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Patient Satisfaction with Physician Assistants in Family Practice

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PATIENT SATISFACTION WITH PHYSICIAN ASSISTANTS

IN FAMILY PRACTICE

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ABSTRACT

Introduction: The nation is experiencing an expanding, aging population. As the nation faces an imminent physician shortage, physician assistants (PAs) will be utilized in practice to a greater extent. Maintaining patient satisfaction is important because it improves patient outcomes.

Purpose: The purpose of this study is to evaluate patient satisfaction with PAs in family practice. By researching determinants of satisfaction, this study will identify the factors that influence overall patient satisfaction. The results will indicate what aspects of a patient's visit can be improved upon to increase satisfaction.

Methods: A survey was given at family practice clinics to patients that were examined by a PA. A survey was used to collect data on the patient's satisfaction with PAs, based on specific satisfaction criteria.

Results: A total of 78 surveys were used for data analysis. The average score for overall patient satisfaction with the quality of care provided by the PA was 4.90 out of 5. The only variable that was shown to have a significant influence on patients' overall satisfaction is the patients' perceived role in their healthcare decisions (P=0.001).

Discussion: The results should motivate healthcare providers to have a discussion with patients about their options when it comes to the conditions, treatment plans, and further medical steps. Shared decision-making involves patients as active participants in understanding possible medical options and choosing the most favorable course of action. Engaging patients in their own healthcare will likely increase overall satisfaction.

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Chapter 1: Introduction

Background

This nation is experiencing an expanding, aging population. Demographers describe an aging population as an increase in the proportion of the population of older individuals (Ortman, Velkoff, & Hogan, 2014). The United States Census Bureau projects that by the year 2050, the population of those aged 65 or older in the United States will be 83.7 million, almost double the estimated population of this age group in 2012 (Ortman, et al., 2014). The growing population poses a problem for government programs, such as Social Security and Medicare, but also affects physicians who are expected to provide care to everyone.

The demand for physicians is increasing faster than the supply. The Association of American Medical Colleges (AAMC) estimates the nation will face a shortage of 46,000 to 90,000 physicians by 2025. In a study conducted in 2015 for the AAMC, shortages are projected for both primary and specialty care, with specialty shortages becoming especially drastic. This study projects a shortage of between 12,000 and 31,000 primary care physicians and between 28,000 and 63,000 non-primary care physicians (IHS, 2015).

As the nation faces an imminent physician shortage, physician assistants (PAs) will be utilized in medical practices to a greater extent. The United States Bureau of Labor Statistics projects PA employment to increase 38 percent from 2012 to 2022, which is much faster than the average 11 percent increase of all total occupations during this same time period (United States Department of Labor, 2014). The Accreditation Review Commission on Education for the Physician Assistant, Inc. (ARC-PA) is the

agency that grants PA program accreditation. The ARC-PA reports 200 programs in 2015 are accredited and 77 programs are in the queue for seeking accreditation, for a projected total of 277 accredited programs by 2020. These numbers reflect almost a 40 percent increase in accredited PA programs in just 5 years (Accreditation Review Commission on Education for the Physician Assistant, Inc., 2015). An increase in accredited PA programs results in more PAs trained for the healthcare workforce. PAs can help offset the physician shortages in all areas of medicine (American Academy of Physician Assistants (AAPA), 2014).

PAs are educated in a graduate-level didactic and clinical program. PAs are trained as generalists and are able to provide care in a variety of medical settings, from family practice to specialties. They work in physician-PA teams, which improve the coordination of care and extends the care that physicians provide (AAPA, 2014). PAs are essential for increasing access to care and improving outcomes for better health of their patients through a strong belief in patient education and practice in locations of need (AAPA, 2014). They diagnose and treat disease, prescribe medications, and promote the health of their patients (AAPA, 2014). PAs are compassionate, ready to deliver healthcare to people in need, and strive to decrease healthcare demand through effective preventive care (AAPA, 2014). Healthy People 2020 is an initiative headed by the U.S. Department of Health and Human Services, which states four foundational health principles that align with the type of care that PAs provide, to help "people to live longer through preventing disease, eliminating health disparities, creating environments that promote good health, and promoting healthy behaviors through all life stages" (AAPA, 2014).

PAs are fundamental to the healthcare system because of the major benefits that these providers supply, such as improving prevention and education of disease, and coordination of care. Because of their general training background, PAs have flexibility and are able to respond to changing healthcare needs. They are educated in a collaborative style, which improves patient outcomes and coordination of care. After being educated and trained by PAs and physicians in classes and clinical rotations, PAs develop a similarity to physicians in their medical reasoning. Often PA education is described as following the physician model of education and results in standardization in the clinical setting. PAs alleviate some of the routine work for physicians by extending the care those physicians provide and increase access to care for the patient population (AAPA, 2014).

As this transition to increased PA use occurs, patient satisfaction must be considered, so that there is not a decrease in patient satisfaction in the process. Aspects that affect patient satisfaction specifically are patient expectations, wait time, communication, their confidence and trust in their provider, team effectiveness, personal health, quality of care, patient education, and overall satisfaction (Kipnis, Rhodes, Burchill, & Datner, 2013; Marco, Davis, Chang, Mann, & Olson, 2015; Sitzia & Wood, 1997).

A patient's satisfaction with their healthcare provider is essential. One study in particular found that if a patient is satisfied with their overall care, then a patient is more likely to follow the treatment plan given by the PA (Kipnis, et al., 2013). The study by Kipnis, et al. (2013) recognizes that clinicians need to examine healthcare services from a patient's point of view and to take into account patient satisfaction. Patient satisfaction in

healthcare varies depending on the occurrences, values, expectations, interpersonal comparison, and entitlement of the patient (Kipnis, et al., 2013). Another study by Marco, et al., (2015) found that satisfaction did not vary significantly with patient gender, patient ethnicity, physician gender, physician ethnicity, or patient-physician gender concordance. This study also found patient satisfaction is associated with improved patient compliance with therapy, reduced malpractice risk, and improved job satisfaction (Marco, et al., 2015).

Problem Statement

As PAs are increasingly relied upon for extending the care that physicians provide to a growing population, maintaining a high level of patient satisfaction with PA providers is essential because higher levels of patient satisfaction have been shown to improve patient compliance to medication, treatment plans, and overall increases patient outcomes (Allen, 2013). Patients are more likely to adhere to the advice and recommendations of their providers, and follow up with their providers when satisfied with the care they receive (Allen, 2013). Improved relationships with patients and healthcare providers reduce the number of hospitalizations and ultimately lower healthcare cost (Allen, 2013). In addition to an improvement in patient well-being, increased patient satisfaction reduces malpractice risk and improves job satisfaction among providers (Allen, 2013).

Purpose

The purpose of this study is to analyze and evaluate patient satisfaction with PAs in family practice settings. By researching determinants of satisfaction, this study will

identify the factors that influence overall patient satisfaction. The results will indicate what aspects of a patient's visit can be improved in order to increase patient satisfaction.

Research Questions

This study will address the following questions about patient satisfaction with PAs in family practice settings:

1. How do specific factors, such as wait time, previous experience with PA, communication during the visit, and patients' perceived role in their own healthcare decisions, affect overall patient satisfaction with PAs?
2. What variables have the greatest effect on patient satisfaction with PAs?
3. Overall, how satisfied are patients with PAs?

Significance of the Study

The results of this research will reveal patient satisfaction with PAs. The findings will be significant and valuable to PAs and employers, so the factors that truly are affecting each patient's visit to family practice clinics can be addressed. For newly graduated PAs beginning their practices, PAs can be aware of the main factors that drive a patient's satisfaction and implement the important aspects identified in the study while building their patient population at the clinic or hospital. The patient population that seeks healthcare will benefit because PAs will be striving to improve upon the patient's level of care and satisfaction.

Definition of Terms

To clarify terms used in this research, the following are pertinent definitions to this study. Family practice is the care provided by healthcare providers who are specifically trained and skilled for patient care in a generalist setting. Family practice

consists of providing initial and continuing healthcare for persons of any age, with any sign, symptom, or health concern. Family practice is performed and managed by a personal physician often collaborating with other health professionals, such as PAs. Family practice promotes effective communication with patients and encourages the role of the patient in their healthcare (American Academy of Family Physicians, 2015).

Urbanized areas, according to the Census Bureau's 2010 definition, "represent densely developed territory, and encompass residential, commercial, and other non-residential urban land uses." To qualify as an urban area, the territory identified must encompass 50,000 or more people (The United States Census Bureau, 2010). Suburban clusters consist of at least 2,500 but less than 50,000 people (The United States Census Bureau, 2010).

Chapter 2: Literature Review

Introduction

The definition of patient satisfaction varies depending on the variables analyzed. Various models of patient satisfaction that have been examined have attempted to define and interpret the idea of determining individual perceptions (Sitzia & Wood, 1997). Variables of satisfaction are examined in this literature review in relation to the previous literature on expectations, demographics, and psychosocial variables. The variables are distinguished from the multi-dimensional components of satisfaction as aspects of the delivery and quality of healthcare. Several factors can determine satisfaction, but only five social-psychological variables have been proposed as probable determinants of satisfaction with healthcare (Sitzia & Wood, 1997). One of the variables is occurrence, in which the event actually takes place and individual's perception of what occurred (Sitzia & Wood, 1997). Other variables include the value evaluation of the healthcare encounter, the patient's expectations, and the perceived probable outcome of that association. Another variable is the patients' satisfaction based on their interpersonal comparisons through their rating of the healthcare encounter by comparing it with other encounters experienced previously (Sitzia & Wood, 1997).

The satisfaction variables, if met, can increase patients' overall satisfaction with their providers and enhance their health outcomes as a patient in the healthcare system (Sitzia & Wood, 1997). As the physician shortage continues, physician assistants (PAs) are going to be more commonly implemented, so quality healthcare must incorporate considerations of equity, accessibility, acceptability, efficiency, effectiveness, and appropriateness of meeting the needs of the patient, his or her family, and the community (Sitzia & Wood, 1997). The care that patients receive can be judged on effectiveness,

efficiency, and equality (Sitzia & Wood, 1997). From this research, the aim is to find how specific factors, such as wait time, previous experience with PAs, communication during the visit, and the patients' perceived role in their healthcare decisions affect overall patient satisfaction with PAs in family practice settings. Quantifying this information will enable researchers to find how satisfied patients are with PAs in family practice settings.

Emergency Department

An advantage to researching patient satisfaction in emergency department (ED) settings is that typically no prior provider-patient relationship exists. Patients are encountering their provider for the first time and do not have a relationship with the provider they are seeing. ED care is typically centered on one care event, as other providers outside the emergency setting conduct follow-up care.

Numerous studies have been performed in the EDs with PAs across the United States. A study was conducted at a community hospital with a Level II trauma center in Virginia. In this Virginia study, Counselman, Graffeo, and Hill (2000) administered a survey to evaluate patient satisfaction with PAs in an ED and to determine if patients would be willing to wait longer to be seen primarily by an emergency physician, rather than a PA. The survey asked the patients to rate their degree of satisfaction with their PA provider by placing an "X" on a 100-millimeter visual scale with "unsatisfactory" indicated at the far left end and "very satisfied" on the far right end. The marks were measured to the nearest millimeter and scored. The mean patient satisfaction for those seen by a PA was 93 (95% CI: 90.27 to 95.739) (Counselman, et al., 2000). Eighty-eight percent of the patients indicated they would not be willing to wait any duration to see an

emergency physician rather than a PA immediately in the ED (Counselman, et al., 2000). The researchers were able to conclude that patients were very satisfied overall with the care by a PA who saw the patient in the ED. This finding was true for all patients in this ED surveyed regardless of age, sex, and insurance status (Counselman, et al., 2000).

Soremekun, Takayesu, and Bohan (2011) investigated the wait times and other satisfaction factors in the ED to analyze the impact these variables had on patient satisfaction. The other factors analyzed were staff bedside manner, clear communication, clear discharge instructions, availability of diagnostic tests, and technical competency (Soremekun, et al., 2011). The study examined ED patient satisfaction using the same concepts that have been applied in other service industries, which utilizes the following model: Satisfaction = Perception - Expectation (Soremekun, et al., 2011). The concepts were broken into several groupings, such as the design of the service environment, early interactions during the wait period, occupied time versus unoccupied time, and uncertain waits versus known, finite waits (Soremekun, et al., 2011). This study found that a spatial environment, early interaction with the receptionist, occupied time, finite waits, and starting the process earlier with their PA were shown to increase patients' satisfaction (Soremekun, et al., 2011).

An additional study performed in a Pennsylvania ED by Kipnis, Rhodes, Burchill, and Datner (2013) asked about patients' experiences, such as satisfaction with the care provided, understanding of the treatment, and the likelihood of following the directions provided after discharge. The study was conducted with a survey containing questions on healthcare teamwork, patient satisfaction, and treatment recommendations, which were rated on a scale of 1 to 5 (Kipnis, et al., 2013). The researchers quantified the 1,010

survey responses and calculated if the healthcare team consisting of the nurse, PA, and physician was effective based on four factors (role clarity, shared goals, relationships, and job satisfaction) and compared this to overall patient satisfaction (Kipnis, et al., 2013). The findings revealed that patients who rated the teamwork highly, were also more likely to be highly satisfied with their overall care and also reported more confidence and trust in their provider. Patients were also more likely to follow the treatment plan (Kipnis, et al., 2013).

Another study was performed by Mercer, Hernandez-Boussard, Mahadevan, and Strehlow (2014) in a large suburban, academic Level 1 trauma center. The researchers examined the patient-physician relationship and how satisfaction factors in the ED could build the relationship and increase patient satisfaction by identifying their physician's face when shown pictures of ED physicians, despite the extended wait times and overcrowding of the ED environment (Mercer, et al., 2014). This research analyzed the patients' ability to identify their physician's face and observed if there was a link between recognition of the physician's picture and the patients' overall satisfaction level of their care (Mercer, et al., 2014). The patients were given a 19-question survey to complete on their satisfaction, their ability to identify their provider's picture, their health status, and their demographic information (Mercer, et al., 2014). The results of this study found that patient satisfaction was positively associated with correct physician identification, which means patients rate their overall satisfaction higher when they could recognize their physician's face (Mercer, et al., 2014).

A more recent ED study was performed at a Miami ED by Marco, Davis, Chang, Mann, and Olson (2015). The goal of this prospective study was to identify ED patient

satisfaction and the factors associated with satisfaction during care. The survey asked about the patient's satisfaction on a scale from 1 to 7. The most common factors associated with satisfaction were communication between the PA and the patient, overall ED-patient experience, speed of treatment, and quality of care (Marco, et al., 2015). The factors of dissatisfaction were wait time, treatment of pain, and the nursing staff (Marco, et al., 2015). The survey also found that satisfaction did not vary significantly with patient gender, patient ethnicity, physician gender, physician ethnicity, or patient-physician gender similarity (Marco, et al., 2015). The study found that patient satisfaction is associated with improved patient compliance with therapy, reduced malpractice risk, and improved job satisfaction (Marco, et al., 2015).

Finally, Berg, Crowe, Nyberg, and Burdsal (2012) explored the relationship between PAs and patients regarding the patients' overall satisfaction. The researchers conducted a telephone survey of emergent and urgent trauma patients recently discharged from a Level I trauma center that utilized PAs. They found "patients' perceptions of how a PA treated them as a person influenced their beliefs about the PAs' ability to provide quality care" (Berg, et al., 2012, p. 49). The results indicated that since PAs are in a position to have considerable contact with patients, PAs have the opportunity to develop positive interpersonal perceptions and patient trust, thus increasing patient satisfaction (Berg, et al., 2012). The finding of this study emphasizes the advantage of having PAs as part of the healthcare team (Berg, et al., 2012).

Primary Care

The public's readiness to be seen by a PA in family practice becomes a crucial aspect in finding a solution for the nation's healthcare needs. Dill, Pankow, Erikson, and Shipman's (2013) research indicates that quality of care and patient satisfaction does not suffer when PAs are providing healthcare. However, Dill, et al. report that such conclusions are oversimplified because questions do not specify which patients prefer different provider types, when, and why. Data for this research came from the December 2011-January 2012 round of the Association of American Medical Colleges (AAMC) Consumer Survey. The consumer survey assessed clinically specific scenarios to find the likelihood of a patient wanting to been seen by a PA. In the first scenario, nearly 60 percent of respondents preferred seeing a PA the same day for a worsening cough, rather than waiting to see a physician the next day (Dill, et al., 2013). Those who had previous exposure to a PA were more likely to choose to see one, rather than waiting a day to see a physician. The evidence from this scenario suggests that patients choosing to be seen by a PA sooner, rather than waiting to be seen by a physician, are satisfied with PA care (Dill, et al., 2013).

Similar results were found in the second scenario of the same study. Two out of three respondents preferred to see a PA the same day rather than waiting three days to see a physician for severe headaches (Dill, et al., 2013). When questioned about this scenario, even those without a prior visit to a PA still chose to see a PA sooner rather than the physician later. These findings support the belief that many patients prefer to see PAs more quickly than to wait for a physician (Dill, et al., 2013). The study found that women were more likely than men to have seen a PA, individuals under age 35 were significantly more likely than others to have seen a PA, and whites were less likely than

other racial or ethnic groups to have reported seeing a PA. With evidence suggesting the public is open to having PAs as providers, Dill, et al. suggest further studies into patient satisfaction with PAs in family practice settings should be explored (Dill, et al., 2013).

In another primary care study, Cipher, Hooker, and Sekscenski (2006) researched patient satisfaction with PAs, nurse practitioners (NPs), and physicians simultaneously in an elderly population, aged 65 years and older. These authors stress the importance of their research by stating, "…satisfied patients are more likely to follow through on a clinician's recommendations than are dissatisfied patients" (Cipher, et al., 2006, p. 36). Participants in this study were nationwide, randomly sampled Medicare beneficiaries who identified a primary care provider. The researchers used four standards to assess patient satisfaction: provider explanation, provider listening, provider respecting, and provider spending enough time with the patient. The results from this study found that across all indicators, PAs were rated as favorably as physicians (Cipher, et al., 2006).

Finally, Roblin, Becker, Adams, Howard, and Roberts (2004) assessed patient satisfaction in two primary care settings. The objective of this research was to evaluate whether patient satisfaction differed according to the type of practitioner providing care (Roblin, et al., 2004). The time frame of the study occurred in 1997 through 2000 and was administered to patients within two weeks of their visit. The study population was divided into pediatric medicine patients, aged 17 or younger, and adult medicine patients, aged 18 to 95. The study population consisted of patients from Kaiser Permanente Georgia, a managed care organization (MCO) in Atlanta, GA (Roblin, et al., 2004). The patients or guardians answered survey questions about satisfaction in regards to the interactions with the provider, nurse, and receptionist. The survey also asked patients

about their satisfaction with time spent at care stages, general access to care, and overall experience with the visit (Roblin, et al., 2004). Results showed that PA interaction was equivalent to or slightly better than visits provided by physicians, in terms of patient satisfaction with provider interaction and care access, in both the adult medicine and pediatric practices. The researchers noted that time spent with a provider and whether or not an accommodation for provider request was made factored into patient satisfaction as well (Roblin, et al., 2004).

Conclusion

Patient satisfaction with PAs is often studied in an emergency medicine setting. Rarely does a previous provider-patient relationship in an emergency visit exist, so the patients have little to no bias towards the provider. Patients do not have the option of scheduling the visit with a preferred provider; a provider that is available at the time sees the patient. Satisfaction with their provider is based off of the single emergency visit encounter. A primary care physician usually does follow-up care, or the patient is sent for a referral to a specialist.

Patient satisfaction has not been studied exclusively with PAs in family practice. Literature review of studies thus far has suggested that generally patients display high satisfaction scores, comparable to physicians in many instances. Results have shown that patients would rather see a PA sooner for a worsening condition than waiting to see a physician (Dill, et al., 2013). The elderly population, aged 65 or older, rates their satisfaction with PAs as positively as their satisfaction with physicians (Cipher, et al., 2006). In a pediatric and adult medicine setting of a MCO, overall patient experience with PAs was equal to or higher than with physicians (Roblin, et al., 2004). However,

yet to be studied is patient satisfaction with PAs in family practice clinics of various organizations. The goal of this research project is to fill the gap on patient satisfaction with PAs in family practice settings of urban Minnesota. Data will be collected from family practice, from more than one organization, and from adults over 18 years old. A study evaluating satisfaction across family practice clinics will provide a more accurate telling of patient satisfaction with PAs.

Chapter 3: Methods

Introduction

The purpose of this research project is to evaluate patient satisfaction with physician assistants (PAs) in family practice clinics. By researching determinants of satisfaction, this study identifies the factors that influence overall patient satisfaction. This study addresses and analyzes three questions regarding the research process.

1. How do specific factors, such as wait time, previous experience with PA, communication during the visit, and patients' perceived role in their healthcare decisions, affect overall patient satisfaction with PAs?
2. What variables have the greatest effect on patient satisfaction with PAs?
3. Overall, how satisfied are patients with PAs?

The results are relevant to today's healthcare system as PAs are increasingly implemented in primary care practices, such as family practice. The remainder of this chapter will cover the study design, sample population, data collection, data analysis, validity and reliability, and limitations of the study.

Study Tool

The research design of this study is a quantitative, one-shot case study, which is a pre-experimental design. The measurement tool used is a printed survey to collect the data, and then analysis of the results will reveal satisfaction based on satisfaction variables and overall satisfaction with PAs. A consent form notified the patients that their answers to the questions would not, in any way, affect their relationship with the PA, as their answers will be confidential without any identifiers used in the study. Patients' names were never collected, recorded, or linked to their responses (Appendix A). Demographic factors collected by the survey include age, gender, and ethnicity. In addition, the patient was asked if they have been cared for by the PA previously, and if

yes, then how many times. Wait time options on the survey (<5, 5-15, 16-30, or >30 minutes) were included for the patients to circle depending on how long they waited to be seen for their visit. The survey collected quantitative values from each of the satisfaction variable based questions on the survey, which the patient rated on a scale of 1 to 5, with 1 being "not satisfied," 3 being "neutral," and 5 being "very satisfied." The questions included the following satisfaction variables: wait time for the visit, extent to which the PA listened to concerns, satisfaction with explanation of illness and treatment plan, input the patient had in the healthcare decisions, and overall satisfaction with the quality of care that the PA provided. Another question was included at the bottom of the survey, which asked if the patient has a preference of seeing a PA versus a medical doctor (MD), and if so, which one. The survey was handed out to each patient at the end of the clinic visit (see Appendix B).

This study reveals the patients' thoughts on their satisfaction with the PA that examined them on that particular day, based on their answers to each survey question. The survey presented satisfaction in a numerical way that can be quantitatively analyzed. The numerical values of each question revealed the areas of the healthcare visit with the PA that patients are satisfied with and also detected the areas that patients are not satisfied with during the clinic visit. The results identify how overall satisfied patients are with the current quality of healthcare that the PAs studied are providing.

Population

The patient satisfaction levels were collected from English-speaking, male and female patients ages 18 years and older that visited a total of five PAs at North Clinic in Plymouth, MN or Medical Center of Multicare Associates in Fridley, MN. Patients surveyed presented for any type of clinic visit with a PA. The survey was confidential and voluntary, in which each patient could opt out of participating in the survey at any time. Permission was obtained from each family practice clinic and from the PAs involved in the study to survey their patients (see Appendix C).

Data Collection

The survey was delivered to each clinic at least one day prior to data collection. The survey was given to patients for five clinic days during the month of June by medical staff at the clinic with an attached consent form to participate in the study. The patient completed the survey at the end of the visit and left the completed survey in the exam room. Medical staff collected the survey before the next patient entered and placed it in a sealed envelope, so the results are concealed from the PA. The surveys were retrieved at the completion of the five days of data collection by the researchers. By using a paper survey, the questionnaire allowed patients to quickly answer the questions, which increased the response rate, since the survey could be done on site and did not have to be returned to the clinic.

Data Analysis

The data from the written survey was then evaluated with Statistical Package for the Social Sciences (SPSS) 22.0 software program using a multiple regression. The patients' responses from the study were analyzed based on gender, ethnicity, and if the patient had seen the PA previously, to see if these factors affected their overall

satisfaction with the PA. The gender and ethnicity groups were broken into percentages to know the variable break down within the study. The satisfaction scores ranked from 1 to 5 were analyzed as well, to see which score was most frequently chosen for each satisfaction variable and for overall satisfaction. The overall relationship and stepwise regression of each factor reveals if the correlation between the specific factor and overall satisfaction has an increasing or decreasing correlation. From these factors, the results display if there are significant differences in overall satisfaction between the variables, and also which factor has the highest relationship to the overall score. These questions and their answers were analyzed with the different demographic groups as the variables to the study, to see if satisfaction is equal. The statistical analysis reveals any variances of specific demographic groups from the mean of overall satisfaction. The results from each clinic were compared, and then generalized to the overall satisfaction in family practice settings from the total number of patients.

Storage of Data

After recording the data, the paper surveys will be kept locked in the PA program office. The electronic data, while being collected and analyzed, will be kept on a password-protected computer owned by the researchers. After the completion of the study, the data will be kept on an external storage device locked in the Physician Assistant office for a minimum of five years, per securing requirements for Bethel University's Physician Assistant Program.

Validity

To evaluate validity in this research study, an expert panel of certified and practicing PAs had been consulted to review the survey tool. The expert panel included six PAs who have experience in family practice, orthopedics, women's health, surgery, and emergency medicine. This panel conducted a review process for readability and format of the survey questions to increase the validity of the tool and study. The misleading and biased questions have been clarified or removed from the study to truly measure patient satisfaction in the way that the survey is intended to do so for the purpose of this study.

Reliability

Since the survey tool had not been administered prior to this study, the expert panel enhanced the reliability needed for the research by answering in a consistent way based on a clear understanding of the questions. By having the expert panel review the survey, as listed above, this increased the reliability of the survey tool. The survey tool should reveal consistent results, based on the purpose of the study because the questions have been analyzed by six PAs similar in demographics to the study. The expert panel of men and women equally understood the survey questions.

Limitations

Limitations to this study include a low response rate, restricted sample size, literacy of the patient population, honesty of patients, and PAs awareness of the study. The patients had to complete a survey. An unwillingness to do so or a lack of time may be reasons why patients opted out of participating in the study, thus a low response rate. A restricted sample size and confined data collection occurred as the study took place over only five clinical days at North Clinic in Plymouth, MN and Medical Center of

Multicare Associates in Fridley, MN, and are not a representative sample of the total population. Results of the study cannot be generalized to the entire population of patients that see PAs as only patients of family practice PAs in Minnesota were surveyed. A more accurate telling of results would be generated from years of data collection at multiple locations.

Literacy is yet another limitation to this study. The patients needed to be able to read at an eighth grade reading level in order to give consent and understand the questions on the survey. The results of the study are limited to the honesty of the patients completing the survey. If patients were not expressing their honest opinion, due to fear of ruining the patient-PA relationship, the results are not accurate. Since the PAs are informed that the study is taking place, they may have inadvertently changed their practice style in order to generate higher satisfaction levels from their patients.

Conclusion

The results from the survey on patient satisfaction with PAs in family practice are relevant due to the increase in PA care in these healthcare settings. As healthcare is striving to become more patient-centered, satisfaction becomes a crucial measure to evaluate quality of care. The patient satisfaction scores become a more valued measure of quality because the patient's perspective is important for understanding, improving, and evaluating the quality, outcomes, and efficiency of care. Application of this study and the results could increase patient satisfaction with PAs in healthcare in the future, by adjustment to the overall quality of care that PAs provide.

Chapter 4: Results

Introduction

This chapter will examine and display the data collected from the surveys completed by patients at North Clinic in Plymouth, MN and Multicare Associates in Fridley, MN. Demographics of each patient were collected and analyzed to provide an image of the patient population who completed the survey. Each question on the distributed survey was individually examined and is discussed in this chapter. Statistical Package for the Social Sciences (SPSS) 22.0 software program was used to analyze the results from the study, using descriptive statistics for frequencies, compare means using an independent sample T-test, and linear regression with multiple variables, which is a multiple regression. In order for the data to be statistically significant, the P-value has to be less than 0.05. Tables and figures are provided to demonstrate the findings.

To begin with, three demographic factors were inquired on the survey: age, gender, and ethnicity. Background information regarding previous experience with the physician assistant (PA), number of visits with the PA, and wait time were collected. An additional five questions were analyzed about patient satisfaction from their visit with the PA were answered on a scale of 1 to 5, with 1 being "not satisfied," 3 being "neutral," and 5 being "very satisfied." The last question analyzed if the patient had a preference to be seen by a PA, doctor, or no preference. There were 111 total surveys collected, however, only 78 completed surveys were used in the data analysis. Surveys that had information left unanswered were not considered, including those lacking the basic demographic information of age, gender, ethnicity, and those that had one or more of the five questions regarding satisfaction unanswered. The data presented below demonstrates the findings from this study.

Data Analysis

The data was collected from the patient population of five PAs in Minnesota. There were 78 patients that fully completed the survey. The mean age of the patient population was 47.21 years old. The youngest patient was 18 years old, and the oldest patient was 86 years old, with a range of 68 years. The gender breakdown of the sample population consisted of 15 male patients (19.2%) and 63 female patients (80.8%) (Figure 1).

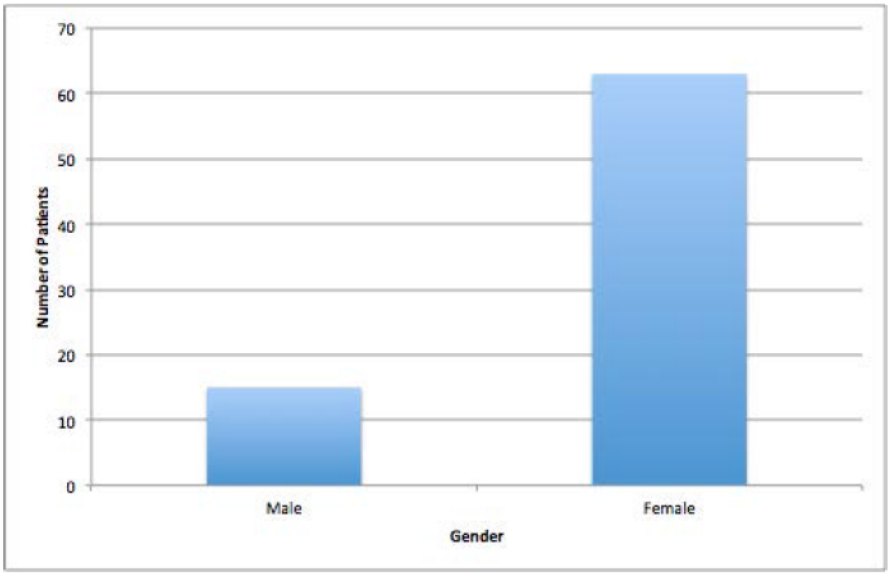

Figure 1. Gender of sample population.

Three (3.8%) individuals from the sample population identified as themselves as Asian, 1 (1.3%) as African American, 72 (92.3%) as Caucasian, and 2 (2.6%) as Other (Figure 2).

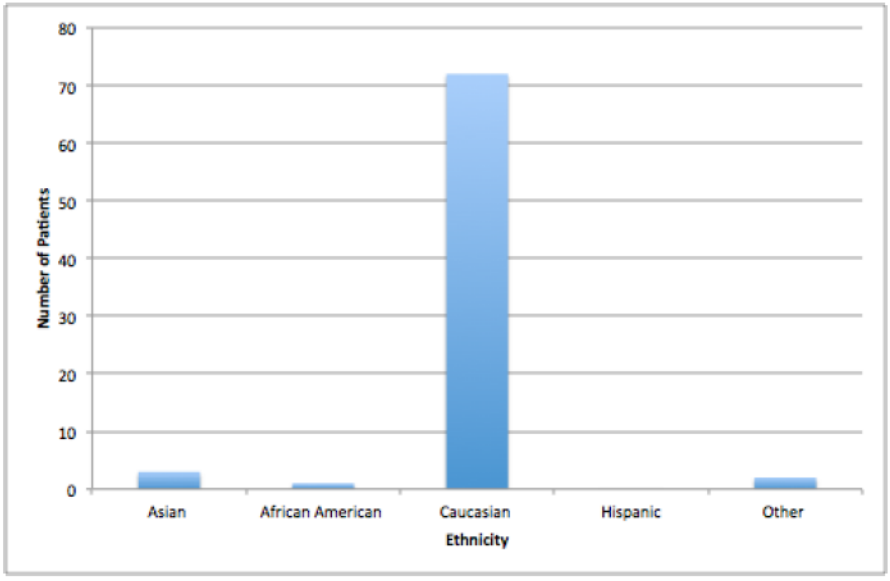

Figure 2. Ethnicity of sample population.

There were 58 patients (74.4%) that had previous experience with the PA; 18 patients had seen the PA 1-5 times (23.1%), 7 patients had seen the PA 6-10 times (9.0%), 29 patients had seen the PA more than 10 times (37.2%), and 4 patients were unsure how many times they had seen the PA (5.1%). There were 20 patients (25.6%) that did not have previous experience with the PA (Figure 3).

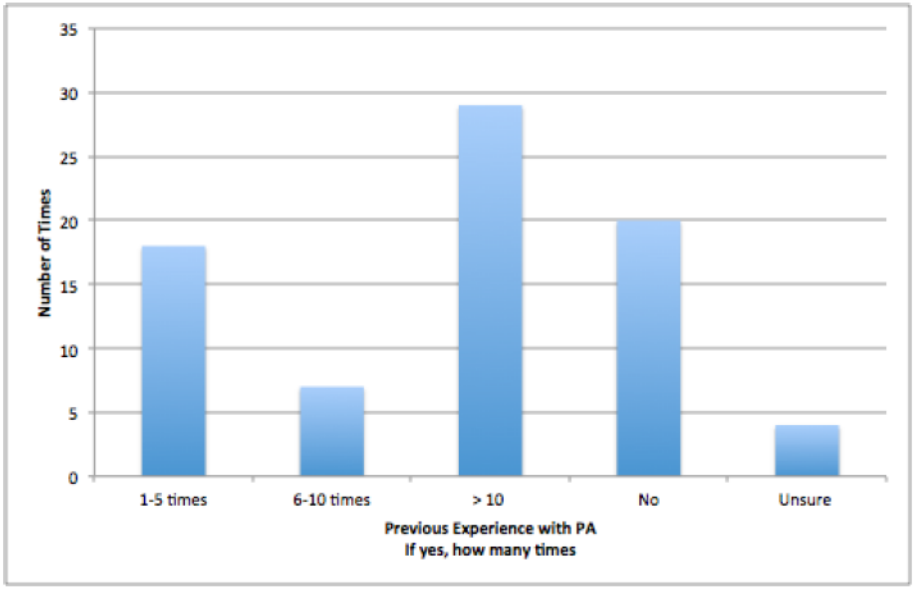

Figure 3. Sample population's previous experience with PAs.

Of the 78 patients, 42 patients waited less than 5 minutes (53.8%), 32 patients waited 5 to 15 minutes (41.0%), 4 patients waited 15 to 30 minutes (5.1%), and 0 patients waited for more than 30 minutes (Figure 4).

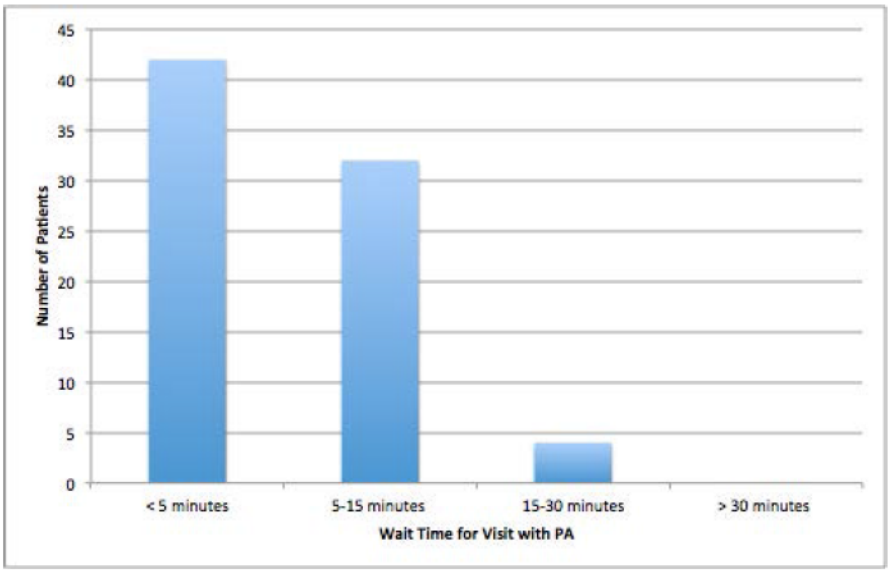

Figure 4. Wait time that the patient population experienced.

The mean satisfaction scores for each satisfaction variable were analyzed (Figure 5).

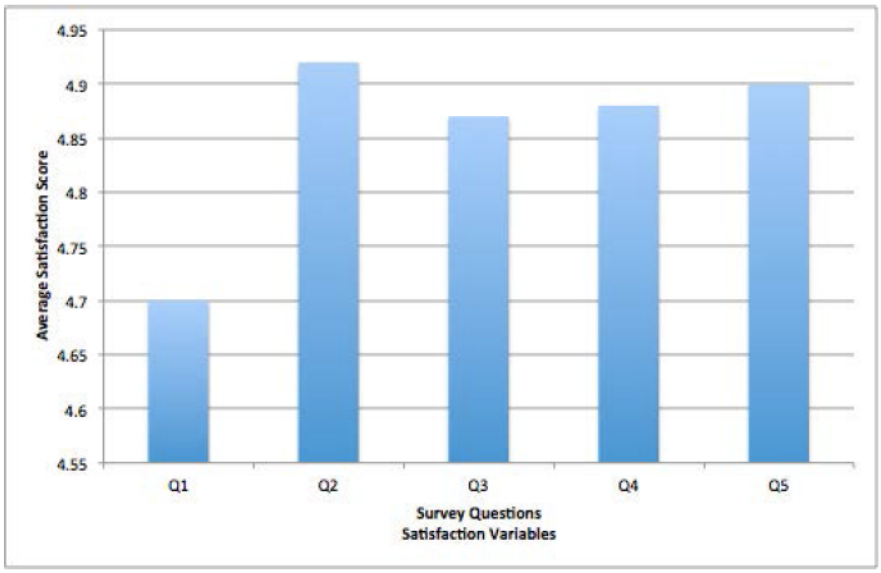

Figure 5. Mean satisfaction scores (out of a score of 5) for each question on the survey.

For Question 1, which asked "How satisfied were you with the wait time for your visit today?", the average level of satisfaction was 4.70 out of 5. There were 6 patients that answered that they were neutral (score of 3) for their wait time satisfaction (7.7%). There were 11 patients that answered satisfied (score of 4) (14.1%). There were 61 patients that answered very satisfied (score of 5) for their wait time satisfaction (78.2%). For Question 2, which asked "How satisfied were you with how the PA listened to your concerns?", the average level of satisfaction was 4.92 out of 5. There was 1 patient that answered neutral (score of 3) for how the PA listened (1.3%). There were 4 patients that answered satisfied (score of 4) (95.1%). There were 73 patients that answered very satisfied (score of 5) for how the PA listened to their concerns (93.6%). For Question 3, which asked "How satisfied were you with how the PA explained your illness/treatment

plan?", the average level of satisfaction was 4.87 out of 5. There were 2 patients that answered neutral (score of 3) for the PA's explanation (2.6%). There were 6 patients that answered satisfied (score of 4) (7.7%). There were 70 patients that answered very satisfied (score of 5) with how the PA explained their illness and treatment plan (89.7%). For Question 4, which asked "How satisfied were you with the input you had in your healthcare decisions?", the average level of satisfaction was 4.88 out of 5. There were 2 patients that answered neutral (score of 3) for their input into their care (2.6%). There were 5 patients that answered satisfied (score of 4) (6.4%). There were 71 patients that answered very satisfied (score of 5) for their input into their care (91.0%).

Question 5, which asked "Overall, how satisfied were you with quality of care that the PA provided today?", represented one of the research objectives. The average level of satisfaction for Question 5 was 4.90 out of 5, which is a 98 percent satisfaction rating. There were 2 patients that answered neutral (score of 3) for their overall satisfaction (2.6%). There were 4 patients that answered satisfied (score of 4) (5.1%). There were 72 patients that ranked their overall satisfaction as very satisfied (score of 5) (92.3%).

For Question 6, which asked "In your experience, would you prefer to be seen by a PA or a doctor?", there were 30 patients that prefer a PA (38.5%), 5 patients that prefer a doctor (6.4%), and 37 patients with no preference (47.4%). There were 5 patients that did not answer this question (6.4%), which did not eliminate their survey if fully completed otherwise on the satisfaction questions. There was 1 patient that stated, "it depended on the situation" (1.3%) (Figure 6).

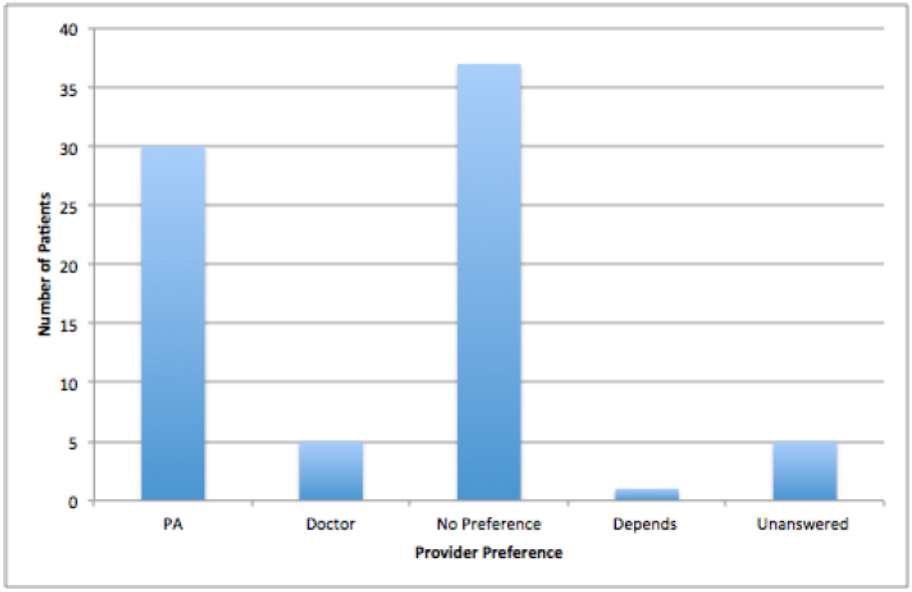

Figure 6. Patient preference for provider.

Using an independent sample T-test to analyze the patient's overall satisfaction at each clinic, no significant difference was found between the PAs in Plymouth versus Fridley (P = 0.952). For the variable of patient's perceived role in their healthcare decisions, there was not a significant difference between the two clinics for this variable (P = 0.507).

	North Clinic, Plymouth	Multicare Associates, Fridley
Total Number of Patients	38	40
Average Satisfaction Score	4.89/5	4.90/5
Average Patient Age (years)	44.26	50.00
Patient Age Range (years)	68	65
Male Patients	4	11
Female Patients	34	29
Asian	1	2
African American	1	0
Caucasian	36	36
Other Ethnicity	0	2
Experience with PA	27	31
No Experience with PA	11	9

Table 1. Comparison of survey results between the 2 clinics.

Using a linear regression, there was no significant relationship between age and overall satisfaction with PAs (R = 0.072). A patient's gender does not have significance for a patient's wait time (P = 0.112). Also, a patient's gender does not have a significant difference for his or her overall satisfaction with PAs (P = 0.730). There was statistical significance between a patient's ethnicity and their overall satisfaction (P = 0.004). Due to a small sample size, there was not enough data to cross compare ethnicity; therefore variability could not be assessed. There was not enough minority status to compare a significant difference to calculate which ethnicity group had higher overall satisfaction with PAs. There was not a statistically significant difference between patient's overall satisfaction if the patient had seen the PA previously, or if they were new to seeing the PA (P = 0.972). There was no need to analyze how many times the patient had seen the PA versus their overall satisfaction because there was no significant difference in satisfaction between seeing the PA previously or not.

A multiple regression was used to answer the research question, "What variables have the greatest effect on patient satisfaction with PAs?" Between each variable, there was a positive correlation with the overall satisfaction (R = 0.872; $R^2 = 0.761$), with 76.1% variability found from factors. The satisfaction variables of wait time (P = 0.778), the PA listening to the patient's concerns (P = 0.466), and the PAs' explanation of the patient's illness/treatment plan (P = 0.922), had no statistical significance in regard to influence on overall satisfaction with PA care. The variable that does have an influence on patient's overall satisfaction is the patient's perceived role in their healthcare decisions, which is statistically significant (P = 0.001).

Conclusion

Patients' satisfaction with wait time (P = 0.778), with how well the PA listened to their concerns (P = 0.466), and with the explanation of their illness/treatment plan (P = 0.922) did not have a statistically significant influence on overall patient satisfaction with the PA. Previous experience with the PA did not show to influence overall patient satisfaction with the PA, compared to seeing the PA for the first time (P = 0.972). The patients' perceived role in their healthcare decisions has an influence on the patients' overall satisfaction with the PA (P = 0.001). This was found to be statistically significant from the research performed in the family practice clinics in Plymouth and Fridley, Minnesota. Overall, patients reported a 98 percent overall satisfaction with PA care. The next chapter will include discussion of the data analysis and explore the significance of the results found from this study.

Chapter 5: Discussion

Introduction

This chapter will discuss the findings of the data analysis from the surveys completed by patients that were cared for by physician assistants (PAs) at North Clinic in Plymouth, MN and Multicare Associates in Fridley, MN. From the data collection and analysis, there was a satisfaction variable that was found to be significant to the patient's overall satisfaction with PAs, which was their perceived role in their healthcare decisions. The limitations of this study that were encountered will be discussed, as well as the recommendations for potential improvement for the methods, research design, and data collection portions of the study. Potential future research opportunities are also explored. Lastly, a conclusion is provided to conclude the data analysis and research study findings.

Findings

The purpose of this study was to answer the initial research questions of how specific factors, such as wait time, previous experience with PA, communication during visit, and their perceived role in their healthcare decisions, affect overall patient satisfaction with PAs. This study also explored which variables had the greatest effect on patient satisfaction with PAs, and overall, how satisfied patients are with PAs. The results showed that patients are overall satisfied with PAs, and that the only variable that does have an influence on patient's overall satisfaction is the patient's perceived role in their healthcare decisions, which is statistically significant ($P = 0.001$). The majority of patients will not be satisfied with their visit if they do not have control over their personal healthcare decisions, as shown by the statistical significance of Question 4.

Discussion

The findings of this study should influence healthcare providers to have a discussion with patients about the options available to them in regards to diagnostic tests, treatment plans, and further medical management. These actions would allow patients to be fully engaged in their own care, so patients will have a part in the final healthcare decision, which will increase overall satisfaction with PAs, and increase satisfaction within healthcare in general. Patient involvement is significant because in situations where patients do not have control over their healthcare, such as in situations of standardized healthcare, there will be less patient satisfaction.

Coulter (2006) found that most patients prefer providers who involve them in healthcare decisions. Hunter (2006) provides suggestions on ways to involve patients in healthcare. Patients' views can be incorporated into their own treatment plans and healthcare needs. Patients should also be encouraged to assess their own progress toward their healthcare goals. By encouraging patients to take responsibility towards their healthcare goals, not only would it improve overall satisfaction, but there would also be an improvement in the patients' overall health. In a cohort study of 1,000 patients with schizophrenia (Hunter, 2006), effective alliances were formed between patients and providers just by assessing patients' views. These cooperative patient-provider relationships were associated with fewer hospital admissions and overall improved outcomes (Hunter, 2006).

Providers should be working towards building a partnership with patients to improve care. A common cause of patient's dissatisfaction in clinic settings arises from not being informed and involved in treatment plans. Coulter, Parsons, & Askham (2008)

recognized that patient engagement can improve their experience and satisfaction. Coulter, et al. (2008) report, "Most patients want more information than they are routinely given by healthcare professionals, and many more would like a greater share in the process of making decisions about how they will be treated." Shared decision-making is a process that involves patients as active participants in understanding possible medical options and choosing the most favorable course of action (Coulter, et al., 2008). This process is appropriate whenever there is more than one reasonable medical option. While some patients do not want any responsibility in devising a treatment plan, most want providers to educate them and take their desires into consideration. As patients become more knowledgeable about their medical conditions and more active in decision-making, their anxiety and uncertainty lessens, and the patients become more satisfied (Coulter, et al., 2008).

Strategies to promote patient involvement rely on excellent communication between the patient and the provider. Patients often rely on providers' expertise and experience to guide them in their decision-making. Throughout discussion of options, providers should keep in mind that their own attitudes and preferences can be detected by patients, which influences patients' decisions. Prompting questions and having patients recall information can help in assessing how well they understand their condition. Providers can correct patients and fill in the blanks to help patients understand better. As a result, patients will feel more involved in their care.

Limitations

A main limitation of this study was that the population surveyed was limited to two family practice clinics and five PAs, which potentially limited the perspectives of

patient viewpoints on their satisfaction with PAs. Furthermore, not all the patients fully completed the survey, and therefore were not included in the data analysis. The patients who completed the survey request may have felt more strongly toward the PA, than someone who didn't complete the survey. Also, the results of the study are limited to the honesty of the patients completing the survey. If patients are not expressing their honest opinion, due to fear of ruining the patient-PA relationship, the results will not be accurate. The providers were also aware of the survey being distributed that week; so there may have been unintentional improved PA care to increase their patient's satisfaction that week. The PA also may have inadvertently changed their practice style in order to generate higher satisfaction levels from their patients during the week duration of the survey. The research was limited to one week, so the patients were limited in that time period as well. A more accurate telling of results would be generated from years of data collection at multiple family practice locations.

Recommendations

Extending the research study to a longer time frame would invite a larger sample size of patients to partake in the survey, which would potentially increase the survey response and improve the reliability of the statistical analysis results. Furthermore, including additional PA providers and more clinic organizations, including sample groups from urban, rural, and suburban settings, may provide a more accurate and detailed representation of patient satisfaction with PAs in Minnesota.

Further research could be completed with the recommended magnification of population size and provider group settings to expand upon the research results of this study. Future researchers could compare and contrast the results of this study with one

that included a more expanded sample size and various provider settings to determine if the patient satisfaction differed depending on the location of the providers. Furthermore, additional research in this area would be beneficial given the lack of prior research studies with PAs in family practice settings in order to confirm the reliability of the results of this study.

Conclusion

The purpose of this study was to evaluate patient satisfaction with PAs in family practice settings, while investigating the various variables that may impact overall satisfaction, such as wait time, previous experience with PAs, communication during the visit, and the patients' perceived role in their healthcare decisions. The results of the study indicated the only factor to have statistical significance on overall patient satisfaction with PAs is the patients' perceived role in their healthcare decisions ($P = 0.001$). The average score recorded by patients for overall satisfaction with PA care was 4.90 out of 5 (98%). Further research of PA care in family practice settings could be completed to take into account this study's limitations to expand the research in this area, so that patient satisfaction could be further improved and significant for overall satisfaction with PAs.

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APPENDIX A

Informed Consent

Dear Patient:

As two physician assistant (PA) students from Bethel University, we are conducting research in partial fulfillment of the requirements for a Master's Degree in PA Studies. Our study is investigating patient satisfaction with physician assistants in family practice settings to improve your health outcomes as a patient.

Attached is the survey to gather necessary information from your experience with the PA today. The survey will take approximately 5 minutes for you to complete. By completing this survey, you are indicating consent to participate in this study. The PA will not know your individual responses, as your responses will be kept anonymous. The answers to the questions will not, in any way, affect your relationship with the PA. Your name will not be collected, recorded, or linked to your responses. There will be no consequences from this healthcare clinic or PA by participating and evaluating your experience today in an honest fashion.

Please realize that your participation is vital to the success of this research. Thank you in advance for your response to this study. Please complete the survey and leave in the patient exam room. If you have questions about this study, please contact Megan Rieland (mer46394@bethel.edu), Mariah Eystad (mre22633@bethel.edu), or Cindy Goetz, PA-C (c-goetz@bethel.edu).

Thank you again for your help.

Sincerely,

Megan Rieland, PA-S and Mariah Eystad, PA-S

APPENDIX B

Survey

Please fill in the blank or circle your response.

Age: _____ **Gender:** Male or Female

Ethnicity: Asian African American Caucasian Hispanic Other

Have you seen this PA before? Yes or No (circle one) **How many times?** _____

How long did you wait to be seen? <5 minutes 5-15 min 16-30 min >30 min

	Not satisfied (1)		Neutral (3)		Very satisfied (5)
How satisfied were you with the wait time for your visit today?	1	2	3	4	5
How satisfied were you with how the PA listened to your concerns?	1	2	3	4	5
How satisfied were you with how the PA explained your illness/treatment plan?	1	2	3	4	5
How satisfied were you with the input you had in your healthcare decisions?	1	2	3	4	5
Overall, how satisfied were you with quality of care that the PA provided today?	1	2	3	4	5

In your experience, would you prefer to be seen by a PA or a doctor?

PA or Doctor (circle one)

We are very appreciative of your assistance. Thank you!

APPENDIX C

Permission from PAs

Mary K. Anderson <MAnderson@multicare-assoc.com> Feb 3 (8 days ago)
to me

On behalf of Multicare Associates, I, Mary Anderson, give permission to Bethel University Physician Assistant students, Mariah Eystad and Megan Rieland, to conduct their Master's Research at this clinic with permission being granted for Mary Anderson PA-C's patients to be surveyed.
Sincerely,

Mary Anderson PA-C
Multicare Associates - Fridley Medical Center

Mariah Eystad <mre22633@bethel.edu> Mar 3 (2 days ago)
to JHiti

Hi Josephine,

I have been in touch with Mary Anderson from Multicare Associates and she said that you would be interested in our research as well. I am very excited to hear that! We are looking at patient satisfaction with PAs in family practice. I am unsure if Mary sent you the document of our survey and research paper, but if you'd like more information I can send you our research paper so far.

I look forward to hearing back from you and gaining your permission for this research,

Mariah Eystad
Bethel PA student

Josephine C. Hiti <JHiti@multicare-assoc.com> 10:57 AM (16 minutes ago)
to me

Hi Mariah,

I would like if you could send me any information you have on the research project as well as what you need from me to get started.

Josephine Hiti, PA-C

Mariah Eystad <mre22633@bethel.edu> Mar 2 (2 days ago)
to Rebecca

Hi Rebecca,

I was just curious if we received North Clinic approval to interview the patients of PAs?

Fischer, Rebecca <rebecca.fischer@northclinic.com> 8:52 AM (2 hours ago)
to me

Hi Mariah,
We have gotten approval for the survey as long as we can get the results that are collected.

Let me know when you would like to start!

Thanks

Rebecca

APPENDIX D

IRB Approval

Bethel University Level III IRB Approval

Inbox x

Wallace Boeve <w-boeve@bethel.edu> Apr 28

to Megan, me, Peter, Cindy, Lisa

April 28, 2016

Megan & Mariah;

As granted by the Bethel University Human Subjects committee as the program director, I write this letter to you in approval of Level 3 Bethel IRB of your project entitled: "Patient Satisfaction with Physician Assistants in Family Practice Settings." This approval is good for one year from today's date. You may proceed with data collection and analysis. Please let me know if you have any questions."

Sincerely;

Wallace Boeve, EdD, PA-C
Program Director
Physician Assistant Program
Bethel University
w-boeve@bethel.edu
651 308-1398 cell
651 635-1013 office
651 635-8039 fax
http://gs.bethel.edu/academics/masters/physician-assistant