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Patient Satisfaction with Care Provided By Physician Assistants in an Orthopedic Clinic

Joshua Richard Johnson
Olivet Nazarene University

PATIENT SATISFACTION WITH CARE PROVIDED BY PHYSICIAN ASSISTANTS IN AN ORTHOPEDIC CLINIC

by

Joshua R. Johnson

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H. Stanton Tuttle, Ph.D.
Dissertation Adviser — 4/23/16

Ray E. Bower, Ph.D.
Dissertation Reader — 4/23/16

H. Stanton Tuttle, Ph.D.
Dissertation Coordinator — 4/23/16

Houston Thompson, Ed.D.
Program Director — 4/23/16

Carol Maxson, Ed.D.
Vice President for Academic Affairs — 4/23/16

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ABSTRACT

Patient satisfaction is an important part of a patient's healthcare experience and has been researched extensively. Physician Assistants (PAs) have become a resource to provide healthcare services to patients in the United States and internationally. The purpose of the current study was to measure patient satisfaction levels with care provided by PAs in an orthopedic clinic, in order to find ways of improving patient satisfaction levels. A patient satisfaction survey was distributed to patients receiving care from PAs in a Midwestern orthopedic clinic. Data analyses determined levels of patient satisfaction for patients receiving care from PAs. The results from the study indicated a high level of overall patient satisfaction for patients receiving care from PAs in an orthopedic clinic. The time patients spend waiting to receive care from a PA, the technical quality of the PA, and the interpersonal manner of the PA all positively influenced the overall level of patient satisfaction. Patients who were middle age (age 45-64) and older (age 65 and older) were most satisfied with the care provided by PAs in an orthopedic clinic. The majority of patients (n = 60) were not willing to wait a longer period of time in order to receive care from a physician, rather than a PA.

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CHAPTER 1

INTRODUCTION

Patient satisfaction with healthcare experiences is a topic that has been researched extensively (Cleary & McNeil, 1988). Specifically, patient satisfaction has been measured as an outcome of the care provided by physicians, physician assistants (PAs), medical students, and other healthcare providers (Ellett, Campbell, & Gonsalves, 2010; Hooker, Cipher, & Sekscenski, 2005). Donabedian (1988) suggested that patient satisfaction was an important part of a patient's healthcare experience because patient satisfaction was a patient's judgment of the quality of care they had received. Satisfied patients are more likely to seek medical advice, keep their follow up appointments, and follow through with treatment recommendations (Levesque, Bogoch, Cooney, Johnston, & Wright, 2000). Bodenheimer (1999) suggested that satisfied patients were less likely to leave their healthcare plan.

One component of patient satisfaction that has received much attention in previous research was the concept of a patient's waiting time. Patient waiting time was considered the elapsed time between check-in time and when the provider called for the patient (McMullen & Netland, 2013). Multiple studies indicated that patients were least satisfied with their healthcare experience when they had to wait longer than expected to receive care (Anderson, Camacho, & Balkrishnan, 2007; Thompson, Yarnold, Williams, & Adams, 1996).

Patient satisfaction research has involved various types of healthcare providers, such as physicians, PAs, and nurse practitioners (NPs), as well as various areas of medicine, including emergency medicine, primary care medicine, and trauma (Berg, Crowe, Nyberg, & Burdsal, 2012; Counselman, Graffeo, & Hill, 2000; Hill, Bird, Hopkins, Lawton, & Wright, 1992). Hooker, Potts, and Ray (1997) concluded that patients were satisfied with their care from nurse practitioners, physicians, and PAs. Hooker et al. (2005) indicated that Medicare patients were as satisfied with the care provided by PAs as they were with the care provided by physicians. Hooker et al. (1997) also reported that PAs who practice orthopedics scored slightly higher in overall patient satisfaction compared to physicians.

Counselman et al. (2000) reported that the majority of patients treated by a PA in an emergency department fast track were satisfied with their care. Also, Counselman et al. concluded that the majority of patients in an emergency department fast track were not willing to wait longer to receive care from a physician rather than a PA. As a result of the study by Counselman et al., the current study addressed whether patients were satisfied with the care they receive from a PA in an orthopedic clinic.

Statement of the Problem

Previous research indicated that patients were satisfied with the care they received from PAs (Berg et al., 2012; Counselman et al., 2000; Hooker et al., 2005). One area of healthcare that has caused the greatest amount of patient dissatisfaction was waiting time (Hill et al., 1992). Thompson and Yarnold (1995) suggested that patients were most satisfied with their experience in the emergency department (ED) when their waiting time was less than expected. Few studies in the literature have examined patient satisfaction

with care provided by PAs at an orthopedic clinic. Thus, the purpose of this study was to determine patient satisfaction levels when patients had seen a PA in an orthopedic clinic, in order to find ways to improve patient satisfaction. And, because research has pointed to waiting time as a very important factor in patient satisfaction levels, this variable was a key variable investigated in the current study.

Background

Physician Assistants

A PA is someone who has been qualified by education, experience, personal character, and training to practice medicine under the supervision of a licensed physician (Hooker, 2003). Dr. Eugene Stead developed the first PA program in 1965 at Duke University (Cawley, Cawthon, & Hooker, 2012). The PA program at Duke was two years long and graduated its first class in 1967. The concept of a physician extender, or what is now known as a PA, was developed to create a new type of healthcare provider who could perform routine and less complex tasks of medicine that were usually reserved for a licensed physician (Larson & Hart, 2007). Physician assistants were employed to play a collaborative role with physicians as part of the healthcare team (Bal & Brenner, 2013).

PAs became certified to practice medicine after they had passed a national certification examination (Pedersen, 2003). The National Commission on Certification of Physician Assistants (NCCPA) was developed in 1974 in order to ensure that PAs were receiving quality education from PA programs (Ballweg, 2003; Pedersen, 2003). The NCCPA examined new graduates with a certification exam, and then required PAs to take a recertification exam every six years. After a PA had passed a certification exam, they were designated PA-C, indicating they had been certified (Pedersen). As of 2013,

PAs were required to take a recertification exam every 10 years (American Academy of Physician Assistants, 2014).

As of 2010, there were 83,466 PAs practicing medicine in the United States (American Academy of Physician Assistants, 2010). Orthopedics was the third most common subspecialty area of medicine where PAs practiced in 2011 (Larson, Coerver, Wick, & Ballweg, 2011). The number of PAs who practiced in the field of orthopedics was estimated to be 8,688, or roughly 10.4% of all practicing PAs in 2010.

Patient Satisfaction

Kane, Maciejewski, and Finch (1997) indicated that patients' satisfaction with their healthcare experience was an important component in measuring the quality of the provider's care. The findings by Kane et al. were consistent with the findings of Donabedian (1988) in that patient satisfaction was considered a component of the quality of care a patient had received. There were numerous measures by which patients based their overall satisfaction with their healthcare experience, including the technical quality, interpersonal manner, and availability of their healthcare provider (Ware, Snyder, Wright, & Davies, 1983). Berg et al. (2012) suggested that there was a link between patients' perceived interpersonal care and healthcare providers' perceived technical care. Berg et al. suggested that increased interpersonal care from healthcare providers could predict high technical care, as perceived by patients. Chang, Chen, and Lan (2013) suggested that patients' perceptions of professional skills and communication attitudes positively influenced patient satisfaction.

Bowling, Rowe, and McKee (2013) suggested that age played a role in patients' levels of satisfaction. Specifically, Bowling et al. suggested that older patients had higher

expectations concerning their healthcare experience than younger patients did. Bowling et al. indicated that older patients were also more likely than younger patients to feel that their expectations about their healthcare experience were being met.

Ladd (2009) suggested that patients were open to discussing their visit with their physician and were open to taking part in satisfaction surveys. Cleary (1999) suggested that patient surveys were both a valid and reliable source for determining quality of care being provided. Patient surveys were commonly used in order to gain patients' feedback. Cleary also emphasized that patient surveys could inform healthcare providers about ways to improve patient satisfaction.

Research Questions

The research was guided by the following questions:

1. How satisfied were patients with the care they had received from a PA in an orthopedic clinic?
2. How many patients would be willing to wait a longer period of time to be treated by a physician rather than a PA?
3. How much more time would patients be willing to wait to be treated by a physician rather than a PA?

Description of Terms

Fast Track. An area of the emergency department where minor care is provided (Counselman et al., 2000).

Interpersonal Manner. The way in which providers interact personally with patients (Ware et al., 1983).

Patient Satisfaction. A patient's judgment on the quality of care they have received (Donabedian, 1988).

Physician Assistant. A person who is qualified by education, experience, personal character, and training to practice medicine under the supervision of a licensed physician (Hooker, 2003).

Orthopedics. The surgical specialty involving musculoskeletal disorders and trauma (Auth, 2003).

Technical Quality. The competence of providers and adherence to high standards of diagnosis and treatment (Ware et al., 1983).

Waiting Time. The elapsed time between check-in time and the time the patient was first called by the provider (McMullen & Netland, 2013).

Significance of the Study

The measurement of patient satisfaction was important because it could indicate how patients perceived the quality of the care they had received (Donabedian, 1988). Druss, Marcus, Olfson, Tanielian, and Pincus (2003) explained that in 2003, more patients were being seen and treated by PAs compared to anytime in the past. Hooker, Cawley, and Everett (2011) projected the number of practicing PAs to increase from 74,476 PAs in 2009, to 127,821 by the year 2025. Additional research indicated that while the quantity of PAs was increasing, PAs were also moving from primarily practicing primary care medicine to practicing subspecialty areas of medicine, including orthopedics (Morgan & Hooker, 2010). As previously discussed, patient satisfaction with PAs had been measured (Berg et al., 2012; Counselman et al. 2000; Hooker et al., 2005), but there was little research that examined whether patients were satisfied with the care

they received from PAs in an orthopedic clinic. Measurement of patient satisfaction levels of patients who were treated by PAs in an orthopedic clinic could allow the PA profession to understand if their patients were satisfied with the care provided by PAs in this area of medicine, and could indicate if PAs practicing in orthopedics were providing quality care. Results from this study could indicate patients' willingness to receive care from PAs in the field of orthopedics, and could also suggest that more PAs could begin practicing orthopedics.

Process to Accomplish

Introduction

The purpose of this study was to measure patient satisfaction levels with care provided by PAs in an orthopedic clinic, in order to find ways of improving patient satisfaction levels. Would patients indicate that they were satisfied with the care provided by PAs? Would patients be willing to wait longer for care provided by a physician rather than a PA? The researcher used the following process to accomplish the purpose of the study.

