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**THE RELATIONSHIP BETWEEN INTERDISCIPLINARY PRACTICE
AND THE JOB SATISFACTION OF NURSE PRACTITIONERS
IN PENNSYLVANIA**

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Nursing

by

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ABSTRACT

The government, educational institutions and professional organizations have been advocating for a move to a more interdisciplinary practice model for health care. These changes are thought to be one means of addressing the challenges faced by the current United States health care system. Understanding what contributes to and what detracts from job satisfaction in the work environment will help to guide the stakeholders involved in these changes. Keeping nurse practitioners, who are uniquely positioned to assist in this transition satisfied, will be integral to keeping them in the workforce.

A descriptive correlational design was used to explore the relationship between job satisfaction and interdisciplinary practice in nurse practitioners in Pennsylvania. The Misener Nurse Practitioner Job Satisfaction Scale and the Bronstein Index of Interdisciplinary Collaboration were the survey tools to measure the major study variables. The conceptual model that guided the study was developed by Koelble who modified Herzberg's Dual-Factor Theory of Job Satisfaction. The survey was administered over the Internet and potential respondents were recruited by mailed postcard, which went to every sixth nurse practitioner on a mailing list purchased from the state board and through the listserv maintained by the Pennsylvania Coalition of Nurse Practitioners.

There were 244 nurse practitioners who logged on to participate however; the inclusion criteria limited the sample to 190. Most were female, the majority had master's degrees, and 16% had 20 or more years of experience as a nurse practitioner.

The key findings of the study were that there is a strong positive relationship between nurse practitioners' job satisfaction and the degree of interdisciplinary practice they reported. Overall, nurse practitioners in Pennsylvania were minimally dissatisfied to minimally satisfied

with their positions. The areas of dissatisfaction have remained consistent over the last decade.

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Chapter 1

INTRODUCTION

The purpose of this chapter is to introduce this study, which explored the relationship between interdisciplinary health care practice and the job satisfaction of nurse practitioners in Pennsylvania. The complexity of the health care system in the United States and the environment in which health care is often delivered have been the impetus for professional organizations, accrediting bodies, and the government to advocate changing the way health care has traditionally been delivered, that is, to move to an interdisciplinary care practice model. It is believed that such a shift could significantly improve health care delivery. Nurse practitioners could experience greater job satisfaction in an interdisciplinary practice environment partly because they could provide better quality health care with a greater availability of resources and support. This chapter includes the statement of the problem, the purpose of the study, the conceptual framework, the research questions and hypothesis, definition of terms, assumptions, limitations, the significance of the study, and the significance of the study to nurse practitioners.

Overview

The U.S. health care delivery system is complex, the number of professionals involved in providing care to patients has increased, and communication between these professionals is often poor. All of these factors contribute to a decreasing quality of care, escalating health care costs, and increased medical error rates (Kohn, Corrigan, & Donaldson, 2000). For example, the Institute of Medicine (IOM) report *To Err Is Human: Building a Safer Health System* (Committee on Quality of Health Care in America, 2000)

focused on the rate and consequences of medical errors, both in terms of how they affect the patients and health care costs, and how they affect quality of care. The IOM report asserted that the health care system is complex and cumbersome, and that opportunities for serious medical errors abound. This problem cannot be solved by one group of health care professionals; rather, it will take the efforts of all involved to make the changes necessary to ensure the safety of patients as they present for care. Delivery of less than optimal care also contributes to a decrease in the satisfaction of health care professionals who have been educated to provide the highest quality of care possible (Kohn et al.).

The magnitude of the medical error rate in hospitals is based on the findings of two seminal studies, one in New York in 1991 and another in Colorado and Utah in 2000. These studies found that adverse events occurred in 2.9% in 1991 and 3.7% of hospital admissions in 2000. Of these events, 6.6% and 13.7% resulted in death, over half of which could have been prevented (Thomas, et al., 2000). Little progress has been made in this area and costs are now estimated to be 200 billion dollars annually. Errors resulted in 238,337, potentially preventable deaths between 2004 and 2006 (HealthGrades, 2009). According to Mathews and Pronovost (2008) hospitalized adults are receiving recommended care only 53% of the time.

These occurrences have resulted in increased frustration of health care providers who are striving to offer safe, quality care; a health care system which patients find more and more difficult to navigate; and the need for health care policy makers to address increasing costs in the face of continued poor quality and increasing medical errors (IOM, 2001). In the ten years since the release of the IOM report, little progress has been made in patient safety. At the same time, no other period in the history of health care has seen

such rapid growth in knowledge and technology as over the last 50 years. However, the health care system as it is organized and operates today falls short of translating this knowledge and technology into improved clinical practice, and applying it safely and appropriately (Bahensky, Moreau, Frieden, & Ward, 2008; Kohn et al., 2000). A health care system that cannot consistently deliver today's science and technology will be less prepared to respond to the extraordinary scientific advances that will surely emerge during the first half of the twenty-first century (IOM, 2001). This increasing challenge also supports the need for cooperation and communication among and between all members of the health care team. A professionally satisfied staff—nurse practitioners in particular—will more positively embrace this changing environment and health care delivery method. Interdisciplinary care can decrease medical errors and increase health care practitioners' satisfaction (McKeon, Oswaks & Cunningham, 2006).

The IOM is a proponent of interdisciplinary health care delivery as suggested in its vision statement in *Health Professions Education: A Bridge to Quality*: “All health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidenced-based practice, quality improvement approaches, and informatics” (Greiner & Knebel, 2003). The incorporation of “teamwork” or interdisciplinary care into the delivery of health care is one facet of a multifaceted approach for decreasing error rates and costs, as well as for improving the quality of health care in general. With the increasing complexity of patients' needs and the increased chronicity of disease, the need to rely on interdisciplinary teams to provide high quality health care will grow.

Good communication among health care providers, which is fundamental to

interdisciplinary care, is the foundation of job satisfaction, decreased errors, and increased quality of care. In a study titled *Health Care at the Crossroads: Strategies for Addressing the Evolving Nursing Crisis*, the Joint Commission on Accreditation of Health Care Organizations (JCAHCO, 2002), reported that 24% of sentinel events could be attributed to nurse staffing, communication gaps, a lack of teamwork, or other human factors. This demonstrates the significance of communication among health care providers in the practice arena.

Statement of the Problem

In the health care system, medication errors alone account for 98,000 deaths annually (Kohn et al., 2000). In addition, a 2009 report released by HealthGrades, a private health care reporting company, found that between 2005 and 2007 there were 97,755 hospital deaths among patients who experienced an adverse medication event. Of these deaths, 92,882 were directly attributable to the patient safety issue (HealthGrades, 2009). A study by Lewis, Dornan, Taylor Tully, Wass, and Ashcroft (2009) found that 52 medication errors occurred for every 100 hospital admissions. If generalized to the population of hospitalized patients as a whole, the increase in hospital costs from adverse drug events alone would be 6.9 billion dollars annually (Lewis et al.). Considering that much of health care is delivered in alternative settings, including outpatient surgical centers, ambulatory clinics and physician's offices, this estimate is modest. However, medication errors affect the health care system in ways other than those directly measured by dollars. Patients experience a loss of trust in the system, and health care providers suffer decreased satisfaction, loss of morale, and frustration with being unable to provide the high quality of care they have been educated to give (Kohn et al.).

In particular, nurse practitioners have been educated to provide comprehensive care. As important members of the health care delivery team, this group is adversely affected when they deliver care that they feel is less than optimal. When dissatisfied with their care, nurse practitioners lose job satisfaction, experience a decrease in morale, and are more likely to leave their positions (Kohn et al., 2000). The retention of qualified nursing staff has been linked with job satisfaction, autonomy, and quality of care (Freeborn, Hooker, & Pope, 2002). A satisfied, well-established, and stable staff lends itself to improved patient outcomes, decreased costs over time secondary to decreased turnover and improved use of resources, as well as improved patient safety (Grembowski et al., 2003).

The literature encompassing job satisfaction for both physicians and nurses is considerable (Cejka, 1998; Freeborn et al., 2002; Konrad, Fletcher & Carey, 2004), but the research on job satisfaction and nurse practitioners is more limited (Greiner & Knebel, 2003; Misener & Cox, 2001, Tri, 1991). Tri's study examined the relationship between practice setting characteristics and job satisfaction. Kacel, Miller, and Norris (2005) identified the factor that most influenced nurse practitioner job satisfaction: the ability to deliver quality care, which is positively impacted by interdisciplinary practice (Greiner & Knebel; IOM, 2001). Physician satisfaction has been linked to appropriate prescribing practices, patient compliance, and patient satisfaction (Grembowski et al., 2003). Increased satisfaction also decreases turnover, which decreases the administrative costs of recruitment and replacement of physicians (Grembowski et al.). These same factors were found to apply to nurse practitioners (Koelbel, Fuller, & Misener, 1991a).

The long-term goals of improving patient safety, decreasing costs, and improving

quality will only be achieved with a satisfied, competent interdisciplinary team of health care professionals (IOM, 2001). “Teams tend to reduce the utilization of redundant or duplicate services, and they also tend to develop more creative solutions to complex problems because of their members’ diverse academic backgrounds and experiences” (Committee on Quality of Health Care in America, 2001). Working collectively towards these goals will enable all health professionals to deliver quality care effectively, which will contribute to their professional satisfaction.

Purpose of the Study

The purpose of this study was to explore the relationship between the degree to which a sample of nurse practitioners in Pennsylvania defines their practice as interdisciplinary and their level of job satisfaction. The Misener Nurse Practitioner Job Satisfaction Scale was administered to a number of nurses in Pennsylvania to measure their job satisfaction (See Appendix A). Bronstein’s Index of Interdisciplinary Collaboration (IIC) was administered to measure their interdisciplinary practice (See Appendix B). Additionally, the investigator in this study included a demographic survey (See Appendix C).

A secondary purpose was to investigate the relationship between interdisciplinary practice and the six factors identified by the Misener Nurse Practitioner Job Satisfaction Scale as dimensions of job satisfaction.

Conceptual Framework

The model that guided this investigation was developed by Koelbel, Fuller, and Misener (1991a), who based their model on Herzberg’s Dual-Factor Theory of Job Satisfaction (Herzberg, Mausner, & Snyderman, 1959). In developing their model,

Koelbel et al. added the dimensions of individual differences and global assessment of job satisfaction to Herzberg's theoretical model. They describe individual differences as the personal qualifications and past experiences that influence an individual's perceptions of a job as being satisfying or dissatisfying. They include such characteristics as gender, educational level, tenure, work experience, and hierarchical position as individual factors that influence a person's perceptions of job satisfaction (Koelbel et al., 1991a). Global satisfaction is a measure of overall job satisfaction, and reflects the fact that a person may be dissatisfied with certain aspects of their job but overall feel content with the basic job (Koelbel et al.).

In Herzberg's original research, he found that factors involved in producing job satisfaction are separate and distinct from factors that lead to job dissatisfaction. According to Herzberg, the opposite of satisfaction is no satisfaction, and the opposite of dissatisfaction is no dissatisfaction. However, the presence of satisfaction does not preclude the presence of dissatisfaction. Herzberg postulated that the theory that a person works out of a sense of duty is not valid; instead, the worker must be willing and even eager to work.

The basis of Herzberg's (1959) theory is his belief that humankind has two sets of needs: the basic or animalistic needs, which are related to a person's environment, and their higher level or humanistic needs, which are related to the tasks in which a person is involved (Herzberg, 1966). In his original research, Herzberg (1959) identified five factors that determine job satisfaction: achievements, recognition, work itself, responsibility, and advancement. He found that the work itself, responsibility, and advancement play the most important roles in creating a positive change in job

satisfaction that is sustainable. He found these factors to be the dimensions of the work a person was involved in. Herzberg also refers to these factors as “motivators” since they serve to motivate a person to perform in a superior manner.

This same research demonstrated factors contributing to job dissatisfaction. The major dissatisfiers, according to Herzberg, were company policy and administration, supervision, salary, interpersonal relations, and working conditions. He identified these characteristics as the dimensions of a person’s environment. If the factors of job dissatisfaction are managed appropriately, they can serve to prevent job dissatisfaction. Herzberg (1959) termed these factors “hygienes” because of their preventive nature. These hygienes fall under basic needs.

According to Herzberg (1959), the factors of satisfaction or dissatisfaction follow two separate continua, accounting for the fact that there are aspects of a job that a person may like and aspects they may dislike. Since a person’s job satisfaction is also on a continuum, it is important to remember that the absence of dissatisfaction does not necessarily equal satisfaction, or vice versa. The satisfiers and dissatisfiers are fluid and changeable, depending on other aspects of the job and work environment (Misener & Cox, 2001).

Herzberg’s Dual-Factor Theory (1959) was used with nurse practitioners for the first time by Koelbel (1988) in her unpublished master’s thesis, *The Relationship Between Selected Personal and Work-Related Factors and the Job Satisfaction of Nurse Practitioners*. Her findings on the job satisfaction of nurse practitioners supported Herzberg’s theory of job satisfaction. Later, Koelbel et al. (1991a) adapted Herzberg’s theory for a model to survey nurse practitioners’ job satisfaction. In 2001, Misener and

Cox also used Koelbel et al.'s model to develop a nurse practitioner job satisfaction instrument. Their instrument is made up of 6 subscales, 4 of which are comprised of questions that identify hygienes and 2 subscales that contain questions related to motivation. The hygienes include intrapractice partnership/collegiality, professional/social/community interaction, time and benefits. The motivators are challenge/autonomy and professional growth.

Koelbel et al. (1991a) determined that individuals evaluate the intrinsic and extrinsic factors of a job from their own frame of reference, which reflects an individual interpretation of job satisfaction. This frame of reference is influenced by their past experiences, gender, age, and length of experience as a nurse practitioner. Koelbel et al.'s model shows that these individual differences along with Herzberg's motivators and hygienes relate to global satisfaction (See Figure 1.1).

Global job satisfaction is an indicator of a person's general happiness with his or her decision to accept a position. They may later find that there are aspects of the job with which they are not happy, but overall they are satisfied (Koelbel et al., 1991a; Koelbel, Fuller, & Misener, 1991b). The overall assessment of job satisfaction is important because it influences a nurse practitioner's job performance and whether or not she or he will remain in the position.

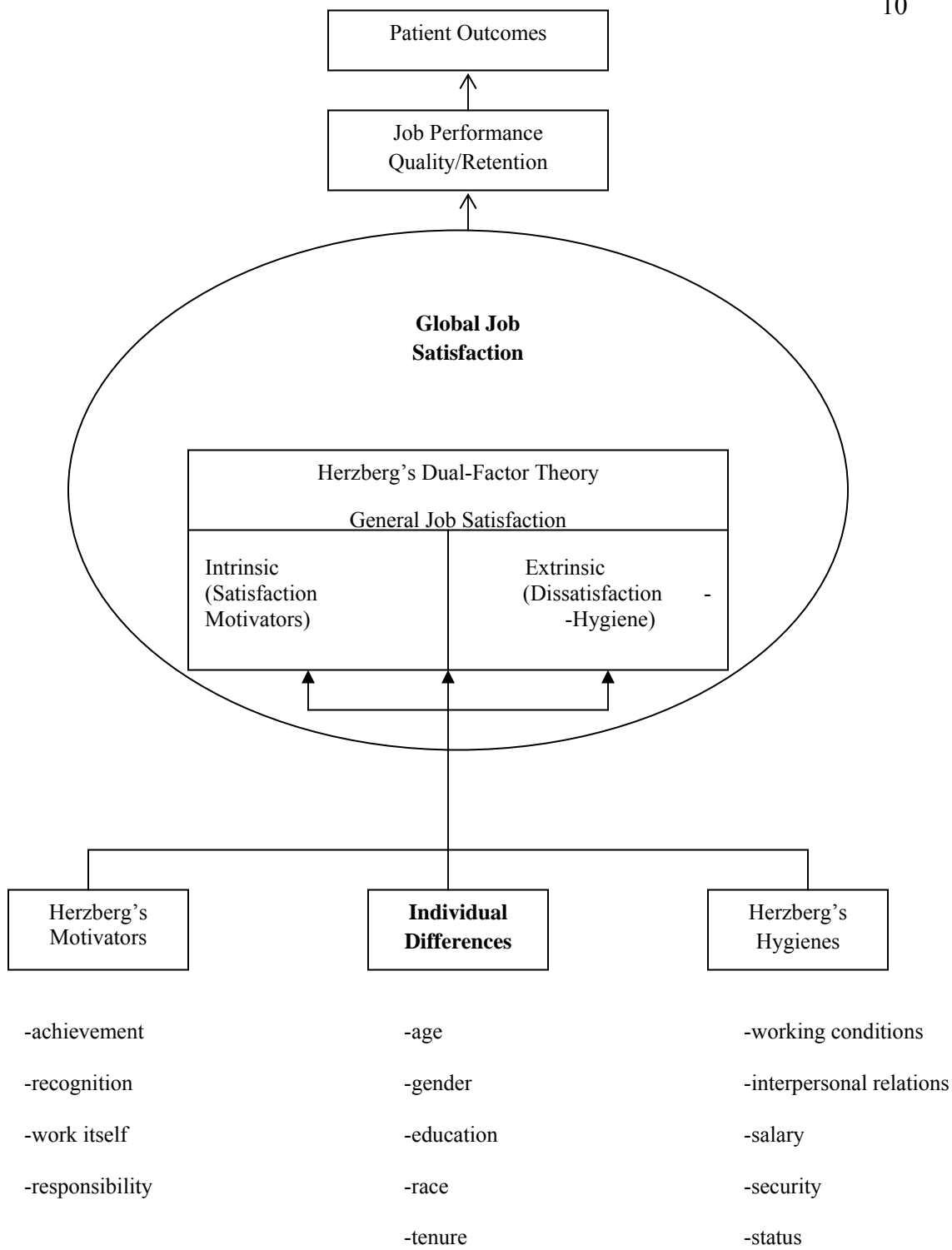


Figure 1.1. Koelbel, Fuller, and Misener's (1991a) Model of Job Satisfaction of Nurse Practitioners, an adaptation of Herzberg's Dual-Factor Theory of Job Satisfaction (1959). (The added dimensions are shown in boldface.)

To measure the relationship of interdisciplinary practice and job satisfaction of the sample of nurse practitioners, which was the purpose of this study, the researcher further adapted both Herzberg's (1959) theory and Koelbel et al.'s (1991a) model by adding interdisciplinary practice as a factor of job satisfaction (See Figure 1.2). The other factors, intrinsic and extrinsic, and individual differences are congruent with Koelbel et al.'s model (1991a). The characteristics that comprise the dimension of interdisciplinary practice were derived from the definition of interdisciplinary practice employed for the purpose of this study (See Definition of Terms).

The spheres of patient outcomes and job performance, quality and retention, as shown in Koelbel et al.'s model, are beyond the scope of this study. However, the intrinsic and extrinsic factors of job satisfaction were important to the study because they account for the everyday aspects of a nurse practitioner's practice.

Koelbel et al. (1991a) define intrinsic and extrinsic factors as Herzberg (1959) did. These definitions remained constant for this study. The purpose of the study was to determine how interdisciplinary practice relates to these dimensions of job satisfaction in nurse practitioners.

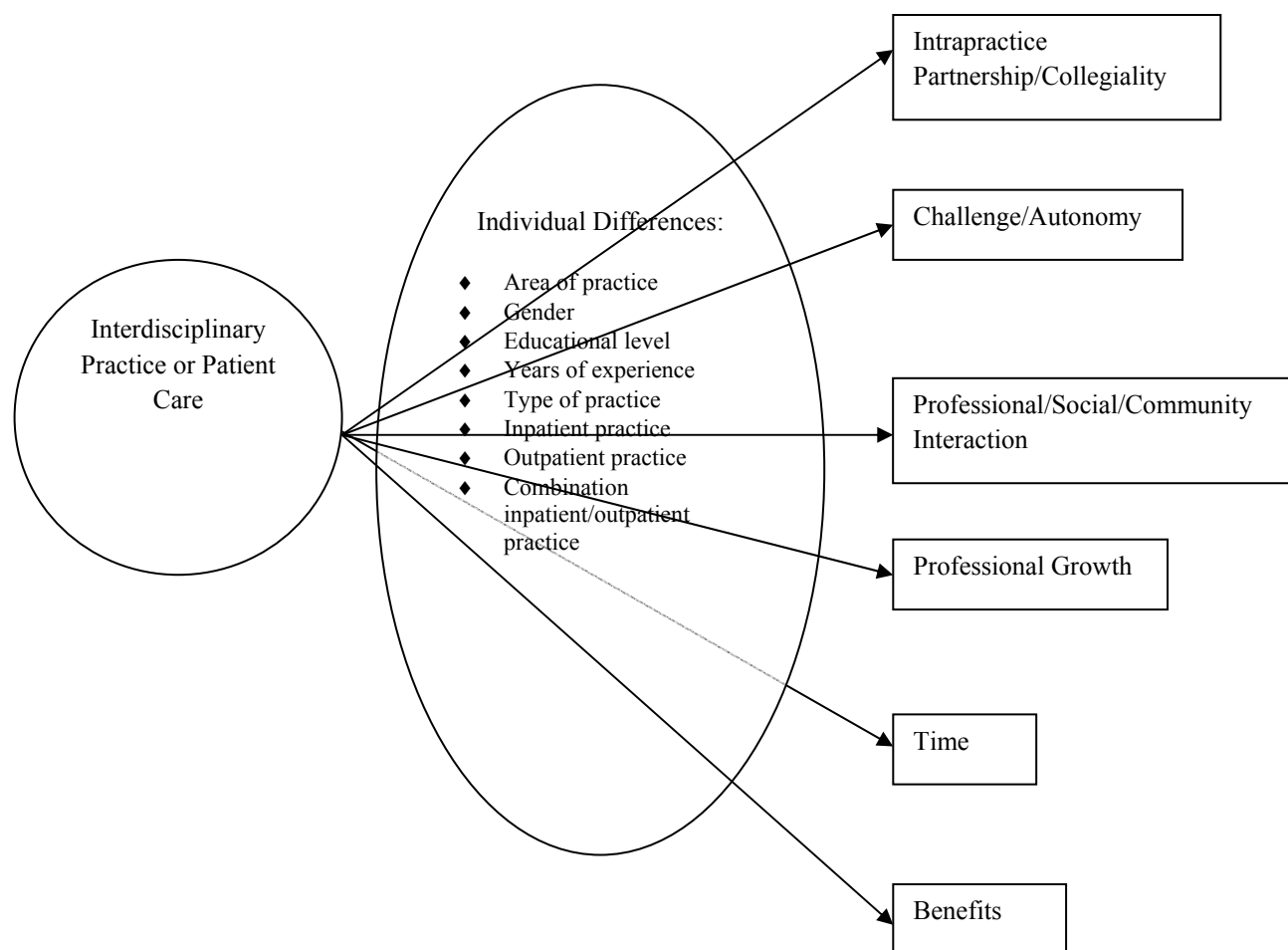


Figure 1.2. Nurse Practitioners' Job Satisfaction and Interdisciplinary Practice - the theoretical model for this study, based on Herzberg's Dual-Factor Theory (1959) and Koelbel et al.'s (1991a) Model of Job Satisfaction of Nurse Practitioners (See Figure 1.1).

Research Questions

The following research questions were used to achieve the purpose of this study:

1. What is the relationship between job satisfaction, as measured by the overall score on the Misener Nurse Practitioner Job Satisfaction Scale, and the degree to which nurse practitioners in Pennsylvania define their practice as interdisciplinary, using the Index of Interdisciplinary Collaboration (Bronstein, 2002; Parker-Oliver, Bronstein, & Kurzejeski, 2005)?
2. What is the relationship between each of the six factors of the Misener Nurse Practitioner Job Satisfaction Scale and the degree to which nurse practitioners in Pennsylvania define their practice as interdisciplinary, using the Index of Interdisciplinary Collaboration?
3. Which of the following best predicts the degree of interdisciplinary practice among these nurse practitioners: total years of experience as a registered nurse (including those as a nurse practitioner), years of practice as a nurse practitioner, educational level, or the geographical location of the practice?

Hypothesis

The hypothesis for this study is stated as follows:

The nurse practitioners' job satisfaction scores, as measured by the Misener Nurse Practitioner Job Satisfaction Scale, will be related to the degree to which nurse practitioners in Pennsylvania identify their practice as interdisciplinary as measured by the Index of Interdisciplinary Collaboration.

Definition of Terms

The following definitions of terms were used in this study:

Collaboration: An interdisciplinary process for communication and decision making that enables the separate and shared knowledge and skills of the care providers to synergistically influence the client/patient care provided (Conway, Hu, & Daugherty, 1998).

Extrinsic factors: Dissatisfiers that arise from the work environment and include working conditions, interpersonal relationships, salary, status, security policies, administration, and supervision (Herzberg, 1966).

Factors of collaboration: Consultation and referral; shared decision making; communication practices; attitudes of mutual respect and trust (Bailey, Jones, & Way, 2006).

Hygienes: The dissatisfier that describe the environment and serve to prevent job dissatisfaction while having little effect on positive job attitudes (Herzberg, 1966).

Interdisciplinary: Involves two or more academic, scientific, or artistic disciplines (Merriam-Webster onLine Dictionary, 2005).

Interdisciplinary collaboration: An interpersonal process leading to attainment of specific goals that are not achievable by one team member alone (Parker-Oliver et al., 2005).

Interdisciplinary education: The process by which students from the health-related occupations with different educational backgrounds learn together during certain periods of their education, with interaction as an important goal, to collaborate in providing promotive, preventative, curative, rehabilitative and other health-related

services (Klein, 2006).

Interdisciplinary practice: joint planning, decision making, and goal setting. The process involves a deep level of collaboration in the development of the plan of care conducted jointly with individuals from different professions. These professionals would be expected to respect the input of each team member, and there would be a sharing of knowledge (Akhavain et al., 1999; Bailey et al., 2006; Sorrell-Jones, 1997).

Interdisciplinary practice has a deeper level of collaboration in which processes such as evaluation or development of a plan of care are done jointly with professionals of different disciplines pooling their knowledge in an interdependent manner.

Intrinsic factors: Satisfiers that arise from the performance of the job itself, achievement, recognition, responsibility, and advancement and the work itself (Herzberg, 1966).

Job satisfaction: A multidimensional affective outcome resulting from the interaction of an employee's expectations, values, environment, and personal characteristics; it is recognized that satisfiers and dissatisfiers are dynamic and relative to the employee (Misener & Cox, 2001).

Motivators: Satisfying factors that are effective in motivating the individual toward superior performance and effort (Herzberg, 1966).

Nurse practitioner: A registered nurse who has advanced education and clinical training in a health care specialty area. Nurse practitioners work with people of all ages and their families, providing them with information needed to make informed decisions about health care and lifestyle choices (American Academy of Nurse Practitioners, 1997). An alternative definition would be nurse practitioners who have a graduate degree in

nursing, conduct comprehensive health assessments, and demonstrate a high level of autonomy and expert skill in the diagnosis and treatment of complex responses of individuals, families, and communities to actual and potential health problems. They formulate clinical decisions to manage acute and chronic illness and promote wellness. Nurse practitioners integrate education, research, management, leadership, and consultation with their clinical role and function in collegial relationships (Abdellah, 1997).

Rural: A county or school district is considered rural when the population density within the county or school district is less than the statewide density of 274 persons per square mile. A municipality is considered rural when the population density within the municipality is less than 274 persons per square mile or the municipality's total population is 2,500 unless more than 50% of the population lives in an urbanized area, as defined by the U.S. Census Bureau (Anonymous, 2003).

Team: A number of people with complementary skills, who are committed to a common purpose, set of performance goals, and approach for which they hold themselves mutually accountable (Hyer, Fairchild, Abraham, Mezey, & Fulmer, 2000).

Urban: An area that has a densely settled core and adjacent densely settled census blocks. The area must have a minimum population of 50,000 (Anonymous, 2003).

Assumptions

The following assumptions regarding the study were considered during the data analysis as they would likely influence the conclusions drawn from the findings of this inquiry:

- Individuals will respond honestly to the survey questions.

- Individuals prefer to work in positions with which they are satisfied.
- Not all respondents will feel satisfied with their positions.
- Not all aspects of interdisciplinary practice will be present in each practice setting.
- A respondent will only complete the survey once.

Limitations

The data for this study were collected through an Internet survey. Although the Misener Nurse Job Satisfaction Scale was chosen to collect data for this project, it had not been used on the Internet, so the researcher obtained permission from the tool's originator to do so (T. Misener, personal communication, March 2, 2007). Thus, there were no data regarding reliability or validity for administering this tool via the Internet, which was a limitation of this study.

There may be certain characteristics that predispose nurse practitioners to subscribe to the Pennsylvania Coalition of Nurse Practitioner listserv. To avoid sampling bias, the researcher sent a postcard invitation (See Appendix D) to every sixth nurse practitioner on a mailing list purchased from the Pennsylvania State Board of Nursing. When the data were collected, there were 6,150 licensed nurse practitioners in the state of Pennsylvania (D. Miller, personal communication, July 5, 2006), of which 1,079 were subscribers to the listserv (P. Schwabenbauer, personal communication, September 25, 2006). The State Board list of licensed nurse practitioners includes those who hold an active or inactive license in the state. In Pennsylvania, nurse practitioners are required to renew their license every two years, so the mailing list was current. A limitation of this study was that there was a chance that a nurse practitioner may have received both the

listserv invitation, as a subscriber, and the postcard invitation by regular mail, but it is unlikely that a nurse practitioner would have responded to the survey twice.

Measurement error was addressed by using the Misener Nurse Practitioner Job Satisfaction Scale, which has documented validity and reliability with this population. The Index of Interdisciplinary Collaboration was developed by a social worker to explore the interdisciplinary practices of social workers (Bronstein, 2002). There is documented reliability and validity data for this instrument; however, it had not been used on the Internet or with nurse practitioners.

A pilot study was conducted by the study's researcher that combined the Misener Nurse Practitioner Job Satisfaction Scale, the Index of Interdisciplinary Collaboration, and the investigator-developed demographic tool to identify and correct all errors in the instruments prior to the main study. Any issues that were identified were corrected when they could be. Some could not be addressed because they would have required changing the tool, and the survey was not the property of the investigator.

Nonresponse error was limited because of the length of the instruments and the fact that the survey was direct and to the point. The additional questions that the investigator used were limited as well. One week after the researcher e-mailed the survey she sent a thank-you e-mail to the nurse practitioner listserv with a reminder to return the survey (See Appendix E), if the subscriber had not already done so. This technique had been found to improve the response rate by 8% (Dillman, 2000).

Significance of the Study

In the health professions, it is widely expected that a greater use of interdisciplinary practice will facilitate improved job satisfaction and improve

communication between health care providers, as well as allow for complex care to be effectively delivered to an increasingly complex patient population. Ultimately, an interdisciplinary practice environment could decrease medical error rates and health care costs as well as improve the quality of health care. Being able to deliver high quality care in a collaborative and interdisciplinary environment is generally predicted to improve the morale and the professional satisfaction of the health care professionals involved.

Although these are the general expectations that surround the incorporation of interdisciplinary practice, there has been little research that demonstrates these outcomes, especially among nurse practitioners.

Research has demonstrated, however, that when physicians work collaboratively with nurse practitioners, the latter report improved job satisfaction and reduced workload (Phillips, Harper, Wakefield, Green, & Fryer, 2002). Research has shown that this health care delivery model also improves quality of care and decreases costs (Phillips et al., 2002). It is also widely recognized that interdisciplinary team care is essential for the effective management of complex patients (Keough, Field, & Gurwitz, 2002); yet to date there has been little evidence of how to improve providers' willingness to work collaboratively (Miller, Reeves, Zwarenstein, Beales, Kenaszchuk & Conn, 2008; Phillips et al., 2002). Demonstrating that nurse practitioners in an interdisciplinary environment are more satisfied with their jobs will verify that efforts to move health care delivery in this direction will benefit nurse practitioners, and ultimately their patients.

Significance to Nurse Practitioners

Nurse practitioners are an integral part of the health care delivery team. Their role in interdisciplinary health care was envisioned as collaborative from its inception in 1965

(Phillips et al., 2002). Development of an interdisciplinary practice environment will further the professional growth of nurse practitioners (Yeager, 2005). This environment also supports health care providers' ability to give care to the fullest extent of their preparation. These factors all contribute to improved professional satisfaction (Yeager).

Dontje, Corser, Krulen, and Tietelman (2004) identified the four components of nurse practitioner practice as: empowerment, continuity of care, shared decision making, and holistic care. These components have been advocated by nursing and expounded on as the clinical practice of nursing has expanded. Creation of an interdisciplinary practice environment supports these dimensions of practice (Phillips et al., 2002; Yeager, 2005).

Significance to Nursing Education

Health care education must move in an interdisciplinary direction. However, it has been demonstrated that there is a lack of understanding among the health care disciplines regarding role expectations. These misunderstandings lead to frustration, which impacts job satisfaction. Educating future generations of health care providers (including nurse practitioners) who are competent in their own discipline and who are able to work side by side with other disciplines will improve patient outcomes, decrease costs, decrease medical error rates, and improve the job satisfaction of all health care team members (Holmes & Osterweis, 1999).

This study of nurse practitioners and interdisciplinary practice is important because it will help health educators and administrators develop a health care education system that will promote interdisciplinary practice and, in turn, professional job satisfaction. Prior to making changes in this system, however, it will be important for health care leaders to know what makes a clinical work environment conducive to

increased job satisfaction. Employers will want to retain their best professionals. Therefore, providing them with a satisfying work environment will likely contribute to the achievement of this goal (Gauci-Borda & Norman, 2001; Goodell & Van Ess Coeling, 1994; Irvine & Evans, 1995). This study will provide the first documentation of the relationship between interdisciplinary practice and the job satisfaction of nurse practitioners. With the information gained from the study, the researcher will continue to explore other aspects of interdisciplinary practice and how they impact various areas of health care.

Chapter Summary

Research has demonstrated that improved job satisfaction leads to improved quality of care, lower health care costs, and decreased medical error rates (Flannery & Van Gaasbeek, 1998; Grembowski et al., 2003; Grindel, Peterson, Kinneman, & Turner, 1996). The academic community, the government, and professional health care organizations are advocating for interdisciplinary practice as one means to address the weaknesses of the U.S. health care system, especially to reduce medical errors and to improve quality of care.

There is a dearth of literature that addresses the relationship between interdisciplinary practice and the job satisfaction of nurse practitioners. Many articles have reviewed the professional satisfaction of physicians and nurses, but few have measured the job satisfaction of nurse practitioners, and virtually none have included interdisciplinary practice as a variable that affects job satisfaction. The relationship of job satisfaction and interdisciplinary practice in regard to nurse practitioners has not been studied.

Therefore, this study has explored the relationship between the degree to which a nurse practitioner defines his or her practice as interdisciplinary and the job satisfaction of that nurse practitioner. The study was limited to nurse practitioners in the state of Pennsylvania. The findings from the study will contribute to the scientific health care literature in general and nursing literature in particular. This information will be important to the process necessary to change nursing education and the health care system as health care delivery becomes more complex and diverse.

Chapter 2

REVIEW OF THE LITERATURE

This chapter reviews the research on interdisciplinary practice and education, the job satisfaction of health providers in general and nurse practitioners in particular, and identifies the gaps in the literature on the job satisfaction of nurse practitioners. This literature review also reflects the changes that are taking place in an increasingly complex health care system.

The Challenges of Today's Health Care System

Health care as an industry has gone through monumental changes over the past 35 years. How care is delivered and paid for, where it is delivered, and who provides this care look much different today than in the past. Changing role expectations for individual health care professions as well as the development of new specialties have made a complex health care delivery system even more complex. Modern medical care involves rapidly changing interventions and treatment plans, and the activities of multiple people from many different disciplines (Wagner, 2004).

Many older individuals now live for decades with one or more chronic illnesses. This population has multiple health care needs that must be met in a timely and cost effective manner. This increasing complexity of the health care system has also opened the door to potential medical errors, increased costs, and compromised health care quality. The health care system is also seeing a shift to more chronic diseases, even in children (Halfon, DuPlesses, & Inkelas, 2007).

The challenges in today's health care system are well known, both to providers

and patients; providers must recognize their individual limitations to manage successfully in this increasingly complex environment (McKeon, Oswaks, & Cunningham, 2006). Nurse practitioners represent an important group of health care professionals who are poised to meet these increasing needs (Abdellah, 1997; Wilson, 2009). Nurse practitioners are uniquely positioned in health care to identify patients' medical and nursing needs, implement treatments, evaluate changes, obtain consultation when necessary, and then integrate care by an interdisciplinary team (Walker, 1994; Wilson, 2009). Maintaining the job satisfaction of these providers will be paramount to keeping them in the workforce and motivated to care for patients.

Burdi and Baker (1999) compared the results of two job satisfaction surveys administered to physicians in California. They found that physician satisfaction had declined between 1991, when the survey was first administered, and in 1996, when they administered it to the same group of physicians, for the second time. They concluded that this drop in satisfaction was secondary to the changing health care environment and the increasing influence of managed care. In a managed care environment, physicians reported a decrease in autonomy in regard to their patient care and administrative decisions. These researchers asserted that it would be difficult to operate a successful health care delivery system with providers who are unhappy.

The incorporation of an interdisciplinary practice model into our existing health care delivery system has been advocated by many professional organizations, including the American Board of Internal Medicine Foundation, the American College of Physicians-American Society of Internal Medicine Foundation, and the European Federation of Internal Medicine (2002). Interdisciplinary practice is seen as a means for

improving quality of care, decreasing health care costs, improving communication between health care providers, and decreasing medical errors (Taylor-Seehafer, 1998). Poor communication between providers has been cited as one of the root causes of patient errors in three-quarters of all adverse events (McKeon et al., 2006; Yeager, 2005).

Changing the traditional health care delivery system to one that incorporates an interdisciplinary practice model may add stress to the already stressful work environment of many health care professionals, including nurse practitioners, who are the focus of this study. Therefore, it is important to demonstrate how interdisciplinary practice improves communication between providers, allows for better distribution of resources that are already scarce, and helps providers to transition to this delivery model with more enthusiasm and commitment. Health care professionals must recognize the potential to experience higher job satisfaction when engaged in interdisciplinary practice.

The primary aim of this study was to explore the relationship between the degree to which nurse practitioners identify their practice as interdisciplinary and their job satisfaction. A secondary purpose was to investigate the relationship between interdisciplinary practice and the six factors identified by the Misener Nurse Practitioner Job Satisfaction Scale as dimensions of job satisfaction.

The State of the Health Care System

Much has been written about the difficulties with the U.S. health care system and the fact that they persist (Aroskar, 1998; Halfon et al., 2007; Leipzig et al., 2002; McKeon et al., 2006; Mathews & Provost, 2008; Rosser et al., 2005; Way, Jones, Baskerville, & Busing, 2001). The system is complex, difficult to navigate for both patients and providers, and plagued with multiple opportunities for error that have

resulted in as many as 238,337 deaths per year (HealthGrades, 2009). Medical errors are the third most common cause of death in the United States (Rosser et al.).

Multiple factors contribute to medical errors. Care delivery often involves many different providers who seldom have all the information they need about a patient's condition. Because care is fragmented, there is a greater likelihood of mistakes. Communication between several different providers is difficult and often does not occur except through the patient or the patient's family (Kohn et al., 2000). The cost of medical errors that result from these shortcomings in the health care system cannot be measured in dollars alone. In addition, there are losses of patients' and providers' productivity, health care providers' morale, and human life. Ultimately, society bears the cost of a health care system that does not function safely and efficiently. Contributing to increased indirect cost is a waste of productivity in the form of unemployment, longer patient stays in the hospital, and repetition of expensive testing (Kohn et al.; Mathews & Pronovost, 2008).

Creating an interdisciplinary environment can help rectify many of the health care system deficiencies. The American Psychiatric Association has found so much value in interdisciplinary collaboration that they now give an annual award for exemplary interdisciplinary collaboration, an acknowledgement of an organization's attempt to improve the care of persons with mental illness (Akhavain, Amaral, Murphy, & Uchlinger, 1999). However, because change in medical practices is stressful, providers need to be convinced that such a change will benefit them as well as their patients. Demonstrating that an interdisciplinary environment can improve the job satisfaction of health care providers is one of the first steps in establishing interdisciplinary practice.

Thus, it is important for policy makers and health care administrators to know the areas in which primary care clinicians are satisfied or dissatisfied in order to improve and strengthen the health care delivery system. The more rewarding and satisfying the work is for the health care professional, the better the care they will provide. High levels of dissatisfaction among the health care workforce have been associated with adverse events, poor patient relationships, decreased quality of care, and decreased organizational effectiveness (Freeborn et al., 2002; Wilson, 2009). However, Freeborn found that workers who perceive that they have more control over their work and who participate in decisions are happier, more satisfied, and more productive.

Interdisciplinary Practice

It is important to first define interdisciplinary practice and its benefits.

Interdisciplinary practice, a model of practice used since 1948 (Singleton & Green-Hernandez, 1998), has been defined as people with distinct disciplinary training working together for a common purpose, as they make different, but complementary, contributions to patient-focused care (Leathard, 1994). Interdisciplinary practice can also be defined as the joint planning, decision making, and goal setting of practitioners. Sorrell-Jones (1997) describes interdisciplinary practice as a deeper level of collaboration in which processes such as evaluation or development of a plan of care are done jointly with professionals of different disciplines pooling their knowledge in an interdependent manner. The benefits of this practice model include improved quality of care, reduced mortality rates, and decreased costs (Akhavain et al., 1999; Rodriguez-Paz, Mark Herzer, Michelson et al., 2009). An alternative definition of interdisciplinary practice focuses more on the collaborative aspects of practice and includes the ability of each professional to capitalize

on the differences each member brings to the interdisciplinary treatment team (Akhavain et al.; Rodriguez-Paz et al.). Bailey et al. (2006) define the interdisciplinary process as the communication and decision making that enable the separate and shared knowledge and skills of the care providers to synergistically influence the client/patient care provided.

For the purposes of this study, interdisciplinary practice has been defined as a process that involves joint planning, decision making, and goal setting. The process involves a deep level of collaboration in the development of the plan of care conducted jointly with individuals from different professions. These professionals would be expected to respect the input of each team member, and there would be a sharing of knowledge (Akhavain et al., 1999; Bailey et al., 2006; Sorrell-Jones, 1997).

The History of Interdisciplinary Practice

Historically, health care has been delivered in an authoritarian environment, with the physician as the authority (Fagin, 1992). However, the adoption of interdisciplinary practice will necessitate a change in this perspective. Montefiore Hospital in New York City first pioneered this practice in their home health services in 1948. This first interdisciplinary team was comprised of health care professionals from medicine, nursing, physical therapy, and social work. The first interdisciplinary medical practice was in 1951 with the Silver Family Health Maintenance Project. In the 1960's, the United States government funded community health centers that were interdisciplinary in nature. The 1970's brought federal funding for interdisciplinary practice programs, and the 1980's saw efforts concentrated in the geriatric population through the Department of Veterans Affairs (Singleton & Green-Hernandez, 1998).

In health care, interdisciplinary practice is expected to take on an even greater role

in the delivery of care. The vision statement from the IOM report *To Err is Human: Building a Safer Health System* (2000) affirms the view “. . . that all health professionals be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidenced-based practice, quality improvement approaches, and informatics” (Kohn et al., 2000). Patterns of health care practice must change to bring this vision to fruition. According to the IOM, all health care providers will be expected to function in harmony as part of an interdisciplinary team. The overall goals of interdisciplinary practice are to provide quality service to the patients cared for and to create a workplace in which all health professionals can learn, communicate without fear of criticism, and feel professionally satisfied (Horder, 2000). Having the expectations of professional satisfaction contributes to job satisfaction and a sense of fulfillment (Souba, 2002).

The Interdisciplinary Practice Model: Benefits and Limitations

This practice style includes a shared vision, good communication, role understanding, and role valuing (Freeman, Miller, & Ross, 2000). Freeman et al. used a case study to explore the factors that support or inhibit interdisciplinary practice. They found that role understanding, the ability to negotiate when there is a difference in opinion, and good communication were all essential to the function of interdisciplinary practice and the job satisfaction of the providers. Not understanding what each member of the health care team brings to the case and what the limitations of each role are can often cause unrealistic expectations (Aroskar, 1998; Leipzig et al., 2002; Way et al., 2001). McKeon et al. (2006) noted that it is difficult for health care providers to develop trust for each other because of differences in world views from one profession to the next.

The supportive culture of interdisciplinary practice increases trust, improves patient safety, encourages open relationships, and provides collaboration (Parsons & Stonestreet, 2004; Mathews & Pronovost, 2008). Interdisciplinary health care delivery also enhances a commitment to professional responsibility as well as professional satisfaction (American Board of Internal Medicine Foundation [ABIM], American College of Physicians Foundation [ACPF], European Federation of Internal Medicine [EFIM], 2002).

Way et al. (2000) studied two rural practice sites in Canada and examined 400 patient encounters. They found that there were few referrals from the physicians to the nurse practitioners, whereas the nurse practitioners referred readily to the physicians. Among the reasons for this disparity were the lack of interdisciplinary education and lack of physician understanding of the nurse practitioner role. The frustration that can occur given these circumstances often leads to dissatisfaction among professionals (Bauman, 2001).

Multiple reasons are cited in the literature for moving to interdisciplinary care. These include changing a patient's health course for the better, ameliorating the patient's suffering, and comforting the dying (Aroskar, 1998; Egan & Abbott, 2002; ABIMF, ACPF, EFIM, 2002; Hamel, 2001; Hyer et al., 2000; Rodriguez-Paz, 2009).

Interdisciplinary practice promotes improved patient care and patient outcomes, respect for and between disciplines, role blending, decreased turnover with a corresponding decrease in costs, increased professional satisfaction, optimal use of intellectual resources, team cohesiveness, and the opportunity for each health professional to fulfill their individual potential. These factors will make the practice

environment for nurse practitioners more professionally satisfying. All of these characteristics are part of a health care environment that promotes job satisfaction (Demmy, Kivlahan, Stone, Teague, & Sapienza, 2002; Manderino & Berkey, 1997; Miller, 1996; 2001).

Demmy et al. (2002) explored how job satisfaction impacts retention and recruitment in an academic setting. A survey that measured institutional leadership factors and physicians' perceptions of satisfaction was distributed to 223 physicians who had departed the university medical center over the previous eight years. Demmy et al. assert that engaging physicians in leadership training and interdisciplinary professional-building activities limited their perceived threat to their autonomy. A sense of autonomy was determined to be highly correlated with physician job satisfaction.

Mezey et al. (1998) conducted a retrospective study by reviewing 1,077 cases of residents in 45 long-term care facilities. In their sample, a geriatric nurse practitioner and physician team cared for 414 residents, while a single physician cared for the remaining residents. Mezey et al. found that when geriatric nurse practitioners were teamed with physicians, they were able to provide care to the residents of a long-term care facility at a cost of \$72.93 per resident. However, when the physicians cared for these patients as a single practitioner, it cost the facility \$197.00 per resident. Similarly, Zwarenstein and Bryant (2006) found that when a team approach was used with an inpatient population, the length of stay dropped from 6.06 to 5.46 days, accounting for a reduction in hospital costs from \$8,090 to \$6,681 per patient. Both of these studies reflect that when health care professionals from different disciplines work collectively, the cost of providing care decreases.

In addition to Mezey et al.'s (1998) research, other investigators have studied interdisciplinary practice with multiple populations, including the geriatric population, the homebound (Zimmer, Groth-Juncker, & McCusker, 1985), and children (Stein & Jessop, 1984). Zimmer et al. conducted a randomized study of care delivered by using a team approach to patients who were homebound. Their sample included 167 patients, 85 who were randomized to team care and 82 who were provided care in the usual manner. The team consisted of a nurse practitioner, physician, and medical social worker. The researchers found that there were fewer hospitalizations, nursing home admissions, and outpatient visits in the population that had been provided care by the interdisciplinary team. Stein and Jessop conducted a pretest-posttest randomized study to evaluate pediatric home care. In their study, an interdisciplinary team provided comprehensive care to 219 families with a chronically ill child. They found that although multiple specialty services were involved in the care of these children, significant portions of the care were omitted. Having multiple disciplines involved in care does not always mean that the care is adequately organized and that all of a patient's needs are met. Interestingly enough, Stein and Jessop also found that when the interdisciplinary team approach was used, patients and their families were more satisfied with the care provided, even if the child's condition did not improve.

Patients will continue to have complex needs that are best served by providers from different disciplines working together. The more complex the care, the greater the need for interdisciplinary practice (Egan & Abbott, 2002; Hamel, 2001; Hyer et al., 2000). Interdisciplinary team care is thought to be the most effective and efficient way to promote comprehensive health care (Beauchesne & Maguire-Meservey, 1999; Hamilton,

Yuan, Lachman, Krause et al., 2008). Successful collaborative practices contribute to increased job satisfaction, personal and professional growth and development, and the satisfaction of being able to deliver excellent patient care (Martin & Coniglio, 1996). Elements of collaboration are integral to interdisciplinary practice, such as coordinating care, shared planning of care, purposely communicating about patient cases, defining and understanding individual health practitioner's roles, etc.

Interdisciplinary Education

An historical review of the literature regarding interdisciplinary education was conducted by Lavin et al. (2001) which netted 119 articles, 51 of which had an international perspective. They found articles dated as early as the 1960's demonstrating that interdisciplinary education is a concept that is not new to education in the health professions. The preponderance of international research demonstrated that interdisciplinary education was of worldwide interest as well.

To have a positive impact on students in the health care professions, interdisciplinary health care education needs to occur early in their educational process, but at exactly what point has not been determined. Some studies have found that it needs to be introduced before negative attitudes are developed, but not before the students have identified individually with their own discipline.

In the 1960's, St. Louis University conducted a course that included students from the public health program as well as from some of the social sciences. In the 1970's, courses were sporadically started at several universities that included multiple disciplines, but these courses were confined to the classroom. In the 1980's, interdisciplinary education was embraced by programs that focused on gerontology because this patient

population had multiple and complex needs. In the 1990's, the Internet provided new information and means for studying health care as well as health care education. Online academic courses in health care freed time for students to participate in shared clinical experiences (Lavin et al., 2001).

Barriers to Interdisciplinary Education

Gardner, Chamberlin, Heestand, and Stowe (2002) surveyed 103 academic centers that included the disciplines of medicine, nursing, and pharmacy. Their survey uncovered the attitudes of respondents toward interdisciplinary education, identified barriers to it, and examined how many of these respective schools were offering interdisciplinary courses. Garner et al. found that the general attitude was positive, although the centers all identified barriers. The most frequently identified barriers were lack of financial resources, lack of administrative support, and difficulty managing student schedules. These researchers concluded that interdisciplinary education provided a valuable learning experience for the students. It was also found that early socialization on how to function as a team is essential if interdisciplinary practice is to succeed (Hall & Weaver, 2001).

Pringle, Lavitt, Horsburg, Wilson, and Whittaker (2000) found that the primary challenge to medicine and nursing in designing interdisciplinary educational programs occurred because each discipline had its own faculty and school as well as its own curriculum. They also found that integrating students from different programs was difficult primarily because of schedules.

According to Cooper, Carlisle, Gibbs, and Watkins (2001), there has been recognition of the need for teamwork but as professionals come together, there are role

misconceptions, power struggles, and rivalries. However, interdisciplinary education has been advocated as a means of removing barriers and promoting collaboration.

According to Mitchell and Crittenden (2000), the line between delivery of health care to individuals and communities is blurred, making it necessary to include interdisciplinary education and training for students in order to prepare them to provide care for both individual patients and communities as a whole. However, one of the key barriers to interdisciplinary education is that there is little research evidence to demonstrate its effectiveness (Glen, 2004). Most of the information regarding interdisciplinary education is descriptive, with little empirical research available. Yet many professional health care organizations as well as the IOM advocate that health care educators incorporate interdisciplinary education into their curricula and training (Bellack & O'Neil, 2000). Other barriers include differences in disciplinary focus and mission, schedule difficulties, geographic separation, lack of adequate clinical sites, overlapping roles, and need for faculty development (Larson, 1999).

In order for this practice model to have credibility with students, faculty must model interdisciplinary practice. Curriculum development that incorporates multiple disciplines requires an investment of time and the logistical coordination of both students and faculty. These obstacles are not commonly encountered in traditional health education. Health care professionals have found fault with their education for not providing them adequate preparation in communication, knowledge of the health care industry, and coping and management skills for the workplace (Stephenson, Peloquin, Richmond, Hinman, & Christensen, 2002). Students have been more flexible and open in their thinking earlier in their education, which suggests that the introduction of

interdisciplinary education should occur early (Stephenson et al., 2002).

Benefits of Interdisciplinary Education

Although there are obstacles to the success and development of interdisciplinary education, there are many lifelong benefits for both students/health professionals and their future patients. These benefits include reduced medical costs, improvement in patient satisfaction, improvement in professional relationships and job satisfaction, decreased mortality, improved patient outcomes, improved patient safety, and improvement in quality of care (Dewitt & Baldwin, 2007). Incorporating interdisciplinary education into the health education curriculum for future health professionals will help to ensure that today's students will be well equipped to meet the demands of tomorrow's health care system. The difficulty with this process is that the educators of today are products of the "old system" and will thus have to learn to incorporate these new skills into their own practices (Marcus & Dorn, 2001). Moreover, faculty are often required to teach interdisciplinary courses in addition to their usual assignments and are rarely given credit for this supplementary effort (Blank, 1999).

The 2000 Pew Foundation Report questioned health professionals' education and recommended that all health professionals' schools enable students to develop interdisciplinary competence. The foundation specifically stated that at least 25% of clinical experiences occur in an interdisciplinary environment (Anonymous, 1998). Saba (2000) also found that shared clinical experiences improved long-term collaboration between future health care professionals. He advocates avoiding the process whereby collaboration becomes a jockeying for power as one discipline tries to get another to see patient care from their perspective. Using a system-based approach to health

professionals' education, Saba advocated that health care professionals reflect on personal as well as professional contributions to the care they provided to their patients and the relationships they forge with other health care professionals in the delivery of that health care.

Students who have been precepted by faculty from other disciplines have found the experience valuable (Bland, Stamamon, Wersal, Moorehead-Rosenberg et al., 2000). Working with faculty from another discipline broadens a student's perspective of that faculty's professional role. In their study, these researchers asked the participating students not to reveal their respective disciplines until the end of the course. The students found that they had learned a great deal from each other without having preconceived ideas of the traditional roles of a particular profession.

Besides understanding multiple disciplines and health care provider roles, medical and nursing students need to learn about group process. Group process is usually included in sociology courses in most health care programs, but few of these courses model an interdisciplinary approach. This process involves learning to work together to develop skills that will assist students as they form health care teams in the future. These courses often include an introduction to conflict resolution skills, which are important to all who deliver health care. Learning how to deal effectively and productively with conflict will serve these students in multiple areas of their personal and professional lives (Sternas, O'Hare, Lehman, & Milligan, 1999; Mathews & Pronovost, 2008), but will be especially important when engaging in interdisciplinary care.

Experiencing education in an interdisciplinary environment will facilitate the development of positive attitudes towards other professionals with whom the health care

professionals will work (Lowry et al., 2000; Mathews & Pronovost, 2008, Pringle, Levitt, Horsburg, Wilson, & Whittaker, 2000; Sternas et al., 1999). These researchers felt that interdisciplinary education programs should be mandatory before students enter practice. Pringle et al. determined that educational reform for future health care providers is as important as reform of the health care delivery system. They found that it is through access to interdisciplinary teams that patients are assured holistic and comprehensive care.

Having an understanding of the roles of other team members, through interdisciplinary education and faculty role modeling, as well as an understanding of the expectations associated with those roles, will help students transition from being a student to being a professional. They should have a greater understanding of what the limitations of each professional role are, as well as how to work collectively to gain insight into what will become an increasingly complex list of patient needs (Anonymous, 2004; Hamel, 2001; Rogers, 1995). At the University of South Florida, educators formed a team to develop a model to guide the education of students from four health professions. These educators determined that there are four critical steps to development of this model: establishing a common goal, developing a team process, creating a model to guide their interactions, and developing a support network within the community (Lowry et al., 2000).

Establishing a common language, or at a minimum, an appreciation for the perspectives of other professions, will facilitate the establishment of common goals for the entire team (Anonymous, 2004; Lowry et al., 2000; Masterson, 2002; Rogers, 1995). Having a general understanding of roles and communication skills will promote

improved job satisfaction of students entering the health professions. The goal is to teach future professionals the real need for continued examination of the linkages among economic, social, cultural, technological, and environmental issues for achieving a sustainable global society through the use of science (Lubchenko, 1998). Sternas et al. (1999) at Georgetown University Medical Center worked with students from a variety of health care professions to develop community-based service learning projects. Their initial goals were to improve the quality of care delivered to the residents in the target communities, to improve the educational experience of the students, and to provide services in a cost effective manner. They found that as students participated in these projects they learned to respect each other, to develop skills in accountability and responsibility for work, and to set mutual goals. The faculty involved found that collaboration was a consciously learned behavior that needs to be taught early in the professional career of students in health care.

Hall and Weaver (2001) conducted a review of the literature to explore the dimensions of interdisciplinary education and teamwork in health care. Two issues emerged: first that there is more and more specialization and, second, that there is an increased need for the providers to collaborate. They found that most of the literature reviewed included articles regarding academic activities, but few compared interdisciplinary education with traditional educational practices. Hall and Weaver concluded that there remains a great need for research in interdisciplinary education. The timing of the introduction of interdisciplinary education is critical, but there is no research to demonstrate when it should occur.

Job Satisfaction in the Health Professions

A number of studies indicate that the health care work environment is critical to job satisfaction (Flannery & Van Gaasbeek, 1998; Freeborn & Hooker, 1995; Freeborn et al., 2002). Flannery and Van Gaaseek conducted an exploratory descriptive project to study the variables that affect the job satisfaction of psychiatric clinical nurse specialists. They surveyed 52 clinical nurse specialists and found that those who had a private practice component to their work were more satisfied than those who did not. They attributed this to the autonomy of the clinical nurse specialist in private practice as well as to his or her ability to work in an expanded role. Freeborn et al. conducted a mailed survey of physician assistants and nurse practitioners to examine their perceptions of practice environments and job satisfaction. They found that autonomy and collaboration in the workplace were pivotal to job satisfaction.

On the other hand, Stoddard, Hargraves, Reed and Vratil (2001) demonstrated that physicians in solo practice tend to be more dissatisfied because they did not have colleagues immediately available with whom they could discuss patients, practice issues, administrative issues, and other concerns. These researchers used data that had previously been collected during a telephone survey of physicians. The sample included 12,385 direct care physicians. Stoddard et al. concluded that having the time to maintain adequate levels of communication with other physicians was a major determinant of job satisfaction among these physicians.

Many studies conducted with multiple disciplines, including physicians, nurses, and clinical nurse specialists, have found that increased job satisfaction is associated with improved patient outcomes, decreased cost, increased patient satisfaction, and decreased

medical errors (Flannery & Van Gaasbeek, 1998; Grembowski et al., 2003; Grindel et al., 1996). When Grembowski et al. surveyed 495 physicians; they found that offices with more than one physician, though not so large as to impose multiple bureaucratic controls on the providers, had higher levels of job satisfaction, a finding consistent with the findings of Stoddard et al.'s (2001) where physician satisfaction was positively associated with quality of care. Grindel et al. incorporated both survey techniques and focus groups into their study when they evaluated the practice environment of a large tertiary care facility. They surveyed 1,728 nurses and 173 physicians, finding a considerable degree of collaboration between physicians and nurses, which contributed to the job satisfaction of both disciplines. The common findings of these studies are that a practice environment that is conducive to collaboration and professional development has improved the job satisfaction of health professionals.

In an interdisciplinary environment, researchers have found that there is less job turnover of professionals (Bell, 2000; Demmy et al., 2002; Manderino & Berkey, 1997; Miller, 1996; 2001). Bell describes four interviews with different physicians, who after years of practice decided to leave direct patient care to assume administrative positions. Frustration with a managed care environment and opportunities outside of patient care were the reasons most often cited for leaving the job. Health care employers who assure a more interdisciplinary environment can expect to have a more stable staff and ultimately decreased turnover, which in turn decreases health care cost (Demmy et al.).

Demmy et al. (2002) surveyed 105 physicians in an academic health center regarding their job satisfaction and found that academic autonomy, relationships with department chairs and opportunities to participate in leadership development courses all

contributed to satisfaction. Their sample included physicians who were still employed as well as those who had left the institution within the previous eight years. Demmy et al. found that it cost the health center approximately \$236,000 to recruit one physician, demonstrating that satisfaction and retention have costly consequences.

Positive interprofessional relationships also correlated with good job satisfaction. Self, team and communication development all build collaborative skills, which in turn, increase the job satisfaction of nurses and physicians (McCallin, 2005). McCallin describes interprofessional collaboration and practice, and advocates for both in this descriptive study. Empirical research in this area remains limited.

Nurses' Job Satisfaction

The research that has examined nurses' job satisfaction often relates it to their interactions with physicians (Larson, Hamilton, Mitchell, & Eisenberg, 1998; Manderino & Berkey, 1997; Rosenstein, 2002; Rosenstein & O'Daniel, 2005; Verschuren & Masselink, 1997). Larsen et al. included attending physicians, nurses, and medical residents in their study where both a survey and a structured interview were completed. Although the sample was small (5 physicians, 18 staff nurses, and 12 residents), Larsen et al. determined that the perceptions of what had been communicated among these three groups often led to misinterpretations and misunderstandings of motive and meaning. The researchers concluded with the recommendation that nurses and physicians in-training should learn how to communicate effectively and work collectively. They also asserted that these skills should be incorporated into the didactic components of the curricula as well as the clinical experiences of these professionals. These researchers concluded that reducing misunderstandings and improving communication, job satisfaction can be

positively impacted.

Rosenstein (2002) conducted an e-mail survey of nurses, physicians, and hospital administrators to examine the relationship between physicians and nurses, the disruptive behaviors of physicians, institutional responses to the behaviors, and their impact on nurses' job satisfaction, morale, and retention. The survey was still ongoing at the time of the publication of their article, which contained an analysis of the first 1,200 responses. A preliminary analysis indicated that 29% of the nurses surveyed thought that improved relationships with physicians would enhance their job satisfaction. Interestingly, Rosenstein revealed that 21% of the physicians felt the same way. The nurses who participated in that study indicated that they wanted a respectful environment in which to work and for the physicians to acknowledge the importance of the nurse's role on the health care team. These dimensions of care have been previously identified as integral to interdisciplinary care. Haller (2001), in an editorial reflection of her own relationships with physicians, stated that the physicians with whom she worked valued collegiality and partnership in providing patient care.

Manderino and Berkey (1997) examined the effects of the verbal abuse of staff nurses by physicians using a mailed survey in which 90% of the 130 staff nurses who responded reported experiencing at least one episode of abuse by a physician during the previous year. This disruptive and often stressful situation for nurses frequently contributed to negative feelings regarding the work environment itself.

Like Manderino and Berkey (1997), Rosenstein and O'Daniel (2005) found that the disruptive behavior of clinicians negatively impacted job satisfaction and the retention of nurses. These researchers conducted an Internet survey of the chief medical

officers, chief nursing officers, and chief executive officers of the 50 Veterans Administration hospitals across the country. The sample consisted of 1,091 nurses, 402 physicians, and 16 administrators. Unlike Manderino and Berkey, Rosenstein and O'Daniel found a high prevalence of disruptive behaviors among nurses. These researchers also found that disruptive behaviors contributed to medical errors, delayed communication, and, in the most extreme situations, to the death of a patient. They found that disruptive behavior likely contributes to poor quality patient care, which possibly contributes to poor job satisfaction for all disciplines involved (Rosenstein & O'Daniel).

Physicians often learn these patterns of verbal abuse in medical school from being victims of abuse themselves from attending physicians, faculty, and chief residents. The cycle of negative behavior could be broken if physicians were working in a "team" *with* nurses, as they would be in an interdisciplinary environment.

Interprofessional relationships have been directly correlated with nurses' job satisfaction (Decker, 1997). Grindel et al. (1996) found that collaboration with physicians and a sense of autonomy enhanced the nurses' work environment and job satisfaction. It also improved patient care outcomes when a practice environment was satisfactory from the perspectives of patients, nurses, and physicians. These conditions were also linked to the nurses' intent to stay in their jobs.

In the Netherlands, the quality of care issue has been directly tied to collaboration between physicians and nurses. Verschuren and Masselink (1997) studied nurses, physicians, and patients, and the role perceptions of each group. Of the 294 questionnaires they distributed in their study, 33 were returned by physicians, 108 by nurses, and 105 by patients for a total of 246 returned surveys. These researchers found

considerable differences between role behavior and role concepts among the groups. These differences, they concluded, would not facilitate understanding among the groups and could contribute to low job satisfaction of both nurses and physicians. They recommended that more attention be given to the importance of collaborative practice in the education of nurses and physicians.

Job Satisfaction and Nurse Retention

The retention of nurses and the factors encouraging their continued employment have also been topics of job satisfaction research (Cummings, Hayduk, & Estabrooks, 2005; Parsons & Stonestreet, 2004). Because the recent nursing shortage has caused many hospitals to examine what contributes to nurses' degree of job satisfaction, the research on this topic has increased (Parsons & Stonestreet). Research has demonstrated that if nurses feel they have "power" in their jobs, they have improved job satisfaction and are less likely to experience burnout (Almost & Laschinger, 2002; Parsons & Stonestreet). The dominant theme in these studies is that the more empowered the nurses felt, the greater the sense of trust and respect they received, the lower their level of job strain. The quality of these relationships contributed most to the retention of staff nurses.

The 1990's saw the restructuring of many hospitals with the resultant layoffs of nurses. This pattern led to decreased job satisfaction among the nurses who remained employed, according to Cummings et al. (2005), who examined the effects of hospital reorganization on nurses' job satisfaction by using survey data that had previously been obtained in the Alberta Nurse Survey of Hospital Characteristics. Their study in particular explored how the emotional intelligence of the institution's leadership impacted the job satisfaction of the nurses who remained employed. Cummings et al.

found that the higher the level of emotional intelligence of the leadership, the more job satisfaction was reported in the nurses, despite the difficulties inherent in restructuring.

Parsons and Stonestreet (2004) found that 40% of staff nurses were dissatisfied with their working conditions. One condition causing this dissatisfaction was the quality of the nurses' relationships with physicians, nurse managers, peers, and administrators. The team relationship between health care professionals as well as their collaboration improved the nurses' job satisfaction in their study. Further, Dechairo-Marino, Jordan-Marsh, Traiger, and Saulo (2001) found a direct relationship between the level of nurse-physician interaction and coordination and the reduction of mortality rates in critical care units. Interdisciplinary practice, by definition, includes interaction and collaboration between all health care disciplines involved and can affect nurses' job satisfaction (Parsons & Stonestreet).

In a study of the impact of the nurse-physician relationship on nurses' job satisfaction and retention, Rosenstein (2002) found that poor nursing satisfaction and a corresponding shortage resulted in decreased patient satisfaction, decreased quality of care, decreased patient safety, and increased medical errors. She demonstrated a positive relationship among collaboration, patient safety, error rates, and patient outcomes.

Dodek and Raboud (2003) found that interdisciplinary rounds in an intensive care unit (ICU) improved the job satisfaction of nurses, physicians, social workers, and physical therapists. They also noted improvement in patient outcomes. These investigators determined that structure is needed in interdisciplinary rounds; otherwise the attendance of all team members was not assured. In addition, administrative support was necessary. In another study of collaboration in an intensive care unit, Miller (2001)

surveyed nurses and physicians using the ICU Nurse-Physician Questionnaire and found that greater collaboration between health care professionals was associated with higher job satisfaction and retention of nurses. In addition, the higher the level of collaboration between the two disciplines, the lower the mortality rates and lengths of stay of ICU patients.

Kenkel (2003) determined that one cause of the nursing shortage is that employers, notably hospitals, have been slow to structure the professional practice environment in a way that would retain their nurses. Several studies (Cummings et al., 2005; Freeborn et al., 2002; Verschuren & Masselink, 1997) identified a positive relationship between collaboration among nurses and physicians and improved job satisfaction in both groups of health care professionals. Freeborn et al. (2002) noted that the most important predictors of job satisfaction were collaboration and autonomy. Again, their study found that increased levels of dissatisfaction affected quality of care, patient relationships, and organizational effectiveness.

The Historical Development of the Nurse Practitioner Role

Loretta Ford and Henry Silver at the University of Colorado first introduced the concept of an advanced practice nurse in 1965 (Holmes & Osterweis, 1999). This program was started in response to the need for additional primary health care providers in the area of pediatrics. The program was directed by both a nurse and a physician, and occurred in a university setting. The courses offered were at the graduate level. Upon completion of this program the advanced practice nurses could provide care to children outside of the hospital in primary care clinics. They collaborated with their physician counterparts, and their role was supported by the American Academy of Pediatrics.

Similarly, in 1965, the American College of Obstetrics and Gynecology supported the development of the obstetrical/gynecology nurse practitioner. In 1974, the American Nurses Association (ANA) defined nurse practitioners as nurses with advanced skills in the assessment of the physical and psychosocial health-illness status of individuals, families, or communities in a variety of settings through health and developmental history-taking and physical examination.

Today nurse practitioners are prepared by formal graduate level education, which adheres to both the American Nurses' Association approved guidelines and those advocated by the National Organization of Nurse Practitioner Faculty. Today nurse practitioners are educated at the master's level.

Advanced Practice Nurses and Job Satisfaction

The literature on advanced practice nurses and job satisfaction is limited. However, one common theme found was that employers wanted to retain their best nurse practitioners. They realized that keeping them satisfied prevents costly turnover (Gauci-Borda & Norman, 2001). Health care administrators are interested in attracting and retaining qualified nurse practitioners in primary care; retention is directly linked to job satisfaction (Chung-Park, 1998).

Koelbel, Fuller, and Misener (1991a) learned that a common motivator for preparing to become a nurse practitioner is a nurse's dissatisfaction with contemporary staff nursing. These researchers used a mailed survey and included both nurse practitioners and nurse midwives in their study. With a response rate of 90%, they found that the nurse practitioners were most satisfied with the intrinsic factors of their jobs, such as achievement and responsibility, but dissatisfied with the extrinsic factors such as

salary and supervision. They used Herzberg's Dual-Factor Theory of Job Satisfaction as the conceptual framework for their study. In this theory, the intrinsic factors are those that contribute to job satisfaction, and the extrinsic factors are those that contribute to or prevent dissatisfaction. Intrinsic factors are also referred to as motivators and extrinsic factors as hygienes. What these researchers concluded was that the extrinsic needs of nurse practitioners must be fulfilled in order for them to appreciate the intrinsic rewards of their jobs.

Chung-Park (1998) surveyed Navy nurse practitioners in 29 naval hospitals in the United States and abroad. Of the 907 questionnaires she mailed, a total of 450 were returned. The nurse practitioners who responded also completed the researcher's Measure of Job Satisfaction Survey. The factors that accounted for the varied levels of job satisfaction were autonomy, acceptance, and recognition by others. The characteristics associated with dissatisfaction had to do with the incongruence in career goals, actual career path, and lack of pay. The nurse practitioners complained of feeling pulled between the Navy Nurse Corps and the Medical Corps, but not belonging to either. This issue tends to exist when there is a lack of understanding of roles, and is a common one cited by health care professionals. It is cited as a factor in the miscommunication that often occurs between nurses and physicians (Freeman et al., 2000). This issue should disappear as interdisciplinary education becomes a greater part of the educational process of future health care professionals.

The contributing factors to role satisfaction among advanced practice nurses are different than those of the nursing population in general. However, their experiences are also different. Advanced practice nurses may have autonomy, although it is often limited

by administrative policy; work in collaboration with other practitioners, and may have more time and funding for their professional development. Educationally they are prepared to deliver care independently, although often they encounter restriction of their practice by both the hospital administration and physicians. In addition, when budgets are reduced, the first benefit to be reduced is the funding for professional development. Employers' awareness of these factors is important in order to retain these valuable employees (Koelbel et al., 1991a; 1991b). Collaboration as well as professional and practice issues were highly rated as factors contributing to job satisfaction among nurse practitioners (Keith, Coburn, & Mahoney, 1998, Schiestel, 2007).

Koelbel et al. (1991a; 1991b) identified six factors of job satisfaction that affected nurse practitioners, including intrapractice partnership, professional social and community interaction, challenge and autonomy, professional growth, time, and benefits. These researchers found that intrinsic factors were more associated with job satisfaction, whereas extrinsic factors were associated with dissatisfaction, which is consistent with Herzberg's Dual-Factor Theory of Job Satisfaction (1959). Herzberg postulates that intrinsic factors are those that are related to the job itself. These factors were termed satisfiers or "motivators" because they act to enhance the job. Extrinsic factors are those that are related to the professional work environment. These factors or "hygienes" were labeled dissatisfiers because they serve only to prevent job dissatisfaction (Herzberg, 1966).

Beal, Stevens, and Quinn (1997) identified the intrinsic factors of job satisfaction among neonatal nurse practitioners as being autonomy, patient management, and relationship with colleagues and families, role diversity, and sense of accomplishment.

The most dissatisfying aspects of the job that Beal et al. identified were relationships and administrative constraints. They gathered their data using both qualitative and quantitative methods. They mailed surveys to 1,000 randomly selected neonatal nurse practitioners. To gather qualitative data, they added three open-ended questions at the end of the questionnaire. The respondents were asked to list the three most satisfying and three most dissatisfying aspects of their job. The responses to the open-ended questions supported the findings from the survey tool.

In another study, Freeman et al. (2000) found that working with “non-team” aware professionals contributed to dissatisfaction. These researchers used the case method approach to explore the issues surrounding professional interactions that either contribute to or inhibit teamwork. Six different teams were included in the study, a primary health care team, a diabetes team, a medical ward team, a neuro-rehabilitation team, a child development team, and a community mental health care team. Freeman et al. found that disparate ideas about “teamwork” resulted in misunderstanding, role confusion, and not valuing the input of other members. Working with “non-team” aware professionals contributed to dissatisfaction among “team aware” professionals, causing some team members to leave their respective teams.

Almost and Laschinger (2002) distributed questionnaires to 63 acute care nurse practitioners and 54 primary care nurse practitioners. These researchers found that when the work environment provided support for the nurse practitioner to participate in decision making, the job strain was lower. Also, when the nurse practitioners felt that they had access to the “powers that be”, they displayed positive behaviors, higher levels of morale, and a decreased resistance to change. Further, the more empowered the nurse

practitioners felt the more satisfied they were with their work.

Kacel et al. (2005) also used Herzberg's Dual-Factor Theory (1959) to study the job satisfaction of nurse practitioners. They used a descriptive correlational design to explore the factors that contribute to job satisfaction and dissatisfaction in nurse practitioners licensed in a Midwestern state. Their sample of 147 nurse practitioners completed the self-administered Misener Nurse Practitioner Job Satisfaction Scale—the same survey questionnaire used in this study of nurse practitioners and interdisciplinary practice. Kacel et al. found that the nurse practitioners were most satisfied with their sense of accomplishment, challenge in work, level of autonomy, patient mix, and ability to deliver quality care. They were least satisfied with time off to serve on professional committees, reward distribution, amount of involvement in research, opportunity to receive compensation for services outside normal duties, and monetary bonuses available in addition to salary. Kacel et al. also noted that satisfaction decreased with each year of experience but that dissatisfaction leveled off between 8 and 11 years. They also observed that in American culture, a person's educational background and higher professional responsibilities correlated with increased compensation. This was not true for nursing as a whole, and especially not true for nurse practitioners.

Tri (1991) completed a mail survey of 600 nurse practitioners licensed in the state of Washington, to explore job satisfaction and practice environment characteristics; 373 questionnaires were returned for a response rate of 61%. Using Herzberg's Theory of Job Satisfaction, Tri found that autonomy, sense of accomplishment, and time spent with patients were the top three factors that affected the nurse practitioners' job satisfaction. The highest-ranking dissatisfier was salary. Their overall job satisfaction was related to

their provision of quality health care. Low job satisfaction was associated with low morale, high turnover, low productivity, and reduced quality of care.

Kaas, Dehn, Dahl, Frank et al. (2000) surveyed 73 psychiatric clinical nurse specialists with prescriptive authority (clinical nurse specialists in Pennsylvania do not have this authority) and their collaborating psychiatrists. They found that the more collaboration that occurred among clinicians and nurses, the more patient outcomes improved. There was improved continuity of care, better access to providers, added patient education, and better patient follow-up. Kaas et al. received responses from 31 matched dyads. The results also indicated that the clinical nurse specialists were satisfied with the collaboration they had with the psychiatrist with whom they worked. Interestingly, the psychiatrists felt the same way. Freeborn et al. (2002) studied primary care providers, (i.e., nurse practitioner, physicians' assistants, and primary care physicians) and found that autonomy and collaboration were again the most important factors in the prediction of job satisfaction.

Chapter Summary

As the research suggests, the changing demands of the health care system with its increasing medical error rates, increased costs, and decline in quality of care can be partially met by the use of interdisciplinary practice in health care delivery. Research supports the connection between job satisfaction and collaboration and autonomy. Collaboration, intimate and vital to interdisciplinary practice, was cited on multiple occasions as paramount to job satisfaction (Flannery & Van Gaasbeek, 1998; Freeborn, 2001; Freeborn & Hooker, 1995; Grindel et al., 1996; Kaas et al., 2000; Keith et al., 1998; Koelbel et al., 1991a; 1991b; Miller, Apold, Baas, & Levin-Brill, 2005;

Rosenstein, 2002; Stoddard et al., 2001; Verschuren & Masselink, 1997). Even though collaboration was identified as central to job satisfaction as early as 1991, it is still not the norm in clinical practice. At the same time, autonomy has been cited frequently as essential to job satisfaction (Almost & Laschinger, 2002; Beal et al., 1997; Chung-Park, 1998; Flannery & Van Gaasbeek, 1998; Freeborn et al., 2002; Grindel et al., 1996; Kacel et al., 2005; Koelbel et al., 1991a; Parsons & Stonestreet, 2004; Tri, 1991). It is interesting to note that it is the lack of autonomy that motivates nurses to pursue additional education and advanced practice (Koelbel et al., 1991a).

The factor most often associated with job dissatisfaction was and is salary (Kacel et al., 2005; Koelbel et al., 1991a; 1991b; Tri, 1991). According to Herzberg's Dual-Theory of Job Satisfaction, dissatisfiers or hygienes can contribute to job dissatisfaction, but eliminating them does not necessarily make one satisfied with their job. As early as 1974, McCloskey found that psychological rewards such as opportunities to attend educational programs, career advancement other than to the head nurse position, and recognition of work from peers and supervisors were more important than salary in terms of job satisfaction and retention of the nursing staff. What she also found was that although the nurses were not satisfied with their salaries, they did not base their decision to stay or leave on money. The incorporation of interdisciplinary practice will not address the issue of salary but will incorporate the aforementioned characteristics that McCloskey found to be more important than salary in terms of job satisfaction.

Another common area of dissatisfaction had to do with the relationships between health care providers across disciplines (Bell, 2000; Larson, DeBasio, Mundinger, & Shoemaker, 1995; Manderino & Berkey, 1997; Parsons & Stonestreet, 2004; Rosenstein,

2002; Rosenstein & O'Daniel, 2005; Verschuren & Masselink, 1997). Interdisciplinary practice can impact this perspective on the work environment in a positive manner. It should promote improved relationships and better understanding of roles and expectations, two other areas of job dissatisfaction (Freeman et al., 2000).

There is also evidence that increased job satisfaction is positively associated with improvement in patient care, decreased medical costs, and decreased medical error rates. However, there has not been any research that specifically addresses the relationship of the job satisfaction of the health care professional with interdisciplinary practice. According to McCallin (2005), “. . . when health professionals from various disciplines work well together, client outcomes and job satisfaction may improve” (p. 35).

Based on the literature, we know what contributes to and what hinders job satisfaction. