saldivar, 2012), which in this case would yield about 2,000 participants. Multiple factors were likely at play, which negatively influenced the survey response rate. The students who were targeted may not have been current university students but were still part of the social media groups and some may have been duplicate members leading to a higher estimated percentage of people reached. The target population was sampled through convenience, with no compensation provided, and only one social media platform was utilized for sample acquisition, which likely lowered the response rate.

Another interesting statistic that was observed was gender distribution of the students who responded to the survey showing 16% of participants as male and 84% of participants as female. Even though it is known that there is a gender bias associated with survey participation (Smith, 2008), it is hard to explain such a big difference with our sample outside of the fact that students from healthcare-related fields (and mostly females) could have been more willing to

participate in this survey as they may be more interested in aiding such evidence than general population.

Facebook is generally thought of as a social media platform used by 25-year-olds and older, which could have decreased our target population reach and response rate. However, one might argue Facebook is popular even in the younger age groups with most recent statistics (Statista, 2018) showing both age groups of 18 to 24-year-olds and 25 to 34-year-olds comprising the same or only slightly different proportion of the total Facebook users (29% each for global reach and 25% versus 18% for U.S.). Similarly, looking at how many people within each age group actually use Facebook, the proportion is quite remarkable with those surveyed in the U.S. confirming that 81% of 18 to 29-year-old people use Facebook and 78% of 30 to 49-year olds do. Among traditional factors surrounding survey research, there may be other factors involved, like information overload, which threaten survey response rate and in the constantly engaging online environment, this may be even more applicable.

To improve response rate and minimize survey respondent burden, the survey included only 8 questions; however, such a decision came at the expected expense of not knowing some valuable details about the sample, its demographics and not including more specific questions about patient satisfaction with care provided by NPs. Specifically, knowing the average age of the surveyed student, their ethnicity and nationality together with social media portal preference for research engagement could have helped with better contextual interpretation of the findings.

The study was useful to gauge students' perspectives regarding care at one university health center. The majority of students responded positively regarding the quality and effectiveness of care they received by a NP provider. Extreme responses were observed due to the nature of survey design and distribution; however, such preliminary feedback offers

important insights. Awareness of these findings will help study this patient population in more detail and with more attention to its specific nuances such as convenience of care and expectations of providers. As overall satisfaction and health was improved by NPs in this study, findings can be used as further evidence to reduce restrictions on NP practice and autonomy. The health care community at large would benefit from extended research on this topic.

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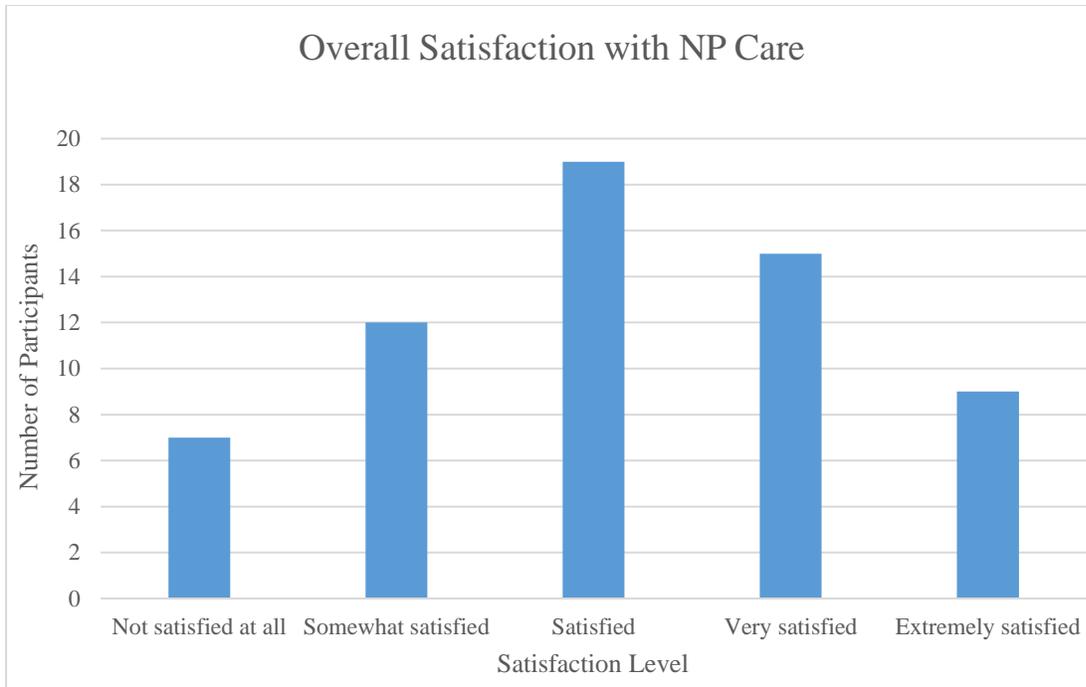


Figure 1. Overall satisfaction with nurse practitioner (NP) care by university students who received care in a university health care center

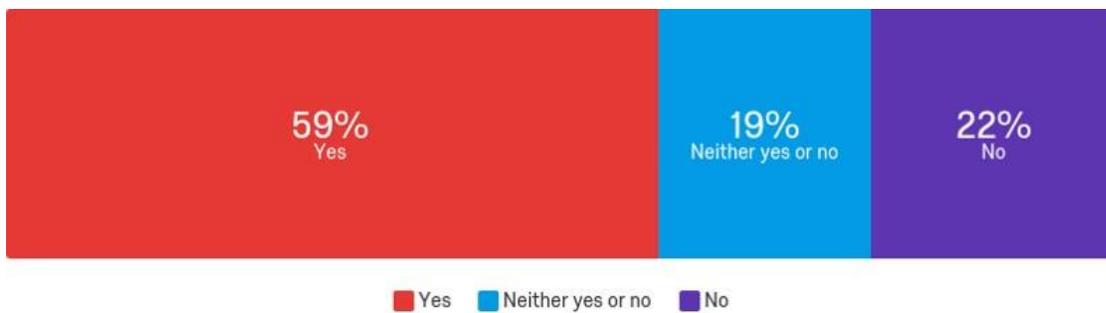


Figure 2. Percentage of university students who received care by nurse practitioner (NP) in the university health center setting and thought their overall health was improved after seeing a NP and executing the plan of care that she/he recommended.