Participants

The population the researcher utilized to conduct the study consisted of consenting patients over the age of 18 who had been treated by a PA in a private, Midwestern orthopedic clinic. The researcher targeted 100 participants for the study using quota sampling (Leedy & Ormrod, 2012). Participants were given a patient satisfaction survey after their visit to an orthopedic clinic.

Measures

The researcher constructed a modified version of a patient satisfaction survey previously used by Counselman et al. (2000) after consent was obtained from Counselman to modify and then use the survey. The patient satisfaction survey explained the nature of the study, the anticipated minimal risks, the right to withdraw at any time, and the researcher's contact information so patients could ask questions or ask for their responses to be withdrawn from the study. The survey included the definitions of a physician and a PA in order to ensure that the participants could distinguish between the two types of healthcare providers they encountered, and the definitions of technical quality and interpersonal manner in order to ensure participants understood the terms.

The first question of the survey asked participants to indicate who had provided their care during their orthopedic visit, with the option of choosing a physician, a PA, or both. Next, participants were asked four satisfaction questions, including how satisfied they were with the time that they had to wait to be treated that day, how satisfied they were with the technical quality of the care from their healthcare provider that day, how satisfied they were with the interpersonal manner of their healthcare provider that day, and how satisfied they were with the overall care they received from their healthcare provider that day. Participants were informed to circle their scores for the satisfaction questions on a Likert scale between 1 and 7, with 7 representing the highest level of satisfaction.

Participants who indicated they had been cared for by a PA were then asked to answer whether they were willing to wait longer to receive care from a physician by circling a yes or no response. Participants who indicated they were willing to wait longer

for care from a physician were asked to indicate how much longer they were willing to wait, given the options of 30 minutes, 60 minutes, 90 minutes, or 120 minutes and longer. Participants were asked to indicate whether they were male or female, and their age group from the options of ages 18-44, 45-64, and 65 and older. Finally, participants were asked to sign their consent to participate in the study. Participants who indicated that they had received care from an MD or both, were younger than 18 years old, or did not fully complete the survey were excluded from the data. See Appendix A for a copy of the survey instrument.

Melissa McCormack, an expert in the field of patient satisfaction surveys, then evaluated the patient satisfaction survey to ensure the survey was an appropriate way to measure patient satisfaction levels and to provide face validity (Leedy & Ormrod, 2012). Hooker stated, "An individual in the marketing field, specifically with survey experience in patient satisfaction in the medical field, could be considered an expert in the field of consumer satisfaction surveys" (R. Hooker, personal communication, July 20, 2014). McCormack has six years of experience marketing, designing, programming, and researching healthcare surveys, including patient satisfaction surveys. McCormack stated, "The survey is well-constructed and will indicate levels of patient satisfaction" (M. McCormack, personal communication, July 28, 2014). The researcher used the data collected from the survey and Cronbach's Alpha to test for reliability (Gay, Mills, & Airasian, 2012).

The researcher piloted the patient satisfaction survey with patients receiving care in an orthopedic clinic not involved in the study. During the pilot test, open-ended questions were added to examine the quality and clarity of the survey. The researcher

gathered information from the patients about the ease to complete the survey and the clarity of the questions.

Procedure

The researcher received consent to conduct the study from the orthopedic clinic through written verification from the Chief Executive Officer of the clinic. The researcher concluded that participants were at minimal risk for the study. Patients were informed of an educational study being conducted in the orthopedic clinic and were offered to participate in the study. Patients were informed that participation was completely voluntary and that refusal to participate had no impact on their visit to the clinic or the care that they received in any way. Patients who volunteered to participate were given the survey when they entered the orthopedic clinic. The survey explained the expected risks of the study, the option to withdraw from the study at any time, and the researcher's contact information so participants could contact the researcher with any questions or withdraw from the study. Informed consent was obtained by participant's signature on the survey. All participants were asked to complete the survey and return the survey to staff members either at the checkout counter, or at the front desk of the orthopedic office. The survey was expected to take approximately 10 minutes or less to complete.

Research Question One. How satisfied were patients with the care they had received from a PA in an orthopedic clinic?

Data. Using the previously described instrument, the researcher sought to determine whether patients were satisfied with the care they had received from a PA that

day in an orthopedic clinic. The numerical data from the overall patient satisfaction question was used to determine the level of patient satisfaction.

Analyses. The researcher sought to determine which gender and which patient-age group was most satisfied with the care they received from PAs. The researcher cast the data in the form of a 2 (gender of participant) X 3 (age of participant) between-groups factorial design. The researcher then conducted a 2X3 factorial between-groups analysis of variance (ANOVA) to determine if there was a relationship between overall patient satisfaction, the dependent variable, and either of the independent variables of patient age or gender (Robson, 2011). The 2x3 factorial between-groups ANOVA also permitted the researcher to examine the possibility that age and gender might interact in a unique way to relate to patient satisfaction. Pearson product-moment correlations were conducted to determine if relationships existed between waiting time satisfaction and overall patient satisfaction, technical quality satisfaction and overall patient satisfaction, and interpersonal manner satisfaction and overall patient satisfaction. Mean overall satisfaction scores of each gender and age group were reported in tabular form. The mean and standard deviation for the four satisfaction measures were also reported in tabular form.

Research Question Two. How many patients would be willing to wait a longer period of time to be treated by a physician rather than a PA?

Data. Using the previously described instrument, the researcher sought to determine the number of patients that were willing to wait longer to receive care from a physician rather than a PA.

Analyses. The researcher used a chi-square test of independence to determine whether willingness to wait longer to receive care from a physician rather than a PA was related to gender. The researcher also used a chi-square test of independence to determine whether willingness to wait longer to receive care from a physician rather than a PA was related to patient age. Frequency counts by gender and age showing the total numbers of yes respondents and no respondents were displayed in tabular form.

Research Question Three. How much more time would patients be willing to wait to be treated by a physician rather than a PA?

Data. Using the previously described instrument, the researcher sought to determine the number of patients that would wait 30 minutes, 60 minutes, 90 minutes, or 120 minutes and longer to receive care from a physician. Numerical data, taking the form of frequency counts for each category were collected.

Analyses. The researcher sought to determine the number of patients who responded to each waiting time option in the third research question. Frequency counts by gender and age for each time category were displayed in tabular form.

Summary

Patient satisfaction is an important component of the healthcare experience because patient satisfaction can be considered a desired outcome of care (Donabedian, 1988). Previous research indicated that patients were satisfied with care provided by PAs (Berg et al., 2012; Counselman et al., 2000; Hooker et al., 2005). The purpose of this study was to determine patient satisfaction levels when patients had been treated by a PA in an orthopedic clinic, in order to find ways to improve patient satisfaction. The next

chapter will provide an in-depth literature review of the current research about patient satisfaction with care provide by PAs in an orthopedic clinic.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Patient satisfaction is a complex issue and the factors that determine patient satisfaction are multidimensional in nature (Nielsen, Gill, & Ricketts, 2005; Ware et al., 1983). Knowing whether patients are satisfied is important because satisfied patients are more likely to seek medical advice, follow through with treatment recommendations, keep their follow up appointments, and maintain a solid patient-physician relationship (Levesque et al., 2000). Many methods are available to evaluate and measure patient satisfaction (Batchelor, Owens, Read, & Bloor, 1994; Cleary, 1999; Nitse & Rushing, 1996; Quintana et al., 2006; White, 1999); however, Hooker et al. (2005) argued that the studies to evaluate patient satisfaction with PAs have been few. As part of the current study, the following areas were reviewed, in order to provide a thorough background of the field and also to establish a research-based foundation for the study: the history and role of PAs, the demographics of PAs, patient perception of PAs, the importance of patient satisfaction, determinants of patient satisfaction, how to measure patient satisfaction, and patient satisfaction with PAs.

History and Role of PAs

As of 2013, the United States confronted many uncertainties involving healthcare, including how healthcare will be paid for, who will provide healthcare, and who will

receive healthcare (Sargen, Hooker, & Cooper, 2011). Laws such as the Patient Protection and Affordable Care Act (2010) will require an increased demand for healthcare services due to an increased population of individuals with insurance, a growing population, an aging population, an increased demand for technology in healthcare, and the management of chronic diseases, according to Hooker and Muchow (2014a). Morgan, Strand de Oliveira, and Short (2011) suggested that PAs and NPs could be effectively utilized to offset the projected shortage of physicians and the increased cost of health care.

Brock, Wick, Evans, and Gianola (2011) explained that the PA profession began when medical programs noticed an opportunity for former military medics and corpsmen to transition into providing health care to a civilian population. Mittman, Cawley, and Fenn (2002) pointed out that PAs were created in the 1960s to offset a shortage of physicians in the United States. Cawley et al. (2012) indicated that in order to address the shortage of physicians, the concept of a physician extender (PE), or someone who could perform medical tasks previously only done by a physician, was created. Jones (2007) described the creation of the PA profession as a social and health workforce experiment.

According to Cawley et al. (2012), Charles Hudson suggested the idea of externs to help physicians with medical tasks in 1961.The first PA program started at Duke University in 1965, begun by Eugene Stead, MD and E. Harvey Estes, MD. The PA program trained individuals in medical care with the goal that those trained individuals would assist and report to physicians. Stead was credited with creating the title of physician assistant. Other physicians who were credited with helping in the creation of PAs were Richard Smith, MD, Hu Myers, MD, and Henry Silver, MD (Cawley, 2007;

Cawley et al.). The American Medical Association (AMA) gave its approval of PAs in 1969 (Cawley et al.).

Cawley (2007) suggested that PA programs were designed to be educationally efficient. PA programs were different from medical programs because they were shorter in duration, lasting an average of 26 months. Alderson Broaddus College was the first PA program to award an academic degree, awarding a bachelors degree in 1970. Cawley noted, that unlike other health professions, PA education programs awarded various degrees, with the most popular being a master of physician assistant studies (MPAS), a master of health science (MHS), the master of medical science (MMS), and the master of science (MS).

Cawley (2007) reported that three trends existed in PA education. Cawley suggested that the first trend in PA education was a rapid expansion in the early 1970s, the second trend was a decrease in the number of PA programs in the 1980s, and the third trend was a rapid expansion of PA programs in the mid and late 1990s. Larson and Hart (2007) also confirmed that the PA profession grew rapidly in the 1970s and 1990s. One of the reasons that PAs expanded so rapidly in the 1970s was because of the increased use of PAs in Alaska (Marzucco, Hooker, & Ballweg, 2013). In 1974, PAs were recruited to provide medical care to workers on and other employees involved in building and operating the Trans-Alaska Pipeline system. By 1977, Alaska had 200 PAs providing healthcare for the state. Jones (2007) suggested another reason that the expansion of the PA profession occurred in the 1970s was because of federal funding from the Comprehensive Health Manpower Act of 1972. Druss et al. (2003) suggested that changes in healthcare during the 1990s allowed for a shift in the delivery of medical care

from physicians to nonphysician clinicians, which included PAs, NPs, and other healthcare providers.

Hooker et al. (2011) predicted that the number of PA programs would increase from 154 in 2009, to 218 in 2025. The number of PA programs increased to a total of 181 in 2013, with 146 of the PA programs having graduates in 2013, and the other 35 programs having graduating students in the following years (Hooker & Muchow, 2014a). In 2014, new projections suggested that by 2026, the number of PA programs would increase to 256. Hooker and Muchow noted that 5,971 individuals graduated from PA programs in 2013 and each PA class averaged 40.9 graduates per year.

PAs can also pursue postgraduate education in various fields of medicine (Hooker, Klocko, & Larkin, 2010). Hooker et al. indicated that PA postgraduate education programs were not a required part of PA education. Wiemiller, Somers, and Adams (2008) indicated that the first postgraduate training programs for PAs began more than 35 years ago. Eighteen postgraduate PA programs train PAs in orthopedics, anesthesiology, cardiothoracic, critical care, dermatology, emergency medicine, hospitalist medicine, neonatology, neurology, neurosurgery, obstetrics and gynecology, oncology, otolaryngology, psychiatry, rheumatology, sleep medicine, surgery, and trauma and critical care. Postgraduate PA programs last from 6 months to 24 months long, and the number of postgraduate PA programs was expected to increase.

Graduating from an accredited PA program is the first step to becoming a PA (Hooker, Carter, & Cawley, 2004). The Accreditation Review Commission on Education for the Physician Assistant, ARC-PA, was established in order to ensure PA programs were providing quality education (Hooker et al., 2010; Jones, 2007). Jones stated that

ARC-PA did not determine the curriculum length for programs, but established requirements that PA students must complete, including preclinical and clinical education involving the training of interpersonal and communication skills. ARC-PA also requires PAs to train in outpatient, inpatient, long-term care facilities, and emergency departments (Jones). Each PA student is also required to train in emergency medicine, surgery, women's health, pediatrics, geriatrics, family medicine, and internal medicine before they can graduate from a PA program (Hooker, Klocko, & Larkin; Jones).

Another important regulatory organization for PAs is the National Commission on Certification of Physician Assistants (NCCPA), which was created in 1974 to credential PAs (Hooker et al., 2004; Pedersen, 2003). The NCCPA also ensures that PA programs are providing quality education for PA students (Ballweg, 2003). The NCCPA evaluates whether PAs receive education that meets the standards of knowledge to practice medicine (Hooker et al.).

Upon graduation from an ARC-PA accredited program, PAs are required to pass the Physician Assistant National Certifying Examination (PANCE) (Pedersen, 2003). Pedersen indicated that after successfully passing the PANCE, a PA becomes certified. The letter 'C' after PA indicates that a PA has been certified. Until 2013, PAs had to pass the Physician Assistant National Re-certifying Examination (PANRE) every six years in order to maintain their certification. In 2012, the NCCPA revealed that starting in 2014, PAs would transition into the process of passing a recertification exam every 10 years (National Commission on Certification of Physician Assistants, 2012).

In order to maintain certification, PAs must complete 100 hours of continuing medical education (CME) every two years (Hooker et al., 2004). Beginning in 2014, 20

of the required 100 CME hours must be obtained from self-assessment CME or performance improvement CME (National Commission on Certification of Physician Assistants, 2012). Danielsen, Lathrop, and Arbet (2012) indicated that since its establishment, the NCCPA has certified over 97,500 PAs.

After becoming certified, PAs are employed to assist physicians in a collaborative role to provide patient healthcare (Bal & Brenner, 2013). PAs are required to work under the direct supervision of physicians (Larson & Hart, 2007). Van Atta (2012b) suggested that supervising physicians had the responsibility and privilege to delegate the responsibilities of the PA within a PA's scope of practice. Van Atta explained that PAs were integral pieces of physician-led teams that provide medical care. Physicians can benefit from employing PAs because physicians can work fewer hours and can delegate many tasks to PAs (Mittman et al., 2002). The use of PAs allows physicians to see the more complex cases while still being available for consultation if necessary. Hooker, Nicholson, and Le (2009) indicated that PAs may reduce medical liability, and that medical liability had not increased due to the employment of PAs.

Danielsen et al. (2012) indicated that certified PAs were addressing a wide range of healthcare needs in many settings. Everett, Schumacher, Wright, and Smith (2009) suggested that some PAs were the usual provider of healthcare services in underserved patient populations, including those patients who live in rural locations and have no insurance or public insurance other than Medicare. Preventative care services increased from 1987 to 1997 due to healthcare provided by PAs and other healthcare providers (Druss et al., 2003). Freeborn and Hooker (1995) stated, "PAs tend to have certain specialty skills (often procedure-oriented), and patients are directed to them for these

skills and procedures" (p. 716). Hooker and Muchow (2014a) noted that PAs had accounted for 10% of available healthcare providers in 2013. PAs see an average of 70 patients per week and work an average of 40.57 hours per week (National Commission on Certification of Physician Assistants, 2014).

Cawley (2005) suggested that the demand for PAs remained strong. Cawley (2007) suggested that PA jobs were plentiful, and that there was no apparent PA unemployment. Hooker et al. (2011) suggested that the demand for PAs would continue to be strong in the future due to the projected shortage of physicians. Sargen et al. (2011) confirmed that PAs had a secure future and were in a growth phase. In 2014, over 78% of PA graduates had multiple job offers (National Commission on Certification of Physician Assistants, 2014). Sargen et al. also suggested that advanced healthcare providers, such as PAs, needed to be expanded maximally. Bourne, Daher, Javaherian, Hewitt, and Wilson (2012) suggested that the time to complete a PA program, perceived increase in quality of life, and professional satisfaction were all motivating factors for individuals to choose a career as a PA.

PA Demographics

The PA profession is composed of more females than males, and the number of female PAs continues to increase (Hooker et al., 2011; Hooker & Muchow, 2014b; Hooker, Robie, Coombs, & Cawley, 2013). PAs have reported that they feel that their profession is dominated by a female presence (Bourne et al., 2012). In 2010, 61%, or 50,914 of the 83,466 PAs in practice were female (American Academy of Physician Assistants, 2010). In 2014, Hooker and Muchow determined that 75%, or 63,042 of

84,504 of licensed PAs were women. Hooker and Muchow revealed that the mean age of licensed PAs was 42 years old.

Several studies predicted that the number of PAs was expected to increase in the future (Hooker et al., 2011; Hooker et al., 2013; Hooker & Muchow, 2014a). Hooker et al. (2011) indicated that the number of practicing PAs was likely to increase 72%, from 74,476 PAs in 2009, to 127,821 PAs in 2025. Hooker et al. (2013) predicted that 100,000 PAs would be clinically active by the year 2016, and Hooker and Muchow estimated that there would be 125,847 licensed PAs in the U.S. by 2026. The NCCPA (2014) reported that the PA profession had grown 291%, from 43,500 certified PAs in 2003, to 95,583 certified PAs in 2013.

PAs practice medicine in all 50 states, the District of Columbia, and some United States territories (Hooker & Muchow, 2014b). Hooker and Muchow indicated that the national average of licensed PAs per capita was 26.8 PAs per 100,000 U.S. residents. The highest distribution of PAs per population was in Alaska where 60 PAs practice medicine for every 100,000 residents of Alaska. Marzucco et al. (2013) suggested that the ratio of PAs per capita in Alaska was as high as 75 practicing PAs to every 100,000 residents in 2013. The lowest ratio of PAs per population was Mississippi where the ratio was 3.9 PAs per 100,000 residents of that state (Hooker & Muchow).

The role of PAs practicing medicine in international settings has been extensively evaluated (Bohm, Dunbar, Pitman, Rhule, & Araneta, 2010; Doan et al., 2012; Hooker, Harrison, & Pashen, 2010; Mittman et al., 2002). Mittman et al. indicated that PAs had been used internationally since 1992. The concept of PAs has expanded globally and the recruitment and use of PAs who currently practice in the U.S. has been a useful strategy

in showing how PAs are capable of providing health care (Hooker, Hogan, & Leeker, 2007). The global expansion of the PA profession has been taking place since the year 2000. In England, General Practitioners (GPs) who employed PAs were interviewed to determine whether it was advantageous to employ a PA (Drennan, Levenson, Halter, & Tye, 2011). The interviewed GPs indicated that PAs were beneficial to their practices and that they perceived PAs as capable of accomplishing a high volume of work while requiring a low level of supervision.

Hooker et al. (2007) determined that Australia, Canada, the United Kingdom, the Netherlands, Scotland, South Africa, and Taiwan had PA programs or were exploring the use of the PA concept as a health care provider. In Canada, PAs were successfully utilized in a Canadian orthopedic practice (Bohm et al., 2010) although Doan et al. (2012) indicated that the use of PAs in Canada had been debated since the early 1990s. Australian patients also indicated that they were willing to receive care from PAs (Hooker et al., 2010). Two universities in Australia have established PA programs in order to increase the number of healthcare providers in that country (Murray & O'Kane, 2014).

Kuilman, Nieweg, van der Schans, Strijbos, and Hooker (2012) indicated that after PA programs were introduced to the Netherlands in 2001, the number of practicing PAs had increased from three in 2002, to 650 in 2012. PAs were reported as practicing medicine in American Samoa, Guam, the Virgin Islands, the Northern Marianas Islands, Puerto Rico, Africa, and the Pacific (Hooker & Muchow, 2014b). In 2010, a PA program was established in Saudi Arabia to train Saudis who were interested in healthcare (Ahmed, 2014). The NCCPA reported that, during 2013, 475 certified PAs were

practicing medicine outside of the United States, but the vast majority of certified PAs were practicing medicine in the United States (National Commission on Certification of Physician Assistants, 2014).

One advantage of the PA profession is the ability to change clinical specialties over the course of a career (Hooker, Cawley, & Leinweber, 2010). The ability to change clinical specialties was one difference that distinguished PAs from NPs and physicians. Warner, Maio, and Hudmon (2013) noted that the ability to change specialties during a PA career was moderately important to extremely important for 77.6%, or 1,322 of the 1,703 PA respondents in their study.

Cooper (2007) noted that the PA profession saw its future in medical specialties. Smith, Muma, Burks, and Lavoie (2012) indicated that specialty roles for PAs, or roles other than primary care medicine, began to emerge in the 1980s and 1990s. Since 2000, PAs began switching specialties more quickly than ever before (Hooker et al., 2010).

Larson and Hart (2007) suggested that the number of PAs who practiced medicine in specialty care had increased. Morgan and Hooker (2010) concluded that the portion of PAs working in primary care medicine decreased between 1996 and 2005, and that the number of PAs practicing in surgical subspecialties rose between 1997 and 2006. Jones, Seo, Chauhan, and Buske (2011) indicated that the trend to move to specialty medicine was an international trend, with 25% of the Canadian PAs moving from practicing in primary care to practicing in surgery or a medical specialty between 2009 and 2011. Halasy, Leafman, Mathieson, Bowman, and Cannon (2012) suggested that salary and bonuses influenced PAs to practice in specialty medicine.

In 2010, the estimated number of PAs who practiced in the specialty area of orthopedics was 8,688, which represented 10.4% of the total number of practicing PAs in the United States (American Academy of Physician Assistants, 2010). Larson et al. (2011) explained that orthopedics was the third most common subspecialty area of medicine for PAs to practice. Van Atta (2013a) suggested that the use of physician assistants in an orthopedic practice was commonplace. Morgan and Hooker (2010) indicated that the ratio of physicians who practice medicine in orthopedics and PAs who practice medicine in orthopedics was three-to-one. Van Atta suggested that orthopedic practices have used PAs to increase patient volume, increase professional visibility within the community, improve the efficiency and quality of surgical services in and out of the operating room, and improve the continuity of care within an orthopedic clinic. Larson et al. suggested that the majority of PAs who practiced in orthopedics were white, male, had a mean age of 41.6, and practiced in general orthopedics.

PAs who practice medicine in orthopedics provide services such as assisting in surgery, diagnosing and treating orthopedic problems, managing wound care problems, performing soft tissue, tendon sheath, and joint injections, applying casts, performing rounds in the hospital, prescribing medications, performing minor procedures, and writing hospital discharge summaries (Larson et al., 2011; Van Atta, 2012a). PAs in orthopedics can evaluate new patients, preoperative patients, and postoperative patients (Van Atta, 2013b). Some orthopedic PAs are allowed to perform emergency room consultations, reduce and stabilize acute fractures, and interpret bone scans (Larson et al.) Van Atta (2012a) suggested that a PA could see the same types of patients that their supervising physician sees in a day, and then bill for those patient visits. PAs can bill

Medicare 85% of what physicians bill Medicare (Van Atta, 2012a). Cawley and Hooker (2003) suggested that the role of PAs continues to expand. Coerver, Larson, Wick, and Ballweg (2008) confirmed that the roles of PAs in general and subspecialty orthopedics have also continued to expand.

Patient Perception of PAs

Patients are familiar with the concept of PAs as healthcare providers, are willing to see PAs for medical care, and enjoy the care provided by PAs (Dill, Pankow, Erikson, & Shipman, 2013; Doan et al., 2012; Hooker et al., 2010; Kuilman et al., 2012; Larkin & Hooker, 2010; Van Atta, 2013b). Dill et al. determined that 82.5%, or 1,694 of 2,053 patients surveyed, knew who PAs and NPs were, and what services PAs and NPs provided. Dill et al. also determined that 81.4%, or 1,671 of 2,053 patients surveyed, had been treated by PAs or NPs in the past.

Several studies were conducted in order to determine whether patients were willing to receive care from PAs (Dill et al., 2013; Doan et al., 2012; Hooker et al., 2010; Kuilman et al., 2012). When given a scenario of seeing a PA or NP that day for a cough, or seeing a physician the next day for a cough, 60%, or 1,232 of 2,053 patients surveyed, preferred to see a PA or NP that day, and only 25%, or 513 of 2,053 patients surveyed, preferred to wait a day to see a physician (Dill et al.). In a similar study, Doan et al. concluded that 99%, or 226 of the 229 Canadian patients who were surveyed, were willing to see PAs for care rather than waiting longer to see a physician. Hooker et al. concluded that 99%, or 224 of the 225 Australian patients who were surveyed, were willing to see a PA instead of waiting longer to see a physician. In a similar scenario, 450 Dutch patients were given three injury scenarios and options to wait a shorter amount of

time to receive care from a PA, or wait a longer amount of time to receive care from a physician (Kuilman et al.). Kuilman et al. determined that four percent, or 17 of the 450 patients surveyed, were willing to wait longer to receive care from a physician rather than a PA. Kuilman et al. concluded that Dutch patients appeared to prefer shorter wait times to see PAs instead of longer wait times to see physicians. In the United States, Larkin and Hooker (2010) evaluated whether patients in an emergency department were willing to receive care from NPs, PAs, or medical residents. Larkin and Hooker suggested that the majority of patients were willing to see NPs and PAs for minor injuries and illnesses.

Importance of Patient Satisfaction

Patients have indicated that they are satisfied with care provided by PAs (Oliver, Conboy, Donahue, Daniels, & McKelvey, 1986; Counselman et al., 2000; Hooker et al., 1997). Patient satisfaction is an important component of healthcare because satisfied patients are more likely to comply with their provider's prescribed medical care and are more likely to return to that provider for future health care needs (Bell, Krivich, & Boyd, 1997). Satisfied patients are also less likely to leave their healthcare plan (Bodenheimer, 1999). Knudtson (2000) noted that if patients were satisfied with their visit, they were more likely to recommend the health care provider to other patients.

Patient satisfaction is also an important component of healthcare because satisfied patients are more likely to seek medical advice, follow through with treatment recommendations, keep their follow up appointments, and maintain a solid patient-physician relationship (Levesque et al., 2000). Satisfied patients are also less likely to look for a new physician or healthcare provider (Otani, Waterman, & Dunagan, 2012). Patients are more likely to participate and follow through with health-care decisions if

they are satisfied with the care they have received (Hooker et al., 1997). Verbeek, van Dijk, Rasanen, Piirainen, Kankaanpaa, and Hulshof (2001) indicated that dissatisfied patients were more likely to leave a physician's practice and to change health plans.

Otani et al. (2012) noted that physicians had placed an increased emphasis on understanding patient satisfaction. Patient satisfaction has become an important aspect of the medical profession and physicians have begun working hard to make and keep patients happy (Ladd, 2009). Thomas (1998) indicated that patient satisfaction was a goal for all physicians, and that patient satisfaction could not or should not be ignored. Nitse and Rushing (1996) suggested that patient satisfaction was gaining attention because patient satisfaction was considered customer satisfaction, and customer satisfaction was a key determinant of an organization's ability to survive. Understanding patients' satisfaction with experiences at physicians' offices is a substantial way to understanding patients' future satisfaction with their future health care needs.

Health care facilities have begun focusing on improving how patients experience their healthcare visits because meeting customer expectations is an essential part of patient satisfaction (Nitse & Rushing, 1996). The Centers for Medicare & Medicine Services (CMS) have begun to make value-based incentive payments to acute care hospitals partly based on patient satisfaction surveys (Morris, Jahangir, & Sethi, 2013). Satisfied patients bring business to healthcare companies (Nitse & Rushing) and higher customer satisfaction correlates with increased revenue (Taylor, 2012). Verbeek et al. (2001) suggested that healthcare providers should put an effort into increasing patient satisfaction.

Donabedian (1988) suggested patient satisfaction was a patient's judgment on the quality of care they had received. Measuring patient satisfaction has become a way to measure the quality of care that had been delivered by a health care provider (Knudtson, 2000). Bell et al. (1997) suggested that patient satisfaction was a primary determinant of patients' evaluations of the quality of care they had received. Patient satisfaction most importantly can be viewed as an indicator of the overall quality of care provided by a healthcare institution (Bell et al.; Kane et al., 1997; Levesque et al., 2000; Morris et al., 2013; Thomas, 1998). Physicians and patients can benefit from taking time to measure patient satisfaction (Ladd, 2009).

Campbell, Roland, and Buetow (2000) and Bodenheimer (1999) suggested that there was a movement to improve the quality of healthcare in the U.S. Healthcare has begun to be scrutinized for the quality of care that has been provided and also for the satisfaction of those who have received care (Thayaparan, & Mahdi, 2013). Physicians view quality healthcare as the application of evidence-based medical knowledge to the needs of patients (Bodenheimer). Physicians have begun to examine patient satisfaction measures as part of a renewed focus on value and quality in healthcare (Thomas, 1998). The National Committee for Quality Assurance includes patient satisfaction as a component of performance with health plans (Bodenheimer). Thomas suggested that patient satisfaction was ready for future research.

Determinants of Patient Satisfaction

Patient satisfaction could be considered a desired outcome of care (Donabedian, 1988). Kane et al. (1997) indicated that patient satisfaction included judgments on the technical, interpersonal, social and moral aspects of care. Thayaparan and Mahdi (2013) suggested that dimensions of patient satisfaction include the technical quality of the provider, interpersonal manner, communication, financial aspects, time spent with the provider, and accessibility and convenience of the health care facility. Patient satisfaction may be influenced by a healthcare provider's affective behavior, or bedside manner (Kane et al., Otani et al., 2012).

Donabedian (1988) suggested that the art of medicine consisted of technical care and also the management of the interpersonal process. The interpersonal aspect of healthcare was the way by which the technical aspect of care was implemented by healthcare practitioners. Donabedian suggested that the interpersonal relationship of healthcare practitioners and their patients was vitally important and that the interpersonal process of practitioners influenced the care for the patient. Berg et al. (2012) stated, "Patients' perceptions of how the PA treated them as a person influence their beliefs about the PA's ability to provide quality care" (p. 49). Effective communication between healthcare providers and patients is key to patients feeling satisfied (Nielsen et al., 2005).

Bodenheimer (1999) suggested that patients may place more importance on how long they are kept waiting for appointments or how healthcare providers communicate with the patients, rather than the technical aspect of care from healthcare providers. Hill et al. (1992) contended that patients were most satisfied with the technical quality and competence of their healthcare provider. Chang et al. (2013) concluded that patients'

perceptions of professional skills and communication attitudes positively influenced patient satisfaction. Thompson et al. (1996) determined that patients who perceived that tests and procedures were clearly explained, identified as the information delivery in their study, were more satisfied with their encounter at an emergency department. Hill et al. indicated that patient dissatisfaction usually stemmed from issues related to communication, time spent with patients, empathy, accessibility, and the attitudes of healthcare providers towards their patients.

The factors that determine patient satisfaction are complex (Nielsen et al., 2005; Ware et al., 1983). Nielsen et al. suggested that the majority of patient satisfaction research focused on waiting times. Hill et al. (1992) determined that the one area that caused the greatest amount of patient dissatisfaction was the time the patient spent in the waiting area. Bodenheimer (1999) suggested that patients consider how long they are kept waiting for healthcare appointments an important issue. McMullen and Netland (2013) suggested that little information existed about whether the objective measurement of patient waiting time was associated with patient satisfaction. However, Anderson et al. (2007) and Ware et al. indicated that the length of time a patient had to wait to see a physician was a substantial patient satisfaction measure and patients found waiting time an important issue.

