Patient Satisfaction: Important Determinants and an Examination of Physician Assistant Patient Satisfaction Ratings - A Literature Review

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In partial fulfillment of the requirements for the degree of Master of Science in Biomedical Sciences

Date of Presentation:
December 15, 2005

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An Overview of the Physician Assistant (PA) Profession

In 1961, a physician named Charles Hudson wrote and published an article entitled “Expansion of Medical Professional Services with Nonprofessional Personnel.” Dr. Hudson and other medical professionals recognized the overall shortage and irregular distribution of primary care physicians. They were also aware of the growing complexity of medical care brought about by technology and specialization, as well as the growing desire of physicians for more leisure time (Holt, 1998). Based on these observations, Dr. Hudson proposed two types of non-professional personnel, both of which would come from a non-medical, meaning not a physician, or non-nursing background. The first type of assistant would only undergo on-the-job training and assist in medical and surgical in-patient divisions, operating rooms, and emergency departments (Carter, 2001). Hudson had the well-trained ex Army and Navy medical corpsmen, who often had difficulty finding medical work in the civilian sector, in mind to fill this new assistant position. The second type of assistant proposed by Dr. Hudson would be required to attend two years of college plus two years of vocational training leading to a bachelor of medicine in science degree (Carter, 2001). This practitioner would fill roles intermediate of that between technician and doctor and would also take on some degree of the medical responsibility.

It would be four years after Dr. Hudson’s forward-thinking before Dr. Eugene A. Stead, Jr., would start the first physician assistant program at Duke University. Duke’s initial physician assistant curriculum was competency based, much like Dr. Hudson’s first proposal, and relied heavily on ex-military corpsmen’s medical training as a building block. Stead felt that valuable time would be lost if candidates had to complete preparatory college courses prior to entering Duke’s program (Carter, 2001). Shortly after the creation of the physician assistant
(PA) program at Duke, many other programs across the country began opening. Yet it soon became evident that society and medical professionals alike were not supportive of the idea of non-degree granting academic programs such as Dr. Stead’s program at Duke University.

In 1968, Dr. Hu Meyers launched a PA program at Alderson-Broaddus College. Dr. Meyer’s philosophy was that the PA curriculum should lead to the awarding of a bachelor’s degree upon completion. Most of the subsequent PA programs would follow Dr. Meyer’s philosophy of requiring a prerequisite amount of college coursework and awarding academic degrees upon completion of their program.

Until recently, physician assistant programs throughout the country offered master, bachelor, and associate degrees along with a few certificate programs. Now the accrediting body, Accreditation Review Commission on Education for the Physician Assistant (ARC-PA), requires that all PA programs offer a minimum of a bachelor’s level degree. Currently there are over 130 accredited programs (AAPA). Graduates of accredited programs are eligible to sit for the Physician Assistant National Certification Exam (PANCE). Once certified, physician assistants are able to work in all areas of medicine; however the educational focus is based on primary care such as family practice, internal medicine, pediatrics, and obstetrics and gynecology. Physician assistants’ scope of practice is determined by federal and state law as well as by their supervising physician. In general, PAs see many of the same types of patients and perform many of the same medical procedures as their supervising physician. Of course, this depends on the supervising physician’s confidence in the PA, and the PA’s own training and experience.

“Physician assistants are medical professionals licensed to practice medicine with physician supervision,” (American Academy of Physician Assistants, 2005). This contradicts
Dr. Hudson’s initial proposal of a “non-professional” assistant; in addition, referring to PAs as medical professionals is an attribute to the growth of the profession since its inauguration in 1965. “As part of their responsibilities, PAs conduct physical exams, diagnose and treat illnesses, order and interpret tests, counsel on preventive health care, assist in surgery, and, in virtually all states, can write prescriptions” (American Academy of Physician Assistants, 2005). To remain competent medical professionals, physician assistants must continuously strive to further their medical knowledge and stay up-to-date with current medical literature. In order to maintain national certification, PAs must pass the Physician Assistant National Recertification Exam (PANRE) every six years and log a minimum of one hundred continuing medical education hours every two years. In addition to certification, PAs must be licensed in the state in which they practice.

**Patient Satisfaction with Care Research**

“Patient satisfaction is defined as a health care recipient’s reaction to salient aspects of the context, process, and result of their service experience” (Pascoe, 1983, p. 189). Research on patient satisfaction with care has been conducted in all areas of medicine for many years and it is widely accepted as a valuable measuring tool in the medical community. Patient satisfaction research allows the investigators to measure the success of implemented changes, quality of care, and multiple other outcome measures.

In the last decade, measuring patient satisfaction has come to be regarded as the method of choice for obtaining patients’ views about their care (Arthur, Avis, & Bond, 1995). Many aspects of care, which are critical to a practice and provider’s success, are able to be evaluated, measured, and analyzed with the intent to drive changes that will benefit both the provider and
Applegate (1997) discusses the importance of patient satisfaction with care research in her article “Patient Satisfaction: A Critical Vital Sign.” She feels that the modern population is changing in terms of its health care expectations. “To avoid difficulties in treating your patients, it is important to measure, monitor, and anticipate the patients changing needs” (Applegate, 1997, p. 93). Applegate contends it is essential that practitioners mold their practice and practice style to better accommodate their patients. Without this accommodation, Applegate believes it is inevitable that many practitioners would see a declining patient population.

Patient satisfaction research is used to develop management strategies and goals for increasing or at least maintaining patient population. It allows practitioners to stay attuned to their patients. “The information provided [can] uncover potential problems before a crisis occurs. It can be a reference point for making decisions” (Applegate, 1997, p. 96). Patient satisfaction research can also help build patient loyalty. “An effective study will make a patient feel more valued. It can reveal unmet needs and expectations, referral patterns, and referral sources that will signal current or future changes in your patient population” (Applegate, 1997, p. 96).

Boudreaux and O’Hea (2003) describe patient satisfaction research as a “significant mediator for a range of important outcomes” (p. 13). Satisfied patients will be more compliant with their medical treatment and more willing to return for medical service (Boudreaux & O’Hea, 2003). Through research, practitioners are able to implement changes that promote greater patient satisfaction and by doing so they are also promoting patient health and well being. Boudreaux and O’Hea also suggest that knowing one’s patient satisfaction ratings can help a practice financially. High satisfaction ratings correlate positively with patients returning to that practice for additional health care. Conversely, dissatisfied patients are more likely to
shop around for other health care services (Boudreaux & O’Hea, 2003). Sun et al (2000) believes that satisfied patients are more likely to have higher medical compliance, decreased utilization of medical services, less malpractice litigation, and also a greater willingness to return. It is widely accepted that patient satisfaction research can help predict patient treatment outcomes and also financial trends of a medical practice.

Patient satisfaction research can also help practitioners to determine if a concern or complaint is widespread or isolated. Often, medical practices make policy decisions based on one or two patient complaints. Patients usually will not voice their opinion on an aspect of a practice that they accept and are satisfied with. Patient satisfaction research allows practices to assess aspects of their practice that they would otherwise be unaware of. Analyzing data, ideally, will prevent a practice from making an unneeded change based on only a few patients’ opinions. Applegate suggests that by regularly checking satisfaction levels on a cross section of the patient population, practices can address any major problem areas and omit complaints on areas that the majority of patients is satisfied with. This could potentially save a practice from implementing unnecessary change and disappointing the majority of already-satisfied patients. Patient satisfaction research allows investigators to identify areas where the patient majority feels change is needed, and thus helps practices in making good policy decisions.

Patient satisfaction research is also a good method for evaluating change. Changes are usually made with the intent to better satisfy the patient. The goal of quality improvement is to continuously improve the quality of care being given. Andrews et al. (1995) believes that patient satisfaction research can serve as an evaluation for changes made. By conducting research before and after the implementation of a plan, one can assess how effective or accepted the plan was to the patient (Andrews, 1995). If analyzed critically, the data could be divided into
individual components of change and could allow the researcher to modify the plan to further increase patient satisfaction. For instance, consider a family practice that clinic began playing classical music in the waiting room and also began handing out pamphlets with the estimated wait time and interesting medical facts to help patients pass the time while waiting to be seen. Quality research may find that patients are more pleased with the overall visit because of being informed of the wait time and being given something to read while waiting, but perhaps the data also revealed that classical music was annoying and unwanted by the majority of patients. By critically analyzing the research, the practice would know to do away with the classical music but continue using the pamphlets with the estimated wait time, and by doing so create even more satisfied patients. Therefore, patient satisfaction research serves as an effective tool for evaluating and modifying change. A key consideration about patient satisfaction is that it is multi-dimensional, including many factors that can be determinants.

**Determinants of Patient Satisfaction**

**Total Care Time**

Total care time, or the total amount of time spent receiving care, has been a well researched measure of patient satisfaction with care. Logically, one would think shorter total care times would correlate with better satisfaction ratings and longer total care times would correlate with lower satisfaction ratings. The longer a patient spends in an emergency room, a doctor’s office, or in a hospital bed, the more one would expect patient satisfaction ratings to decline. One study, conducted by Topacoglu, Degerli, Karcoglu, Ozsarac, and Ozucelik (2004) analyzed total care time as a determinant of patient satisfaction. The study was conducted at a university-based emergency department. All consecutive adult patients who sought care at the emergency department and were able to complete the survey were enrolled in the study. A total
of 1,019 patients agreed to participate. Total care time was defined as the amount of time from triage until the patient was discharged. Interestingly, patients’ perceptions of total time spent in the emergency department as short and very short were not significantly related to patient satisfaction. On the other hand, patients’ perceptions of long and very long time spent were shown to be significantly related to overall satisfaction (Topacoglu et al, 2004). According to Topacoglu et al (2004), longer total care times led to less satisfied patients, but shorter total care times do not lead to more satisfied patients.

Boudreaux, Ary, Mandry, and McCabe, (2000) also looked at total length of stay as a determinant of patient satisfaction at a large municipal emergency department. Patients were telephoned ten days post-visit and satisfaction was assessed using a twenty-two item survey. A total of 437 patients agreed to participate. Actual length of stay showed a weak relation to overall satisfaction. Patients experiencing longer actual visit lengths were more dissatisfied than patients with shorter visit lengths. Although total length of stay was a significant predictor of satisfaction, it had a rather weak correlation and did not remain statistically significant in Boudreaux’s et al. final model (2000). This study suggests that total length of stay time is important to patients, but other aspects of care are more important in determining overall satisfaction. One reason for the weak correlation may be the fact that more seriously and acutely ill patients tend to have longer total length of stay times, but they are not necessarily less satisfied with the care they receive. Total length of stay time as a determinant of patient satisfaction could better be analyzed by correcting for such factors as severity and acuity of illness as well as other temporal factors. A subsequent study conducted by Boudreaux, D’Autremont, Wood, and Jones (2004) concluded that perceived total length of stay had no association with overall satisfaction.
Waiting Time

Waiting time has been a widely researched determinant of patient satisfaction. While most studies agree that waiting time is a significant determinant, its relative importance varies from study to study. In one study, conducted at the Panorama City Kaiser Permanente emergency department by Bursch, Beezy, and Shaw, (1993) waiting time as a determinant was analyzed. Satisfaction with the amount of time it took before receiving care correlated positively with overall satisfaction (Bursch, 1993). In this study, waiting time before receiving care was more important than perceptions of the length of time spent before receiving care, or total time actually spent in the emergency department. Bursch et al (1993) looked at multiple variables of patient satisfaction, and actual waiting time before receiving care was the most important determinant predicting overall satisfaction. Other studies have also identified waiting time before receiving care as the most important variable related to patient satisfaction (Booth, Harrison, Gardener, and Gray, 1992), (Little, 1991).

Boudreaux et al (2000) also found that waiting time was significantly correlated to overall satisfaction. Unlike the Bursch et al (1993) study however, waiting time was the fifth most important determinant in overall satisfaction, behind the degree to which the patients felt they were cared for as people, feelings of safety and security in the emergency department, understandability of discharge instructions, and technical skills of the nursing staff. In addition, other studies have found waiting times to be useful in predicting patient satisfaction, but, like Boudreaux et al (2000), not the most important determinant (Hall & Press, 1996), (Rhee & Bird, 1996).

In Boudreaux’s et al (2004) study, the stability of determinants of patient satisfaction over time was analyzed. Perceived wait time before bed placement and perceived wait time for
physician evaluation to be only somewhat useful in predicting overall satisfaction. This study examined variables over four separate time periods, spanning seventeen months, and found that waiting time yielded a statistically significant correlation for predicting overall satisfaction in only one cohort (Boudreaux et al., 2004). The reason for this finding is not fully understood, but the authors felt it may be attributed to changes in utilization patterns, measurement error, changes in societal trends in healthcare attitudes, emergency department modifications that impact quality of care, and the possibility that the determinants of satisfaction may change over time (Boudreaux et al., 2000).

Waiting time is often thought of as a negative variable related to patient satisfaction, meaning if there is a long wait time before receiving care, a patient is more likely to be dissatisfied. Concato & Feinstein (1997) found this to be true. The study, conducted at a primary care clinic at an academically affiliated Veterans Affairs Medical Center in New England, used open-ended interviews to determine which aspects of care patients were satisfied or dissatisfied with. Not surprisingly, waiting time was a significant aspect of satisfaction (Concato & Feinstein, 1997). Waiting time was the second most unfavorable contributor to satisfaction, behind problems with parking. Concato and Feinstein (1997) concluded that waiting time is statistically significant predictor of overall satisfaction, and that it is usually inversely related to satisfaction.

Sun et al. (2000) studied emergency department process of care measures that were significantly associated with satisfaction and willingness to return. They also found waiting time to be important. Actual or perceived waiting time was not measured. Instead, they used follow-up telephone interviews and open-ended questions to determine degree of satisfaction and willingness to return. Not being informed about potential wait time was the third most
frequently reported problem and was highly correlated with overall satisfaction. Not being informed about potential wait time was also a statistically significant predictor for a patient’s willingness to return for care (Sun et al, 2000). Sun et al (2000) took the measure of wait time a step further and found that not only is wait time important, but not being told about potential wait time was of equal or more importance. They suggest that practitioners should not only strive to decrease wait times, but also keep their patients well informed when wait times are inevitable. By doing so, practitioners can decrease the overall number of dissatisfied patients.

Two studies found that extended waiting periods before receiving emergency department care resulted in dissatisfaction (Williams, Weinman, Dale, & Newman, 1995), (Little, 1991). Yet, interestingly enough, “the overall satisfaction ratio of patients who received care within ten minutes was not different from that of patients receiving care later” (Topacoglu et al, 2004, p. 384). These results contradict the once widely accepted idea that prompt care leads to a more satisfied patient.

Thompson, Yarnold, Williams, and Adams (1996), also examined waiting time as a determinant of patient satisfaction. This study used a self administered questionnaire and enrolled 1,631 patients. Thompson et al (1996) found that perceived waiting time was significant in predicting overall satisfaction, but actual waiting time was not. Thompson et al (1996) looked at two components of actual waiting time—time from triage until being examined by a physician and time from triage until being discharged from the emergency department. “As physician waiting time increased, there was a slight decrease in patient satisfaction; however, this trend did not achieve statistical significance. The total wait time was not a statistically significant predictor of overall patient satisfaction” (Thompson et al, 1996. p. 661). The discrepancy between perceived and actual waiting time is not fully understood; however, some
inferences can be made. Actual waiting time increases depending on severity of illness and number of services provided. Severe illnesses often require more extensive care, increasing actual waiting time, but not necessarily decreasing patient satisfaction with care. Often, the most satisfied patients are ones who receive their expected amount of attention from the physician. With more extensive medical workups, actual waiting time increases, but patient satisfaction does not decrease because the patient feels they are receiving an adequate amount of attention from the physician. Krishel and Baraff (1993) also found no correlation between total actual waiting time and overall patient satisfaction. Based on these results, medical services might be better served by concentrating on meeting patients’ expectations of waiting time instead of decreasing actual waiting time.

The current literature on whether waiting time is a significant determinant of patient satisfaction is not clear. Some research found waiting time to be the most important determinant related to overall satisfaction, some research found it to be a “middle of the pack” predictor of overall satisfaction, while others found actual waiting time to have no significant association with patient satisfaction. Actual waiting time was a significant predictor of satisfaction in most studies; therefore, it is safe to assume that health care practitioners would benefit by decreasing actual waiting time. Additionally, perceived waiting time was also a significant predictor of satisfaction in most studies, so practitioners should strive to meet their patients’ expectations and by doing so create more satisfied patients. Although several studies did not find waiting time to be significantly associated with patient satisfaction, not one study found that a shorter waiting time led to more dissatisfied patients. Thus, health care services and practitioners should make decreasing actual and perceived waiting times one of their top priorities.

Explanation of Care/Plan
A thorough explanation of care or plan of care is reasonably important to most patients. Most patients are not attuned to medical terminology and the ever advancing complexities of medical technology; therefore, it is essential for practitioners to have a good expressive quality. Good expressive quality meaning the ability to communicate clearly and effectively with patients. Yarnold, Michelson, Thompson, and Adams (1998) conducted a study to identify perceptions that predict patient satisfaction with emergency department care at an academically based facility. Yarnold et al (1998) found that “overall satisfaction with care received in the emergency department is nearly perfectly predictable on the basis of the patient-rated expressive qualities of the emergency department staff” (p. 545). This finding suggests that patients want to know and understand the care they are receiving. It was important that all emergency department staff, not just physicians, had a good expressive quality. Abramowitz, Cote, & Berry (1987) found similar results. Explaining procedures and results had the second highest correlation to patient satisfaction, behind paying attention to patients’ concerns (Abramowitz, 1987). They surveyed patients post-visit from a New York based teaching hospital. Patients receiving care from services ranging from general medicine to otolaryngology were included. The results were analyzed based on three professional groups: physicians, nurses, and house staff. As in Yarnold’s et al (1998) study, the explanation of procedures and treatment was significantly correlated with patient satisfaction for all three professional groups (Abramowitz, 1987). These finding suggest that patients expect adequate explanation from every person involved in their care. Another study also found that explanation of the problem was the most desired aspect of care (Williams et al, 1995).

Other studies have also found explanation of care to be significantly related to satisfaction. Thompson et al (1996) found that patients who perceived that procedures and tests
were adequately explained were more satisfied with the emergency room encounter. Thompson et al (1996) concluded that expressive quality was one of three variables that can predict overall patient satisfaction. Similarly, Topacoglu et al (2004) found that information provided to the patient about the management plan was significantly correlated with overall satisfaction. “The more information provided to the patient, the more satisfied he or she is,” Topacoglu et al (2004) concluded (p. 386).

One study concluded that expressive quality of nurses alone was a statistically significant determinant of patient satisfaction. Bursch et al (1993) reported that satisfaction with the amount of information the nurses gave patients, about what was happening to them, was a statistically significant predictor of overall satisfaction. The study did not examine the physician or house staff expressive quality. Another study found that poor explanation of causes of the problem was the second most highly correlated problem associated with dissatisfaction (Sun et al, 2000).

The literature suggests that expressive quality of all persons involved in patient care is an important determinant of patient satisfaction. Physicians, nurses, and house staff can all benefit from taking time to explain to patients what the cause of the problem is, what has been done, what they can expect to be done, and what the probable outcome will be. The research suggests that by keeping the patient well informed, all members of the health care team improve patient satisfaction with care.

**Discharge Instructions**

Several patient satisfaction studies have examined the importance of explaining discharge instructions. Surprisingly, understandability of discharge instructions was the third most powerful predictor of patient satisfaction in Boudreaux’s et al (2000) study. Understandability of discharge instructions was not only a significant predictor of satisfaction, but also a significant
predictor of willingness of patients to return for care (Boudreaux et al, 2000). Similarly, Topacoglu et al (2004) found that patient satisfaction with explanation of discharge instructions was significantly related to overall satisfaction. Although Topacoglu et al (2004) found multiple variables to be more important than the explanation of discharge instructions, it was a statistically significant predictor of patient satisfaction. Bursch et al (1993) also found that satisfaction with discharge instructions was a predictor of patient satisfaction, although after multivariate analysis, it did not remain significant. The current research suggests that patients desire understandable discharge instructions and an explanation of those instructions. While discharge instructions did not prove to be the most important determinant of patient satisfaction in any study, it is an important piece of the health care puzzle that leads to satisfied patients.

**Individuality of Care**

Too often in medicine, patients are identified by their medical record number or medical condition instead of by their person. Not only is this practice demeaning to patients but also serves to marginalize them. The “get-them-in-and-get-them-out” philosophy appears to be more prevalent in every field of medicine due to factors such as overcrowding and the increase in malpractice suits resulting in fewer physicians in some specialties. Patients have a strong desire to be cared for as individuals. Abramowitz et al (1987) found that paying attention to patients’ individual concerns was the most important variable in predicting patient satisfaction when comparing physicians, nurses, and house staff. Yarnold et al (1998) also found the most important determinant of satisfaction was whether the patient felt he or she had been cared for as a person. Ninety-nine and one half percent of subjects who rated their satisfaction with an item about individualized treatment as good or excellent also rated their overall satisfaction as good or excellent (Yarnold et al, 1998). Additional studies also found individuality of care to be
important. Boudreaux et al (2000) found that the degree to which a patient felt emergency
department personnel cared for him or her as a person was the most powerful predictor of overall
satisfaction. Physicians paying attention to patients’ individual concerns was highly correlated
with satisfaction in Concato and Feinstein’s study (1997). As supported by the literature,
patients have a need to be treated with respect and dignity as individuals. Health care
practitioners will be well-served if they refrain from appearing apathetic when interacting with
patients, and genuinely listen to patient complaints. In summary, a practitioner’s patient
satisfaction ratings can be improved by paying attention to patients’ concerns and treating them
as individuals.

Nursing Staff

Nurses have long been accepted as critical members of the health care team. Nurses
often have the most interaction with patients and provide a large portion of services to patients.
Thus, nurses are often more attuned to patients’ wants and needs, and are able to help the health
satisfaction for four separate cohorts over a 17 month time period and found nursing care to be a
statistically significant predictor of patient satisfaction. Surprisingly, nursing care was the
strongest predictor of overall satisfaction across all four cohorts, and was the only variable that
was a statistically significant predictor for all four cohorts. Additionally, Rhee and Bird (1996)
also found nursing care to be an important determinant in predicting overall satisfaction.
Topacoglu et al (2004) found that satisfaction with nurse behavior was significantly linked to
overall satisfaction with emergency department care. Of 167 patients who were satisfied with
nurse behavior, 161 were satisfied overall with the emergency department care (Topacoglu et al,
In this study, satisfaction with nursing behavior almost perfectly predicted overall patient satisfaction.

Additional studies have examined different aspects of nursing care. For example, the perceived technical skills of the nursing staff was the fourth most powerful predictor of overall satisfaction in Boudreaux’s et al (2000) study. In the same study, satisfaction with care and concern of the nursing staff were statistically significant predictors of patients’ willingness to recommend the emergency department to others. Surprisingly, the care and concern of the nursing staff were statistically significant predictors of the patients’ likelihood to recommend the emergency department, while the waiting time to see the physician was not. Bursch et al (1993) also reported that patients’ perceptions that the nurses were caring were statistically significant in predicting patient satisfaction. These findings reinforce the theme that patients view their interactions with the health care staff as being a very critical part of their medical care.

Abramowitz et al (1987) took the study of the nursing staff as a determinant of patient satisfaction a step further. They included questions related to the nurses’ aides in their patient satisfaction questionnaire and found there was a high correlation with patient satisfaction and the items “nurse’s aides respond quickly” and “nurse’s aides are helpful”. This finding implies that patients perceive all aspects of the nursing staff, even nurse’s aides, as a critical component of patient satisfaction.

While most studies agree that nurses and nursing staff are important predictors of patient satisfaction, others have contended that it is not that important. Topacoglu et al (2004) reported that although overall satisfaction was affected by nurse behavior and experience, overall satisfaction data derived from patients who did not receive nursing care were not different from these who did. If patients who did not receive nursing care were as satisfied as patients who did,
the question is raised about how important nursing care actually is. Furthermore, Raper (1996) found that patients’ perceptions of the nursing staff’s technical competence had little to do with likelihood to recommend the emergency department to others. While the literature is contradictory in terms of nurses’ importance in determining patient satisfaction, the majority of studies suggest that they are important to patients. Nurses are an important part of the healthcare team and their services appear to be an important predictor of patient satisfaction.

**Physician Characteristics**

Physicians are important members of the health care team. As a result, physician characteristics are often analyzed when investigating predictors of patient satisfaction. Topacoglu et al (2004) found a significant relationship between physician behavior and overall patient satisfaction. The level of physician experience, as perceived by the patient, was the most powerful predictor of overall satisfaction. Benjamin et al (2000) also found that physician geniality and diligence were statistically significant in predicting overall patient satisfaction. Bursch and colleagues (1993) also found physician characteristics to be important to patients. Patients’ perceptions of physicians’ competence were statistically significant in predicting overall satisfaction, but surprisingly, not as important as other variables in the study, including how caring the nurses were and the organization of the emergency department staff (Bursch et al, 1993). While certain patient satisfaction studies did find physician characteristics to be significant, it was surprising how many studies did not even mention physician characteristics. Future research should include physician characteristics when analyzing patient satisfaction. Of the studies that did examine physician characteristics, physician characteristics seemed to be important to patients and were statistically significant predictors of overall satisfaction.
Technical Quality of Care

Another variable in predicting patient satisfaction is their perceptions of the technical quality of care. Rhee and Bird (1996) used a post-visit telephone questionnaire to assess determinants of patient satisfaction with emergency department care. The study was conducted over a thirteen month period at a university hospital and included 618 patients. Patients’ perceptions of technical quality of care proved to be the most important variable associated with patient satisfaction, and was more strongly associated with satisfaction than other variables such as perceived timeliness of care and bedside manner (Rhee & Bird, 1996). Boudreaux et al (2004) found overall physician care to be a strong predictor of patient satisfaction in only one of three cohorts they studied. Why physician care was important in one cohort and not the other three is unknown.

Of the many studies reviewed, technical quality of care was only mentioned in the literature in two. Because Rhee and Bird (1996) found technical quality of care to be the most powerful predictor of satisfaction, it seems logical that technical quality of care should be included in future patient satisfaction research.

Patient Demographics as Determinants of Patient Satisfaction

Patient demographics have proven to be important in determining patient satisfaction. People of differing age, gender, race, and social status often have different expectations for care with varying levels of importance. For example, the determinants for patient satisfaction may be very different for an elderly African-American female than a young Asian-American male. Therefore, it is essential for health care providers to understand how patient demographics may affect overall patient satisfaction.
Age

Age is one patient demographic that often appears among determinants in research on patient satisfaction. Young, Meterko, and Desai (2000) found that advancing age was significantly associated with high satisfaction ratings. The researchers used three different models in their research: an inpatient model; a surgery model; and, an outpatient model. Increasing age was associated with higher patient satisfaction scores in all three models. Age accounted for between nine and fifteen percent of the sample variance in satisfaction scores (Young et al, 2000). Sixma, Preeuwenberg, and Van Der Pasch (1998) also found that advancing age was significantly associated with higher satisfaction ratings of family medicine practitioners. Hansagi, Carlsson, and Brismar (1992) noted that age was an important determinant of patient satisfaction, suggested by a remarkable rate of dissatisfaction in younger age groups. Similarly, Sun et al (2000) found that younger age was a patient characteristic that significantly predicted less satisfaction, and increasing age was associated with higher levels of patient satisfaction. Bursch and colleagues (1993) reported that a health plan member’s age appeared to be a useful predictor for overall satisfaction with the emergency department, but it did not remain statistically significant after multiple regression was performed. These studies suggest that different age groups have differing standards for satisfaction. In the literature, there was no mention of reasons for the age-related difference in satisfaction, but one can speculate that severity of health problems, outcomes, and different expectations may play a role.

Other studies have found age to be of less importance. Boudreaux et al (2004) found that age was a weak predictor of overall satisfaction. “Age, although statistically significant in one cohort, really did not differ markedly in the strength of its association with overall satisfaction” (Boudreaux et al, 2004, p. 56). In their earlier study, Boudreaux et al (2000) reported that age
was not a statistically significant predictor for overall satisfaction, but was significant in patients’ likelihood to recommend emergency department care to others. Older patients were more likely to recommend emergency department care to others than younger patients. Topacoglu et al (2004) found no significant association between age group and overall patient satisfaction. In this study, there was no difference in satisfaction ratings between groups aged 18 to 64 and 65-and older. Other authors have also reported no significant relationship between age and overall satisfaction (McKinley et al, 2002), (Thompson et al, 1996).

In summary, the research appears contradictory with respect to age as a determinant of patient satisfaction. Several studies found age to be very important while others found it to have no association with overall satisfaction. Age does appear to be significant enough for health care team members to be aware of its importance. Older patients tend to be more satisfied and more willing to recommend care to others, whereas younger patients tend to be less satisfied and less likely to recommend care to others. Practitioners should be aware of the younger population’s higher expectations, and by doing so, tailor their care to better satisfy the patient.

**Gender**

Gender has been a demographic variable analyzed often in patient satisfaction research. While it is true that men and women sometimes require gender specific care for gender specific illnesses, gender does not appear to have any association with overall patient satisfaction. Boudreaux and colleagues (2000) that of 126 male respondents, 104 were satisfied with care received; thus, 82.5 percent of male patients were satisfied. Similarly, of 310 female respondents, 251, or 81 percent, were satisfied with the care they received. Although a slightly higher percentage of male patients reported satisfaction, the differences were not statistically significant. Young et al (2000) also found gender to be unrelated to satisfaction even though
their survey respondents were overwhelmingly male. Several other authors have also suggested that gender is unrelated to overall patient satisfaction (Boudreaux et al, 2004. McKinley et al, 2002. Topacoglu et al, 2004). One interesting study conducted by Thompson et al (1996) found that gender had a statistically marginal effect on a patient’s likelihood to recommend an emergency department to others. Male patients were more likely to recommend the emergency department to others than female patients; however, there was gender was not a statistically significance predictor of overall satisfaction.

The literature overwhelmingly suggests that gender is not a significant predictor for patient satisfaction. Although patients often require gender specific care, male and female patients report nearly equal satisfaction levels. These results suggest that practitioners are doing a good job of caring for gender specific issues.

Race and Ethnicity

Race is yet another patient demographic characteristic frequently analyzed in patient satisfaction research.

“African-Americans and other ethnic minority patients in race-discordant relationships with their physicians report less involvement in medical decisions, less partnership with physicians, lower level of trust in physicians, and lower levels of satisfaction with care” (Cooper et al, 2003, p. 908).

With so many race-discordant patient-physician relationships in medicine today, it makes sense that race would be a statistically significant determinant of patient satisfaction. Sun et al (2000) reported that African-American patients presented lower ratings of overall care and found that race was significantly associated with overall satisfaction. Young et al (2000) also found race to have a statistically significant effect on patient satisfaction scores. Young et al’s (2000) study,
conducted at a Veteran’s Affairs hospital, found non-white patients reported lower satisfaction than did white patients. Another study, conducted by Cooper et al (2003), investigated the differences between race-concordant and race-discordant patient-physician relationships. Interestingly, they found race-concordant visits were longer by about 2.2 minutes and were characterized by a more positive patient affect. Also, patients in race-concordant visits rated their physician as more participatory and had higher satisfaction with care ratings (Cooper et al, 2003).

There are other studies that contradict the notion that race is an important predictor of overall satisfaction. Boudreaux et al (2000) found that 79.6 % of black patients were satisfied with care, compared to 85.8 % of patients in the “other” race category. Although a higher percentage of “other” race patients were satisfied with care, race did not prove to be a statistically significant predictor for overall satisfaction. Other researchers, such as McKinley et al (2002) and Thompson et al (1996), found no significant association of race and patient satisfaction. While the research does not allow for a solid conclusion to be made for race as a significant determinant of patient satisfaction, it is important that health care practitioners are attuned to this aspect of their patients’ demographic. Different races and ethnicities have differing expectations and values in terms of health care, and practitioners can better satisfy their diverse patient population by being culturally competent and sensitive to differences in needs and expectations.

**Other Determinants**

Several other determinants were cited in the literature, but not to a great enough degree to draw a conclusion about their overall importance. Young et al (2000) found that rural hospitals had higher inpatient satisfaction ratings than did urban hospitals; however, there was no
statistically significant difference between rural and urban outpatient satisfaction scores. Young et al (2000) also noted that better health status was significantly associated with higher patient satisfaction scores. Similarly, non-acute triage status was significantly related to satisfaction according to Sun et al (2000). Boudreaux et al (2000) concluded that patients with more urgent medical problems tended to be more satisfied than patients with less urgent medical problems. This relationship was weak and did not remain significant after a multivariate analysis.

Income was another determinant mentioned in the literature. Krishel and Baraff (1993) found that high-income patients tended to have higher levels of satisfaction, but Young et al (2000) reported that high income was significantly associated with lower satisfaction scores. The second most powerful predictor of satisfaction in the Boudreaux et al (2000) study was feeling safe and secure in the emergency department. Unfortunately, no other studies examined safety or security as a determinant of satisfaction. Housekeeping or cleanliness of the facility was also another determinant found to be significant in predicting patient satisfaction (Abramowitx et al, 1987).

While it appears that there were different variables that contributed to patient satisfaction, only a limited number were statistically significant as determinants. Given the differences in composition of the samples, geographic location of the studies, the number and type of staff involved and the facility where the patients received care, it was not surprising to find the differences in the variables that were felt to contribute to patient satisfaction. Clearly, patient satisfaction is multi-dimensional and related to a number of variables and possibly their interactive or combined effects. Therefore future studies of patient satisfaction should strive to include the variables discussed and develop a model that is inclusive and allows practitioners to more fully understand how various factors affect their patients’ satisfaction with care.
Patient Satisfaction with Care Provided by PAs

The PA profession was created to help improve health care. One of the most important factors that influenced the initiation of the PA profession was a need for increased access to care. At the time of the development of the PA profession there was an increasing trend for physicians to specialize. In addition, there was also a decrease in the number of physicians practicing in rural communities resulting medically underserved areas. Many health care administrators hoped that the PA profession would help improve access to care while maintaining patient satisfaction. Several investigations have examined patient satisfaction with PA care.

Nelson, Jacobs, and Johnson (1974) administered patient satisfaction questionnaires to patients who had been cared for by PAs at 18 different primary care clinics in upper New England. The surveys were completed post-visit and included 449 patients. More than 75% of the patients perceived that both length of time to get an appointment and length of wait time in the office had decreased since the addition of a PAs to the practice (Nelson et al, 1974). The majority of patients also felt that the medical staff were able to spend more time with them since the addition of a PA. Another study surveyed 308 patients who had been examined by PAs at seven different family practice clinics and two satellite clinics. Sixty percent of patients reported that the time it took to get an appointment had decreased since the addition of PAs. Furthermore, nearly 60% of patients reported that they felt they spent less time in the waiting room after a PA was added to the staff (Oliver, et al, 1986).

Sekhon (1998) investigated the actual number of patients cared for at a busy primary care clinic before and after the addition of two PAs. Records for a sixteen month period prior to hiring the PAs were compared to the records from the sixteen month time period with PAs. The total number of patients that were seen at the clinic increased by 997 after the addition of two
PAs (Sekhon, 1998). Sekhon’s work demonstrated that the addition of two PAs significantly increased access to care.

Access to care improvements were also described by McCraig, et al. (1998). Data were collected from the 1993 and 1994 National Hospital Ambulatory Medical Care Surveys. The surveys indicated that either PAs or nurse practitioners (NPs) were involved in eight percent of all hospital outpatient department visits during 1993 and 1994 (McCraig et al, 1998). During the period of the study there was an average of sixty-four million outpatient visits annually. These data indicated that PAs or NPs were involved in hospital outpatient care of more than ten million patients over a two year period. Considering there are many more PAs currently practicing in hospital outpatient departments than there were in 1993 and 1994, it seems reasonable to infer that PA’s and NP’s are providing even more care. It appears that the PA profession is succeeding in improving patient access to care while maintaining or improving patient satisfaction.

Cost Effectiveness of PA Delivered Care

Besides improving access to care, the PA profession was established with the hope that it would help physicians provide more cost-effective care. For the most part, most major insurance companies, Medicaid and Medicare reimburse practice groups and institutions for PA services at approximately 85% of physician fees (American Academy of Physician Assistants, 2005). The rate of reimbursement, coupled with the fact that the average annual salary of a certified PA is roughly 40% of the average salary of a board certified physician, suggests that PAs do help provide cost-effective care (Powe & Hughes, 1999). Sekhon (1998) reported that for every dollar of PA salary, the PA was generating $4.45 for the practice. While this study only looked at two PAs in a primary care clinic, and even though the scope of the study is limited, the results
are noteworthy. The two PAs at this primary care clinic provided the practice a 345% return on investment. This type of financial productivity is remarkable. Ackermann and Kemle (1998) also found PAs to provide significant financial productivity. By adding PAs into an in-patient nursing home,

“annual hospital admissions were decreased by and the total number of hospital days per one thousand patient years by nearly, saving the nursing home more than ninety-six thousand dollars” (Ackermann and Kemle, 1998, p. 612).

An additional study examined the use of physician assistants in a large community hospital’s trauma center. The study was conducted over a one year period. Miller et al, (1998) concluded that PAs were a cost-effective addition to the staff and noted that the average length of stay for all admissions had decreased by 13% and had decreased 33% for trauma intensive care unit patients, thereby greatly decreasing health care costs.

The Graduate Education National Advisory Committee found that PAs could substitute for physicians at a ratio of 0.5:1 to 0.75:1 (1980). With the average annual salary of PAs being only 40% of that of board certified physicians, even the low estimate of the PA to physician productivity ratio suggests that PAs are cost-effective. Research to date suggests that PAs are cost-effective health care providers. PAs are generally able to generate far more funds for their practice than their annual salaries (Powe and Hughes, 1999). The literature suggests that medical groups can benefit financially by adding PAs to their practice. It has been reported that PAs save their attending physicians an average of four to five hours per day, allowing the physician to be more productive and further adding to their financial productivity (Miller et al, 1998). The literature indicates that PAs have proven to be cost-effective health care providers.

**Patient Satisfaction with Personal Characteristics**
Personal characteristics of a practitioner have been shown to be significantly associated with overall patient satisfaction. The PA profession has long since prided itself on having patient-friendly personal characteristics. Characteristics such as friendliness, politeness, and being a good listener have been the cornerstone of the PA profession since its establishment. Oliver et al (1986) found that patients reported greatest satisfaction with PAs’ interpersonal skills. The highest rated items were politeness and courteousness, with 81.5% of patients answering “completely satisfied” to this question. Also under the interpersonal skills category, 69% of patients answered “completely satisfied” when asked about PAs affording them the opportunity to ask questions (Oliver et al, 1986). Similarly, Nelson et al (1974) reported patients were very satisfied with PAs’ interpersonal skills. Four hundred and forty-nine patients from eighteen different primary care clinics were analyzed. Eighty-six percent of patients reported that the PA was “very professional” in his or her manner. Even more impressive, 100% of patients reported the PA as respectful and 96% as courteous (Nelson et al, 1974). These results indicate that the patients in this study were very pleased with PA personal characteristics. While it is true that there is not a great deal of literature on patients’ satisfaction with PAs’ personal characteristics, the available literature is overwhelmingly positive.

**Patient Satisfaction with PA Quality of Care**

Thus far, the literature has shown that patients are highly satisfied with PA personal characteristics, and patients also feel that PAs improve access to care. Other studies suggest PAs are cost-effective health care practitioners. These positive attributes of the PA profession could be meaningless if patients are not satisfied with the quality of care provided by PAs. Being cost-effective and improving access is of little importance if the quality of care provided by PAs is lacking. Sekhon (1998) reported that 90% of patients surveyed reported quality of care rendered
by a PA as “outstanding” and the remaining 10% as “above average.” Miller et al (1998) conducted a study at a large community hospital’s level two trauma center. Compared to the previous year, after adding PAs there was a “decrease in transfer times from the emergency department to the operating room of 43%, to the trauma ICU of 51%, and to the floor of 20%. In addition, the average length of stay decreased 13% for all admissions and decreased 33% for trauma ICU patients” (Miller, 1998, p. 374).

Although the decreases could have been the result of multiple variables such as policy changes or staff turnover, these factors were not mentioned in the study. The results suggest that the PAs at this trauma center were providing a high quality of care.

Oliver et al (1986) also found PA quality of care to be high as perceived by patients. 67.7% of patients answered “completely satisfied” when asked about the competency of the PA that examined them, and nearly 30% answered “satisfied.” Similarly, when asked about completeness of the exam provided by the PA, 59.1% answered “completely satisfied” and 38.9% “satisfied” (Oliver et al, 1986). This study supports the idea that PAs provide high quality care. Furthermore, McCraig and Hooker (1998) found that PAs/NPs ordered diagnostic or screening services more frequently than physicians in hospital outpatient department visits. This fact suggests that PAs/NPs are focused on preventive health care which adds to their high overall quality of care.

Nelson et al (1974) also assessed patients’ perceptions of PA quality of care with 91% and 87% of patients reported being “very satisfied” with the history and physical exam conducted by PAs respectively. In addition, 89% of patients rated PAs as “very competent” and 71% of patients thought that the overall quality of medical care had improved since adding PAs.
to the practice (Nelson et al, 1974). Patients in this study seem to agree with the rest of the literature that PAs provide a high quality of care as perceived by patients.

Patient Acceptance of PAs

While being accepted by patients is critical for all health care practitioners, having a high level of patient acceptance may be even more critical for PAs. The PA profession is still relatively new in terms of medical professions, so PAs must constantly strive to earn respect and acceptance from their patients. With PAs being interdependent providers, it is also very important that physicians perceive PAs as being well accepted by patients. If PA services are not well accepted, physicians would have no reason to employ them. The PA patient satisfaction literature suggests that PAs are generally well accepted by patients. Sekhon (1998) found that only 1.17% of patients preferred to see the physician instead of a PA. This study was only conducted over a two week period in a single primary care clinic, but the high level of acceptance is still noteworthy. Sturmann, Ehrenberg, and Salzberg (1990) reported that “95.7% of 4,822 PAs surveyed rated acceptance by patients as either good or excellent” (p. 305). While these figures are self-reported by PAs, the overwhelming level of acceptance is still remarkable. In an additional study, Couselman, Graffeo, and Hill (2000) found that 88% of patients indicated that they would not be willing to wait longer in the emergency department to be seen by a physician rather than by a PA. Interestingly, four of the thirteen patients who were willing to wait longer were under the age of eighteen and their survey had been completed by their legal guardian. PAs appear to be well accepted by patients

Acceptance can also be evaluated by examining patients’ perceptions of what they feel a PA’s scope of practice should include. Nelson et al (1974) found that over 90% of patients felt that PAs were capable of performing routine technical procedures. Furthermore, 69% of patients
reported that PAs “should be allowed to take of you if the doctor is out of town” (Nelson, 1974, p. 66). Patients in this study were well accepting of PAs as health care providers. Similarly, Oliver et al (1986) found that patients were comfortable or very comfortable with PAs performing all but three procedures in their survey. As expected, the procedures that patients were not comfortable with PAs performing were more complex.

One study did show slightly lower levels of acceptance of PAs by patients. Smith (1981) reported that

“only 26% of patients felt that physicians’ assistants could always handle even simple problems without direct physician supervision” (p. 202).

Furthermore, 9% of patients actually reported going elsewhere for care and 29% reported occasionally feeling uncomfortable with PA visits (Smith, 1981).

The majority of the literature indicates that patients are well accepting of PAs. One major limitation in this area is that much of the literature is dated. With one study showing questionable acceptance of PAs by patients, (Smith, 1981) and the majority of the other studies being over fifteen years old, this issue requires further research.

**Overall Satisfaction with PAs**

The literature indicates that patients are generally satisfied with PA services. Several studies specifically analyzed overall satisfaction with PAs. Smith (1981) found that 92% of patients surveyed were usually or always satisfied with PA services. Nelson et al (1974) reported 90 to 95% of patients surveyed after receiving care from a PA reported acceptable to high levels of satisfaction. In addition, 83% of patients answered they “definitely would” want a PA to participate in their care again. Counselman et al. (2000) found that “patients, overall, were very satisfied with the care received in the emergency department fast track by a PA, with an
overall satisfaction score of 93” (p.664). Sekhon’s (1998) study also found very favorable overall satisfaction. When asked to rate their overall visit with a PA, 85% of patients reported an “outstanding” visit and the remaining 15% reported an “above average” visit (Sekhon, 1998).

PAs appear to be providing excellent health care. An overwhelming majority of the literature reviewed concludes that patients are not only satisfied with many individual aspects of PA care, but they are generally very satisfied with the overall care provided by PAs. Thus far, in their professions short history, PAs appear to be doing an excellent job of satisfying patients.

Unfavorable Views of PAs

Despite all of the positive literature reported thus far, there is research that reports PAs in a less favorable light. Hall (1996) reported, after reviewing charts of PAs in an emergency department, that there were frequently discrepancies between the physical examination and the patient’s record. Additionally, he found that “treatment plans were frequently disagreeable and overtly inappropriate” (Hall, 1996, p. 338). Hall went as far as to say that PAs were trauma doctor “imposters.” While these views are only based on one physician’s experiences, they are strongly negative and must be considered. Smith (1981) also found patients to be less favorable of PA services. Only 26% of patients felt that PAs were capable of handling simple problems without direct physician supervision (Smith, 1981). Furthermore, Smith (1981) found that only 26% of patients felt that PAs allowed physicians to do a better job and as mentioned previously, 9% of patients actually went elsewhere for care because of PAs. Nearly 30% of patients reported that they were occasionally uncomfortable with the PA’s services (Smith, 1981). These studies, though in the minority, show that not all patients are satisfied with health care provided by PAs; however, these results must be interpreted with care. Of all the patient satisfaction literature reviewed, only two found PAs to be unfavorable, and one was based solely on a single
physician’s experiences. While it would be impressive to conclude that all patients in every setting are satisfied with PAs, it is unrealistic to think that all patients can be satisfied.

**Comparing PAs and Other Health Care Professionals**

As previously stated, the PA profession is relatively young. As a consequence, not many comparative studies exist on PAs and other health care professionals. Of the research that has been done, many positive aspects about PAs have emerged. In a study that analyzed “primary care physician office-encounter data from the 1995-1999 National Ambulatory Medical Care Surveys,” it was found that “PAs and NPs are providing primary care in a way that is similar to physician care” (Hooker and McCraig, 2001, p. 32). There were only a few major differences found between provider groups. Physicians tended to care for older, more ill patients than PAs; however, PAs cared for older, more ill patients than NPs (Hooker and McCraig, 2001). The average office visit lasted four minutes longer when a PA or NP was involved in the care. Also, NPs ordered or provided counseling/education services in a high proportion of visits than did PAs or physicians; however, no significant difference existed between the number of diagnostic or screening services or number of medications ordered or provided by provider group (Hooker and McCraig, 2001). It was concluded in this study that PA/NPs provide care very similar to physicians in the primary care setting.

Another study examined the differences between practitioners as rated by patients in the primary care setting. Interestingly, patients were more satisfied with practitioner interaction by PAs or NPs than by physicians (Roblin, Becker, Adams, Howard, & Roberts, 2004). This trend was noted in both adult medicine and pediatric practices. The findings reinforce the notion that patients are generally very satisfied with PA personal characteristics. Roblin et al (2004) also found that “patients were more likely to be satisfied with both care access and their entire visit
experience on PA/NP visits than MD visits; however, these differences were not significant” (p. 584). Roblin and colleagues concluded that PA/NPs were providing primary care similar to physicians.

Hooker’s (2004) study compared PAs and physicians in an occupational medicine setting. Unlike Hooker and McCraig’s (2001) research, there was no significant difference between practitioners in average age of patient or average severity of health problem (Hooker, 2004). The average age of patients cared for by PA was 35.3 compared to an average age of 35.5 for physicians. Similarly, average severity score of health problems treated were 1.92 for PAs and 1.93 for physicians (Hooker, 2004). A very interesting finding reported by Hooker (2004) was that patients were more likely to keep return appointments with PAs than with physicians. Patients’ compliance with care is often thought of as a reflection of overall satisfaction with care. If this is true, patients appeared to be more satisfied with care provided by PAs.

Another study, which compared patient care activities and outcomes of PAs, NPs, and resident physicians in the acute care setting, found that although each provider group, practiced differently, the patients had very similar outcomes (Rudy et al., 1998). The differences noted were that residents worked longer hours per day, cared for more patients on rounds, and spent more time writing orders, consulting, doing procedures, interpreting lab studies and tests, and speaking with patients (Rudy et al, 1998). PAs were more likely to discuss patients with the nursing staff, interact with the patient’s family members, perform hands-on assessments, participate in research and administrative duties, and, spend more time reviewing chart notes (Rudy et al, 1998). Despite these statistically significant differences in care activities, “outcomes did not differ markedly for patients treated by either group” (Rudy et al, 1998, p. 267). The differences in care activities may be attributed to different expectations of these practitioners.
Resident physicians are still in an educational program which often requires that certain set standards be met. Attending physicians realize that residents will soon be independent practitioners solely responsible for their patients. PAs are interdependent health care professionals and share health care responsibilities for patients with physicians. With attending physicians often assigning patients to resident physicians and PAs, it comes as no surprise that attending physicians would want residents to have more patient care experience. Whatever the reason for the differences in care activities, the important fact is that patient outcomes were similar for both resident physicians and PAs.

Hooker, Potts, and Ray (1997) conducted a study to determine if there were differences in patient satisfaction scores between different types of providers. Post-visit questionnaires were mailed to patients of a large health maintenance organization who had visited any of five medical specialties during a one and a half year period. Patients reported a high level of satisfaction regardless of the practitioner delivering the care (Hooker et al., 1997). Furthermore, satisfaction with a practitioner included items such as courtesy, understanding of problems, ability to explain, listening, time spent with the patient, and confidence in provider. “No statistically significant differences in scores were seen between providers by type” (Hooker et al., 1997). Another study conducted by Oswanski, Sharma, and Shekhar (2004) analyzed data to determine if there were any significant differences at a level one trauma center after replacing general surgery residents with PAs. Interestingly, the only statistically significant difference found was that length of stay for trauma patients was shortened by approximately one day under the care of the PAs (Oswanski et al., 2004). Mortality rates and transfer times were not affected by substituting PAs for surgical residents. It was concluded that PAs provided comparable care to residents in this study.
In reviewing the literature, six studies were found that compared PAs with other health care practitioners. In every study, it was concluded that PAs provide similar care to the other professionals. Three of the six studies commented on overall satisfaction. There was no statistically significant difference in satisfaction scores in two studies, and in one study, PA satisfaction ratings were actually higher than those for physicians. Anytime an outcome measure was analyzed in the literature, the findings were either the same or improved by PA services. While it is true that there are differences in care activities between PAs and other health care providers, these differences appear to be of little significance if patient outcomes and patient satisfaction ratings remain similar. The literature suggests that PAs are considered highly competent, highly respected, and highly accepted health care professionals who are capable of practicing in any field of medicine.

**Recommendations**

In reviewing the determinants of patient satisfaction literature, it is evident that many different variables determine patient satisfaction. To say that one determinant is of utmost importance would be false and misleading to both patients and health care practitioners. Some variables did predict overall satisfaction more frequently than others. Major determinants that should be focused on include: 1. actual and perceived waiting time; 2. explanation of care/plan and discharge instructions; 3. individuality of care; 4. practitioner personal characteristics and practice style; 5. technical quality of care; 6. nursing and medical staff; 7. patients’ age; and, race and ethnicity. These determinants seem to be the major variables in predicting overall satisfaction. Other determinants such as gender and total care time seem to be of less importance.
There were variables mentioned in the literature as significant predictors of satisfaction, but not mentioned frequently enough for a conclusion to be drawn on their overall importance. These determinants included safety and security, acute versus non acute health problems, overall health, income, hospital size, and urban versus rural clinics. In conclusion, patient satisfaction may not be a phenomenon that can be defied by a set number of variables; many factors play a role in satisfying or dissatisfying patients. Health care practitioners should be aware of the important determinants of patient satisfaction, but their main focus should be treating patients to the best of their ability in every possible way and satisfaction will fall into place.

The literature suggests that PAs are; cost-effective, accepted and respected by patients, competent, personable, and providing care at a level that is satisfying to patients. Furthermore, PA services compare very well with other health care professions, mainly nurse practitioners, physicians, and resident physicians. Thus far, PAs have set a high standard for their professional practice and it is up to future PAs to build upon this excellent reputation as professional health care providers.
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