Anderson et al. (2007) hypothesized that longer patient waiting times and shorter visits with physicians would lead to lower patient satisfaction scores. Anderson et al. determined that 24.5%, or 1,227 of the 5,003 respondents, had a perceived waiting time of longer than 30 minutes to see their physician. Anderson et al. indicated that the combination of a short time spent with a physician and a long waiting time produced the

lowest level of patient satisfaction. Long waiting time to receive care from a physician received low patient satisfaction scores in primary care clinics (Knudtson, 2000), a student-run free medical clinic (Ellett et al., 2010), an ophthalmology clinic (McMullen & Netland, 2013), and an ED (Thompson et al., 1996).

McMullen and Netland (2013) reported that a linear relationship existed between patient satisfaction and time spent waiting to see a physician, with patients who waited less time to see a physician having higher patient satisfaction scores, and patients who waited longer to see a physician having lower patient satisfaction scores. Thompson et al. (1996) determined the patients who thought their waiting time was shorter than expected to see a physician were more satisfied with their visit compared to patients who thought their waiting time was as expected or longer than expected to see a physician. Hill et al. (1992) suggested that when patients were going to be delayed to their visit with their health care provider, they should be given an explanation and possible estimate of their appointment time.

Sociodemographic factors associated with patient satisfaction reveal conflicting results about who is more satisfied with their healthcare services (Bowling et al., 2013; Knudtson, 2000; Nielsen et al., 2005). Bowling et al. concluded that older patients' expectations were higher than those of younger patients and that older patients were more likely to believe their expectations were being met compared to younger patients. Knudtson determined that older patients were less satisfied with care provided by NPs than younger patients. Knudtson also determined that patients with higher education levels were more likely to be satisfied with the care provided by NPs. However, Quintana et al. (2006) concluded that older patients scored higher in all areas of patient satisfaction

than younger patients. Quintana et al. suggested that patients with no education or only primary education were more satisfied than patients with higher education.

Patients have also indicated that they were satisfied in various healthcare environments. Ellett et al. (2010) concluded that 98%, or 51 of 52 patients surveyed, were satisfied overall with the care they received at a free, student-run clinic. Eighty-six percent, or 60 of 70 patients questioned, indicated that they were either satisfied or highly satisfied with their care at a rheumatology clinic (Hill et al., 1992). Nielsen et al. (2005) concluded that satisfaction was generally high among the patients visiting an outpatient orthopedic clinic. Patients have indicated that they are satisfied with care provided at an ED (Counselman et al., 2000; Thompson et al., 1996).

Thompson and Yarnold (1995) suggested that in order to achieve high levels of patient satisfaction, the healthcare services must meet or exceed patient expectations. Levesque et al. (2000) indicated that patient satisfaction could be improved by changing the patients' expectations of their time in the clinic and by decreasing the patients' overall time in the clinic. Healthcare providers need to remain focused on effective communication, adequate information, and good patient outcomes in order for patients to feel satisfied (Bowling et al., 2013).

How to Measure Patient Satisfaction

Bell et al. (1997) suggested that much attention had been given to the value of measuring patient satisfaction. Patient satisfaction is a valuable measure because it can be viewed as a positive outcome of the medical care administered by healthcare providers. Ware et al. (1983) indicated that patient satisfaction was a personal evaluation of health care services and a measure of care. Cleary and McNeil (1988) noted that patient

satisfaction with medical care was commonly measured and that research in the area of patient satisfaction had increased since the 1980s. Bell et al. indicated that patient satisfaction was measurable, changeable, controllable, manageable, and should be an ongoing focus of any healthcare organization. Patient satisfaction measures provide health care managers with useful information about the structure, processes, and outcomes of care administered by healthcare providers.

Bell et al. (1997) suggested that patient satisfaction measures could alert administrators to positive and negative aspects of their institution. As the health care industry continues to move from price competition to competition based on quality and performance, patient satisfaction is likely to increase in importance relative to an organization's financial success. Low levels of patient satisfaction could lead to customer loss. Assessing patient satisfaction is one way to find out which areas of service needed improvement (Verbeek et al., 2001).

Patient satisfaction has been evaluated and measured by questionnaires, written surveys, phone surveys, face-to-face interviews, phone interviews, focus groups, self-reports, and online surveys (Batchelor et al., 1994; Cleary, 1999; Nitse & Rushing, 1996; Quintana et al., 2006; White, 1999). Data to measure patient satisfaction are easy to collect and can be collected at a low cost (Verbeek et al., 2001). Batchelor et al. suggested that many researchers have developed their own questionnaires to evaluate patient satisfaction.

Verbeek et al. (2001) indicated that patient interviews generally yielded lower patient satisfaction scores compared to patient questionnaires. Most practices are encouraged to use written surveys to test for patient satisfaction because written surveys

are the most reliable and most cost-effective way to receive patient feedback (White, 1999). Ware et al. (1983) suggested that patient satisfaction ratings were more subjective than patient satisfaction reports. For example, Ware et al. described surveys that asked patients to report how much time they spent with their healthcare provider as opposed to rating whether they were given enough time with their healthcare provider. According to Ware et al., patient satisfaction reports are more factual and objective, while satisfaction ratings allow patients to personally evaluate the level of care they have received. Cleary (1999) explained that patient satisfaction surveys were both valid and reliable. White suggested that practices should seek to address interpersonal issues, such as whether providers treated patients with courtesy and respect, with their surveys.

Many physicians have begun using patient satisfaction surveys in their offices (Nitse & Rushing, 1996). Physicians who have conducted patient satisfaction surveys found that patients are willing to talk about their visits and experiences (Ladd, 2009). Cleary (1999) suggested that patients would like their voices to be heard concerning the quality of care they had received. Tremlett (1977) indicated that some patients expressed gratitude for allowing their views of the care they had received to be discussed. The continued use of patient satisfaction surveys could ensure that patient concerns were being addressed (Ellett et al., 2010).

Using surveys to determine levels of patient satisfaction can help medical practices find ways to improve (White, 1999). The results of patient satisfaction surveys could ultimately lead to better care for patients and overall happier patients. Cleary (1999) acknowledged that patient surveys could provide suggested areas for quality improvement.

Patient Satisfaction with PAs

Hooker et al. (2005) acknowledged that the studies to evaluate patient satisfaction with PAs and NPs compared to physicians had been few. Berg et al. (2012) suggested that PAs must acknowledge the impact of their care on patients' perceptions of satisfaction. Berg et al. stated, "Patients' perceptions of how the PA treated them as a person influence their beliefs about the PA's ability to provide quality care" (p. 49). PAs must be aware of the impact of their interpersonal skills and how their interpersonal care affects overall patient satisfaction.

Oliver et al. (1986) examined whether patients in rural and semirural communities were satisfied with services provided by PAs. Oliver et al. also sought to analyze patient satisfaction based on variables including patient age, gender, education, marital status, the number of times a patient had seen a PA, and severity of illness. Oliver et al. noted that previous studies that had analyzed patient satisfaction with services provided by PAs were conducted in urban settings, health maintenance organizations, or multispecialty clinics. Questionnaires were distributed to patients at seven family practice clinics and two satellite offices in Midwestern rural or semirural communities.

Oliver et al. (1986) concluded that PAs provided a high level of patient satisfaction for patients receiving health care services in rural, office-based medical practices. Oliver et al. indicated that patients reported the greatest satisfaction with PA interpersonal skills. Patients expressed high satisfaction with the time the PA spent with the patient and the length of time the patient had to wait to see the PA. Oliver et al. determined that women had higher levels of satisfaction with PAs than men did.

Hooker et al. (1997) investigated whether patients were as satisfied with the care they received from PAs and NPs as with the care they received from physicians. Validated surveys were sent to patients who received care from healthcare providers in the Kaiser Permanente Northwest Division. The survey consisted of eight questions that addressed the effectiveness of communication and degree of satisfaction patients received from PAs, NPs and physicians.

Hooker et al. (1997) concluded that PAs in orthopedics and NPs in obstetrics and gynecology scored slightly higher than physicians in overall satisfaction. Hooker et al. suggested that patient satisfaction was more dependent on communication style rather than who provided care. Hooker et al. concluded that patients were satisfied with their care regardless of who provided the care. Seventeen years later, Hooker stated, "Most patients are satisfied with their healthcare provider, regardless of who provided the care" (R. Hooker, personal communication, July 20, 2014).

In another study, Hooker et al. (2005) examined whether Medicare beneficiaries were as satisfied with the treatment they received from PAs and NPs as they were with treatment they received from physicians. Hooker et al. acknowledged that patients might think as highly of PAs and NPs as they do of physicians. A national, cross-sectional survey was sent to Medicare beneficiaries who were enrolled in the Medicare fee-for-service program for six months. The survey consisted of 92 questions that addressed patient satisfaction. The survey instrument addressed how often healthcare providers listened carefully, showed respect, spent time, and explained things in an understandable way to patients. The survey also sought information on age, gender, race, residence,

supplemental health insurance, and self-reported health status so that the researchers could determine whether there were differences among the different healthcare providers.

Hooker et al. (2005) concluded that 139,536, or approximately 95% of all Medicare beneficiaries surveyed, were satisfied with their healthcare provider. Further, Hooker et al. suggested that patients were as satisfied with the care they received from PAs and NPs as they were with the care they received from physicians. Additionally, Hooker et al. also suggested that there were no differences in patient satisfaction levels between healthcare providers regarding patients' sociodemographic characteristics and health status.

Counselman et al. (2000) explored whether patients were satisfied with the care they received from PAs in an ED FT. An additional objective of this particular study was established to determine whether patients would be willing to wait longer to be seen primarily by an emergency physician (EP), rather than a PA. The authors acknowledged that there were few studies concerning patients' perceptions of medical care provided by PEs, such as PAs and NPs.

Counselman et al. (2000) distributed surveys to patients at the time of the patient's discharge from the ED FT. A total of 1,010 surveys were distributed to patients in the ED FT. One-hundred-and-eleven of the 1,010 surveys were analyzed, for a response rate of 11%. Patients were asked to rate their degree of satisfaction by marking an X on a 100-millimeter visual analog scale. Patients answered yes or no if they were willing to wait a longer period of time to receive care from an EP rather than a PA. If patients responded yes to waiting longer to receive care from an EP, they had to answer if

they were willing to wait 30, 60, 90, or 120 minutes longer. Counselman et al. also sought age, gender, insurance type, and the time patients waited in the ED.

Counselman et al. (2000) determined that the mean patient satisfaction score was 93 out of 100. Thirteen patients responded that they would be willing to wait a longer amount of time to receive care from an EP. Counselman et al. determined that patients seen in an ED FT were very satisfied with the care they received from PAs.

Conclusion

A thorough review of the literature suggested that few studies had evaluated whether patients were satisfied with the care provided by PAs in an orthopedic clinic. In addition, few studies in the literature had evaluated whether patients would wait a longer period of time to receive care from a physician, rather than a PA, in an orthopedic clinic. Research to determine levels of patient satisfaction with care provided by a PA in an orthopedic clinic is supported after a thorough review of the literature.

Summary

The history and role of PAs, the demographics of PAs, patient perception of PAs, the importance of patient satisfaction, determinants of patient satisfaction, how to measure patient satisfaction, and patient satisfaction with PAs were reviewed in order to provide a thorough background of the field and also to establish a research-based foundation for the study. The next chapter will provide a step-by-step plan of the research methodology and will explain how the research questions were answered.

CHAPTER III

METHODOLOGY

Introduction

In the previous chapter, the researcher reviewed the literature related to patient satisfaction with care provided by PAs in an orthopedic clinic. The review of literature included the history and role of PAs, the demographics of PAs, patient perception of PAs, the importance of patient satisfaction, determinants of patient satisfaction, how to measure patient satisfaction, and patient satisfaction with PAs. This chapter will describe the study's methodology. This chapter will include a description of the research design, population, data collection process, methods used to analyze the data, and limitations of the current study. The purpose of this study was to determine whether patients were satisfied with the care provided by PAs in an orthopedic clinic, in order to find ways to improve patient satisfaction.

The research was guided by the following questions:

1. How satisfied were patients with the care they had received from a PA in an orthopedic clinic?
2. How many patients would be willing to wait a longer period of time to be treated by a physician rather than a PA?
3. How much more time would patients be willing to wait to be treated by a physician rather than a PA?

Research Design

As stated, the purpose of this study was to determine whether patients were satisfied with the care provided by PAs in an orthopedic clinic, in order to find ways to improve patient satisfaction. A quantitative research design was developed to analyze whether patients were satisfied with their care from PAs in an orthopedic clinic. According to Gay et al. (2012), a quantitative research design uses numerical data to explain a subject matter of interest. Robson (2011) indicated that quantitative research follows a specific set of procedures so that the study could be replicated. Leedy and Ormrod (2012) indicated that quantitative research seeks to provide explanations that are generalizable to a population.

One type of quantitative research can be referred to as survey research (Leedy & Ormrod, 2012). Leedy and Ormrod stated, "Survey research involves acquiring information about one or more groups of people – perhaps about their characteristics, opinions, attitudes, or previous experiences – by asking them questions and tabulating their answers" (p. 189). Survey research allows for data that have been collected at one time to be generalized to a larger period of time. As discussed in Chapter I and Chapter II, patient satisfaction has been evaluated and measured by questionnaires, written surveys, phone surveys, face-to-face interviews, phone interviews, focus groups, self-reports, and online surveys (Batchelor et al., 1994; Cleary, 1999; Nitse & Rushing, 1996; Quintana et al., 2006; White, 1999). White suggested that medical offices use written surveys to evaluate patient satisfaction because written surveys are the most cost-effective and reliable way to receive patient feedback. Leedy and Ormrod suggested that participants might be more truthful with their responses on a questionnaire than they

would be during a personal interview. For the current study, a previously used cross-sectional patient satisfaction survey was modified, with permission, and developed into a questionnaire for the current study.

The current study was both quasi-experimental and correlational in nature. Gay et al. (2012) stated, "Correlational research involves collecting data to determine whether, and to what degree, a relation exists between two or more quantifiable variables" (p. 9). Salkind (2011) stated, "In quasi-experimental research, participants are preassigned to groups based on some predetermined characteristic or quality" (p. 14). In the current study, participants were placed into groups based on gender and age group. Quasi-experimental designs were used in the current study due to the lack of random assignment of the participants (Gay et al., 2012).

Population

The population for the current study was patients who had received care from a PA in an orthopedic clinic. Gay et al. (2012) indicated that researchers could apply some guidelines to determine whether a sample size is large enough. Gay et al. stated, "The larger the population size, the smaller the percentage of the population required to get a representative sample (p. 139).

The orthopedic clinic was located in the Midwest region of the United States. Participants were patients who had been cared for only by a PA during their visit that day to the orthopedic clinic. The pilot study was conducted in October, 2014. The data from the current research were collected between November, 2014, and January, 2015. The researcher distributed questionnaires to 139 patients; 98 questionnaires were returned, and 11 questionnaires were excluded because the participants did not receive care only

from a PA. The response rate for included questionnaires was 62.6%, or 87 out of 139 questionnaires.

Demographic data collected from participants indicated that 52.9%, or 46 out of the 87 participants were female, while 47.1%, or 41 out of the 87 participants were male. In terms of age, 9.2% of the participants indicated they were between the age of 18 and 44 (n = 8), 50.6% of the participants indicated they were between the ages of 45 and 64 (n = 44), and 40.2% of the participants indicated they were 65 years or older (n = 35). When separated into gender and age group, 4.6% of participants indicated they were male and between the ages of 18 and 44 (n =4), and 4.6% of participants indicated they were female and between the ages of 18 and 44 (n = 4). In addition, 26.4% of the 87 participants indicated that they were both male and in the age range of 45-64 (n=23), while 24.1% of participants indicated that they were female and fell in this age range (n=21). Finally, 16.1% of participants indicated that they were age 65 or older and male (n=14) as opposed to 24.1% who fell in this age group and also indicated that they were female (n=21).

As discussed in Chapter II, a patient's age may influence their satisfaction with their healthcare provider. Quintana et al. (2006) concluded that older patients scored higher in all areas of patient satisfaction compared to younger patients. Hooker et al. (2005) also suggested that older patients were satisfied with their healthcare providers, which included physicians, PAs and NPs. However, Knudtson (2000) suggested that older patients were less satisfied with care provided by NPs than younger patients. Data involving the influence of gender on a patient's satisfaction have been sparse.

Data Collection

The current study utilized a modified version of a patient satisfaction survey previously used by Counselman et al. (2000). Counselman gave written consent to modify the survey and utilize it for the current study. According to Batchelor et al. (1994), many researchers develop their own questionnaires to evaluate patient satisfaction. As discussed in Chapter I, Melissa McCormack, who is an expert in the field of patient satisfaction surveys, evaluated and approved the *Patient Satisfaction Questionnaire* for content validity. According to Salkind (2011), "The simplest, most straightforward type of validity is content validity. Content validity indicates the extent to which a test represents the universe of items from which it is drawn . . ." (p. 124). Reliability of the *PSQ* was calculated post hoc, as well as in a pilot study. See Appendix A for a copy of the *PSQ*.

The *PSQ* consisted of four definitions and 10 questions. The definitions of physician, physician assistant, interpersonal manner, and technical quality were included so that participants fully understood the terminology of the questions. First, participants were asked to indicate who had provided their care with choices of a physician, PA, or both. Data from participants who had received care from a PA only were included in the study. Next, participants were instructed to rate their level of satisfaction for how long they had to wait to receive care from their healthcare provider, how satisfied they were with their healthcare provider's interpersonal manner, how satisfied they were with their healthcare provider's technical quality of care, and how satisfied they were overall with their visit. Each satisfaction question was evaluated on a 7-point Likert scale to assess satisfaction. An answer of one indicated very dissatisfied, and an answer of seven

indicated very satisfied. Participants were then asked to indicate whether they were willing to wait longer to receive care from a physician rather than a PA, given options of yes or no. If participants were willing to wait longer, they were asked to indicate how much longer they would wait to receive care from a physician rather than a PA by choosing from time options of 30 minutes, 60 minutes, 90 minutes, or 120 minutes and longer. Participants were asked to indicate their gender, given options of male or female, and to indicate which age group they belonged to given the options of 18-44, 45-64, and 65 and older. The final question was an open-ended question that asked what could be done to improve the participant's level of satisfaction. See Appendix C for participant remarks to the open-ended question that asked what could be done to improve the participant's level of satisfaction.

The researcher obtained written permission from the CEO of the orthopedic group to collect data. The *PSQ* survey was distributed to patients receiving care from PAs at an orthopedic clinic in the Midwest region of the United States. Gay et al. (2012) explained that researchers could not always gather a random sample due to practical constraints, and therefore researchers could use nonrandom sampling to gather data. Nonrandom sampling includes convenience sampling, which uses volunteers to participate in the study. Convenience sampling was utilized to distribute surveys to willing participants in the orthopedic clinic. Robson (2011) indicated that convenience sampling was one of the most widely used methods of sampling.

The *PSQ* questionnaire was piloted to 16 participants. All 16 participants of the pilot study indicated that the questions were clear and easy to understand, and that the participants did not have any difficulty completing the questionnaire. The Statistical

Package for the Social Sciences (SPSS) was then utilized to calculate internal consistency reliability using Cronbach's alpha (Gay et al., 2012). Cronbach's alpha was determined to be .75 for the *PSQ* pilot study. See Appendix B for the *PSQ* pilot questionnaire.

After the *PSQ* questionnaire was piloted and reliability was demonstrated, written questionnaires were distributed to patients receiving care from a PA at an orthopedic clinic in the Midwest region of the United States. Participants were patients who had been cared for only by a PA that day during their visit to the clinic. Participation in the study was voluntary and all participants received an informed consent document explaining the nature of the study and the risks involved with participation. The informed consent document also included the researcher's contact information in order to allow the participants to communicate any questions or concerns they had, and informed them that they had the right to withdraw from the study at any time. The researcher distributed questionnaires to PAs and clinic staff to hand out to patients entering the orthopedic clinic. Each participant was asked to return the completed questionnaire to any staff member of the clinic.

Nominal scale data collected from the *PSQ* questionnaire included healthcare provider, whether the participant would be willing to wait longer to be seen primarily by a physician rather than a PA, age group, participant gender, and time willing to wait category to receive care from a physician. Interval scale data included patient satisfaction ratings regarding waiting time satisfaction, technical quality satisfaction, interpersonal manner satisfaction, and overall satisfaction.

Analytical Methods

The researcher used SPSS for data analysis of the research questions. For Research Question 1, mean overall satisfaction scores of each gender and age group were reported in tabular form. The mean and standard deviation for the four satisfaction measures were also reported in tabular form. Next, the researcher sought to determine which gender and which patient-age group was most satisfied with the care they received from PAs. Finally, the researcher sought to determine whether relationships existed between interpersonal manner satisfaction and overall satisfaction, waiting time satisfaction and overall satisfaction, and technical quality satisfaction and overall satisfaction.

The first research question was both correlational and a quasi-experiment. For the quasi-experiment, the dependent variable was the overall patient satisfaction rating, and the independent variables were patient age group, and patient gender. The patient age group had three levels (18-44, 45-64, 65+) and the patient gender had two levels (male and female). The researcher cast the data in the form of a 2 (gender of participant) X 3 (age of participant) between-subjects factorial design, using the data from the overall satisfaction question. The researcher then conducted a 2X3 factorial between-subjects ANOVA in order to determine if a relationship existed between overall patient satisfaction scores, the dependent variable, and either of the independent variables of patient age or gender (Robson, 2011). The 2x3 factorial between-subjects ANOVA also permitted the researcher to examine the possibility that age and gender might interact in a unique way to relate to patient satisfaction. Pearson product-moment correlations were conducted to determine if relationships existed between technical quality satisfaction (X)

and overall patient satisfaction (Y), waiting time satisfaction (X) and overall patient satisfaction (Y), and interpersonal manner satisfaction (X) and overall patient satisfaction (Y).

For Research Question 2, which asked participants if they were willing to wait longer to see a physician rather than a PA, frequency counts by gender and age showing the total numbers of yes respondents and no respondents were displayed in tabular form. The second research question is also correlational because it examines the relationship between variable X and variable Y. The researcher used a chi-square test of independence to determine whether willingness to wait longer to receive care (X) from a physician rather than a PA was related to gender (Y). The researcher also used a chi-square test of independence to determine whether willingness to wait longer to receive care (X) from a physician rather than a PA was related to patient age group (Y). Chi-square tests of independence allowed for variables of categorical data, including gender (male or female), willingness to wait (yes or no), and age group (18-44, 45-64, 65 and older), to be compared.

For Research Question 3, the researcher sought to determine the number of patients who responded to each waiting time option. Frequency counts by gender and age for each time category were displayed in tabular form.

Limitations

There were several limitations to the current study. To begin with, the overall sample size was small and could be considered a limitation to generalizability. In addition, the significant findings in the factorial ANOVA should be interpreted with some caution because the sample size across conditions was unequal. Finally, the data

were gathered in the Midwest region of the United States and may not reflect the views of patients being cared for by PAs in other regions of the United States or elsewhere.

Conclusion

This chapter explained the detailed methodology of the current study. The research design, population of the study, data collection process, methods for statistical analysis, and limitations of the current study were all described in specific detail. The next chapter will discuss the findings of the current study and recommendations for future studies.

CHAPTER IV

FINDINGS AND CONCLUSIONS

Introduction

In the previous chapter, the researcher explained the methodology for the current study. The methodology of the current study included a description of the research design, population, data collection process, methods used to analyze the data, and limitations of the current study. This chapter will report the findings of the data collection and analyses, as well as the conclusions, implications, and recommendations for future studies. The purpose of this study was to determine whether patients were satisfied with the care provided by PAs in an orthopedic clinic, in order to find ways to improve patient satisfaction.

The research was guided by the following questions:

1. How satisfied were patients with the care they had received from a PA in an orthopedic clinic?
2. How many patients would be willing to wait a longer period of time to be treated by a physician rather than a PA?
3. How much more time would patients be willing to wait to be treated by a physician rather than a PA?

Findings

Survey Results

The *PSQ*, which evaluated patient satisfaction measures on a 7-point Likert scale, was tested for reliability by calculating Cronbach's Alpha (Gay et al., 2012). Analysis of the four satisfaction measures yielded a Cronbach's Alpha of .66. According to Yockey (2011), a Cronbach's Alpha level of .60-.69 represented a marginal adequacy of reliability, suggesting that the survey was adequately reliable to test for patient satisfaction. The results from the current study indicated that 47.1%, or 41 of the 87 participants were male, while 52.9%, or 46 of the 87 participants were female. The results of the current study revealed that 9.2%, or eight of the 87 participants, were between the ages of 18-44, 50.6%, or 44 of the 87 participants, were between the ages of 44-65, and 40.2%, or 35 of the 87 participants, were 65 years and older. The response rate of the survey was 68%, with 87 out of 128 surveys returned.

Research Question One

Mean overall satisfaction ratings of each gender and age group are represented in Table 1. Females ages 45-64 and males ages 65 and older had the highest mean overall satisfaction ratings, while females ages 18-44 had the lowest mean overall satisfaction ratings. The mean satisfaction ratings for all participants (n = 87), was high.

Table 1

Overall Satisfaction Ratings for Gender and Age Group

Age	Gender	*N*	Mean	Std. Deviation
18-44	Male	4	6.50	.58
	Female	4	6.25	.50
	Total	8	6.38	.52
45-64	Male	23	6.87	.34
	Female	21	7.00	.00
	Total	44	6.93	.25
65+	Male	14	7.00	.00
	Female	21	6.95	.22
	Total	35	6.97	.17
Total	Male	41	6.88	.33
	Female	46	6.91	.28
	Total	87	6.90	.31

Finally, as indicated by Table 2, there was no main effect of the gender variable nor did the interaction between the age group and gender variables reach statistical significance. However, there was a significant main effect of the patient age variable, indicating a statistically significant relationship between patient age (the independent variable) and overall satisfaction (the dependent variable). The results indicated that patients ages 18-44 had statistically significant lower satisfaction levels than patients ages 45 and older. The findings should be interpreted with caution because sample sizes across the patient age conditions were quite different.

Table 2

ANOVA Summary for Overall Satisfaction Ratings as a Function of Age and Gender

Source	*df*	*Mean Square*	*F*	*Sig.*	*Eta*^{2}
Age	2	1.22	18.71	.00*	.316
Gender	1	.04	.60	.44	.007
Age x Gender	2	.16	2.42	.10	.056
Error	81	.066			.621
Total	86				

* $p < .05$

The mean and standard deviation for the four satisfaction components rated are represented in Table 3. As indicated by Table 3, the interpersonal manner had the highest mean satisfaction rating, while the waiting time had the lowest mean satisfaction rating. Overall, all components rated received a strong satisfaction rating.

Table 3

Mean and Standard Deviation of Satisfaction Component Ratings

		Waiting Time Satisfaction	Technical Quality Satisfaction	Interpersonal Manner Satisfaction	Overall Satisfaction
N	Valid	87	87	87	87
	Missing	0	0	0	0
Mean		6.68	6.85	6.91	6.90
Standard Deviation		.84	.42	.29	.31

In order to determine if there was a significant relationship between the overall patient satisfaction ratings and each of the satisfaction components rated, a Pearson-product moment correlational analysis was conducted. Table 4 displays the results of that analysis. The results of Pearson product-moment correlations between overall satisfaction and waiting time satisfaction, overall satisfaction and technical quality satisfaction, and overall satisfaction and interpersonal manner satisfaction were statistically significant at the $p < .05$ level. The strongest correlation existed between overall satisfaction and technical quality satisfaction and the weakest correlation existed between overall satisfaction and waiting time satisfaction. Statistically significant positive relationships existed between waiting time satisfaction and overall satisfaction, technical quality satisfaction and overall satisfaction, and interpersonal manner satisfaction and overall satisfaction. As indicated by Table 4, technical satisfaction had the highest coefficient of

determination, while waiting time satisfaction only accounts for less than half of the correlation to overall patient satisfaction.

Table 4

Pearson Product-Moment Correlations Between Overall Satisfaction and Satisfaction Component Ratings

		Waiting Satisfaction	Technical Satisfaction	Interpersonal Satisfaction
Overall Satisfaction	Pearson Correlation (r)	.48*	.69*	.68*
	Sig. (2-tailed)	.00	.00	.00
	N	87	87	87
	r^2	.23	.47	.46

*$p < .01$ (2-tailed)

Research Question 2

Research question 2 explored whether patients were willing to wait longer to receive care from a physician rather than a PA. Frequency counts of participants by gender and age showing the total numbers of yes respondents and no respondents are displayed in Table 5 and Table 6. Most of the participants, regardless of age group, were not willing to wait longer to see a physician, rather than a PA. When considering whether gender plays a role in willingness to wait longer, male patients were slightly more willing to wait longer than females.

Table 5

Willingness to Wait Longer by Age Group

		Age			
		18-44	45-64	65+	Total
Willing to Wait Longer	Yes	3	10	6	19
	No	5	28	27	60
Total		8	38	33	79

Table 6

Willingness to Wait Longer by Gender

		Gender		
		Male	Female	Total
Willing to Wait Longer	Yes	10	9	19
	No	26	34	60
Total		36	43	79

The results relating to whether willingness to wait longer to receive care from a physician rather than a PA was related to gender or age did not demonstrate statistical significance. The researcher used a chi-square test of independence to determine whether willingness to wait longer to receive care from a physician rather than a PA was related to gender. The chi-square test of independence revealed that no statistically significant relationship existed between gender and willingness to wait longer to receive care from a

physician rather than a PA. Results of the chi-square test of independence between gender and willingness to wait longer are represented in Table 7.

Table 7

Gender and Willingness to Wait Longer Chi-Square Test of Independence

	Value	*df*	Asymp. Sig. (2-sided)
Pearson Chi-Square	.50	1	.48

*$p < .05$

The chi-square test of independence revealed that no statistically significant relationship existed between patient age and willingness to wait longer to receive care from a physician rather than a PA. Results of the chi-square test of independence between patient age and willingness to wait longer are represented in Table 8.

Table 8

Patient Age and Willingness to Wait Longer Chi-Square Test of Independence

	Value	*df*	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.52	2	.47

*$p < .05$

Research Question Three

Research question 3 examined the amount of time patients were willing to wait to receive care from a physician rather than a PA. The results indicated that no patients were willing to wait longer than 60 minutes to be treated by a physician, rather than a PA. Overall, more males and more patients ages 45-64 were more willing to wait to receive care from a physician rather than a PA. Frequency counts for patient gender and each

time category are shown in Table 9. Frequency counts for patient age group and each time category are shown in Table 10.

Table 9

Time Patients Were Willing to Wait by Gender

		Gender		
		Male	Female	Total
Time	30 Minutes	13	7	20
	60 Minutes	1	2	3
	90 Minutes	0	0	0
	120 Minutes +	0	0	0
Total		14	9	23

Table 10

Time Patients Were Willing to Wait by Age Group

		Age			
		18-44	45-64	65 +	Total
Time	30 Minutes	3	12	5	20
	60 Minutes	0	1	2	3
	90 Minutes	0	0	0	0
	120 Minutes +	0	0	0	0
Total		3	13	7	23

Conclusions

The researcher was able to determine the overall level of patient satisfaction with care provided by PAs in an orthopedic clinic. The mean overall level of patient satisfaction for the participants (n = 87) suggests a high level of satisfaction. Results from the current study were consistent with previous studies in the literature that suggested that patients experienced high levels of satisfaction with the care provided by PAs (Counselman et al., 2000; Hooker et al., 1997; Hooker et al., 2005; & Oliver et al., 1986).

The data demonstrated statistically significant positive relationships between overall ratings of patient satisfaction and ratings for waiting time satisfaction, technical quality satisfaction, and interpersonal manner satisfaction. Results from the data analysis indicated that the technical quality of the PA was the most important determinant of overall patient satisfaction. Results from the current study reflected similar findings from the literature that suggested that patient satisfaction levels were influenced by the amount of time patients had to wait to receive care, the technical quality of the healthcare

provider, and the interpersonal manner of the healthcare provider (Anderson et al., 2007; Berg et al., 2012; Bodenheimer, 1999; Donabedian, 1988; Hill et al., 1992; Kane et al., 1997; Knudtson, 2000; McMullen & Netland, 2013; Otani et al., 2012; Thayaparan & Mahdi, 2013; Thompson et al., 1996; Ware et al., 1983).

Results from the current study indicated statistically significant lower levels of patient satisfaction for younger patients, ages 18-44, compared to middle age patients, ages 45-64, and older patients, ages 65 and older. Previous research suggested conflicting results about which aged patients were more satisfied with their healthcare services (Bowling et al., 2013; Knudtson, 2000; Nielsen et al., 2005). The results from the current study were similar to the results of Bowling et al., and Quintana et al. (2006), that suggested that older patients were more satisfied with the care they had received from their healthcare provider, than younger patients. The results of the current study suggested that there was no effect of gender on the overall satisfaction ratings.

The results of the current study were similar to the results of previous studies in the literature, which suggested that the majority of patients were not willing to wait longer to receive care from a physician rather than a PA (Counselman et al., 2000; Dill et al., 2013; Doan et al., 2012; Hooker et. al., 2010; Kuilman et al., 2012). Analysis of the data from the current study indicated that no statistically significant relationships existed between willingness to wait longer to receive care from a physician, rather than a PA, and patient gender or patient age group. The results from the current study indicated no patients were willing to wait longer than 60 minutes to receive care from a physician rather than a PA, independent of their gender or age group.

Implications and Recommendations

The purpose of the current study was to measure patient satisfaction levels with care provided by PAs in an orthopedic clinic, in order to find ways of improving patient satisfaction levels. The results of the current study add to the literature in the field of patient satisfaction with care provided by PAs, specifically in the medical specialty of orthopedics, in an orthopedic clinic setting. The current study analyzed the relationships between overall patient satisfaction levels and waiting time satisfaction, technical quality satisfaction, and interpersonal manner satisfaction.

An important finding of the study indicated that waiting time, the technical quality of the healthcare provider, and the interpersonal manner of the healthcare provider, all influenced the overall satisfaction level of patients. In addition, of these three satisfaction components, technical quality satisfaction was the most important component of overall satisfaction. Healthcare providers should understand the importance of contributing factors to patient satisfaction and strive to provide a high level of technical quality, a high level of interpersonal manner, and shorter waiting times, in order to keep patients satisfied with the healthcare experience. The findings from the current study also indicated that middle age patients, ages 45-64, and older patients, ages 65 and older, were more satisfied with the care provided by PAs in an orthopedic clinic, compared to younger patients, ages 18-44. PAs should continue to focus on providing a highly satisfactory healthcare experience with the goal of increasing satisfaction levels for younger patients.

Future research on patient satisfaction with care provided by PAs in an orthopedic clinic could focus on satisfaction levels among the various types of patients that receive

care, including new patients, established patients, or post-operative patients. Future research on patient satisfaction with care provided by PAs in an orthopedic clinic could also evaluate whether patient satisfaction levels improve over a period of time. Finally, future research could evaluate levels of patient satisfaction with care provided by PAs in an orthopedic clinic for patients who were receiving care from a PA for the first time.

The important findings from the current study suggest a high level of patient satisfaction with care provided by PAs in an orthopedic clinic. Physician Assistants should understand that patient waiting time, the technical quality of healthcare providers, and the interpersonal manner of healthcare providers, all positively influence the overall level of patient satisfaction. Physician Assistants should continue to strive for achieving high levels of patient satisfaction.

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Appendix A

The Patient Satisfaction Questionnaire (PSQ)

Patient Satisfaction Questionnaire

A Physician (MD) is a person who is legally qualified to practice medicine.

A Physician Assistant (PA) is a person who is qualified to practice medicine under the supervision of a licensed physician.

Interpersonal manner is the way in which providers interact personally with patients.

Technical quality is the competence of providers and adherence to high standards of diagnosis and treatment.

Please circle the letter or number of your response for the following questions

1. Today I received care primarily from:

    A. Physician (MD)

    B. Physician Assistant (PA)

    C. Both

2. How would you rate your satisfaction with the time you had to wait to be treated today by your healthcare provider (i.e., MD or PA)?

1 2 3 4 5 6 7

(Very Dissatisfied) (Very Satisfied)

3. How would you rate your satisfaction with the technical quality of care you received today from your primary care giver (i.e., MD or PA)?

1 2 3 4 5 6 7

(Very Dissatisfied) (Very Satisfied)

4. How would you rate your satisfaction with the interpersonal manner of your primary care giver (i.e., MD or PA)?

1 2 3 4 5 6 7

(Very Dissatisfied) (Very Satisfied)

5. How would you rate your overall satisfaction with the care you received today by your primary care giver (i.e., MD or PA)?

1 2 3 4 5 6 7

(Very Dissatisfied) (Very Satisfied)

6. Would you be willing to wait longer in the orthopedic clinic to be seen primarily by a Physician, rather than a Physician Assistant (PA)?

A. Yes

B. No

7. If you answered, "Yes" to the above question, how much longer would you have been willing to wait to be seen primarily by a Physician?

A. 30 Minutes

B. 60 Minutes

C. 90 Minutes

D. 120 Minutes and longer

8. Which age group do you belong to?

A. 18-44

B. 45-64

C. 65 and older

9. What is your gender?

    A. Female

    B. Male

10. What can be done to improve your level of satisfaction?

Appendix B

The Patient Satisfaction Questionnaire (PSQ) *Pilot*

Patient Satisfaction Questionnaire

A Physician (MD) is a person who is legally qualified to practice medicine.

A Physician Assistant (PA) is a person who is qualified to practice medicine under the supervision of a licensed physician.

Interpersonal manner is the way in which providers interact personally with patients.

Technical quality is the competence of providers and adherence to high standards of diagnosis and treatment.

Please circle the letter or number of your response for the following questions

1. Today I received care primarily from:

    A. Physician (MD)

    B. Physician Assistant (PA)

    C. Both

2. How would you rate your satisfaction with the time you had to wait to be treated today by your healthcare provider (i.e., MD or PA)?

1 2 3 4 5 6 7

(Very Dissatisfied) (Very Satisfied)

3. How would you rate your satisfaction with the technical quality of care you received today from your primary care giver (i.e., MD or PA)?

1 2 3 4 5 6 7

(Very Dissatisfied) (Very Satisfied)

4. How would you rate your satisfaction with the interpersonal manner of your primary care giver (i.e., MD or PA)?

1 2 3 4 5 6 7

(Very Dissatisfied) (Very Satisfied)

5. How would you rate your overall satisfaction with the care you received today by your primary care giver (i.e., MD or PA)?

1 2 3 4 5 6 7

(Very Dissatisfied) (Very Satisfied)

6. Would you be willing to wait longer in the orthopedic clinic to be seen primarily by a Physician, rather than a Physician Assistant (PA)?

A. Yes

B. No

7. If you answered, "Yes" to the above question, how much longer would you have been willing to wait to be seen primarily by a Physician?

A. 30 Minutes

B. 60 Minutes

C. 90 Minutes

D. 120 Minutes and longer

8. Which age group do you belong to?

A. 18-44

B. 45-64

C. 65 and older

9. What is your gender?

    A. Female

    B. Male

10. Were the questions clear and easy to understand? If not, please explain why.

    A. Yes

    B. No

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11. Did you have difficulty completing the survey? If yes, please explain why.

    A. Yes

    B. No

Appendix C

Participant Remarks

Participant Remarks

1. Quick and thorough. Good job!
2. Nothing
3. My first experience, it was great
4. Always good job. This is what I love about (the name of the orthopedic clinic). If I was a pro athlete or just me, I get the same care, respect, and attention from the staff. Everything (the name of the orthopedic clinic) does to give dignity to its patients is always first class
5. 100% is hard to beat
6. More information on the surgery and recovery beforehand.
7. Nothing/great
8. Nothing. Satisfied with the PA (name of the PA) as he is!
9. Everything was fine
10. Improve waiting time
11. Have snacks
12. Very satisfied
13. None, love (the name of the orthopedic clinic)
14. I have been completely satisfied. Even when I see a PA, if I need to talk to my physician I've been able to
15. Everything went well
16. Not much. I've been very happy with the services I've been provided with
17. I'm quite satisfied with (the name of the physician's) staff and PAs
18. I am always satisfied when coming to (the name of the orthopedic clinic)

19. Nothing! I'm satisfied! Thanks!
20. Nothing. Very friendly and answered all my questions
21. Very satisfied
22. Not have to need treatment at all
23. Be sure to listen to the patient. Each pain or surgery is new to us so must be explained in detail
24. Just need more backwards motion!
25. ?
26. never had any problem with this facility. Always friendly people, courteous
27. Nothing! (the name of the orthopedic clinic) and (the name of the PA) are great!!
28. Everything went well and I'm satisfied how things are going
29. The physician and the PA were very good and I am completely satisfied
30. Very satisfied
31. I could not be happier with my care from my physician and physician assistant
32. Not much. Thank you
33. Nothing. Everything was fully explained and treated promptly
34. Did a great job. Answered questions thoroughly
35. Not a thing
36. I can't think of anything. Awesome quality care
37. Was very satisfied. Everyone was great!
38. I am totally satisfied. Thank you
39. Not much. Excellent
40. Have appointments later in the afternoon

41. I can see nothing to improve on the care I have received from personnel and doctors. Hooray!
42. Satisfied
43. Nothing. I am very happy with (the name of the orthopedic clinic).
44. I am happy with using a PA for just getting a shot
45. (Name of professional sports team) posters in the room!
46. I am very satisfied with my care here
47. Completely satisfied with the services. (Name of physician) and (name of the PA) are the best!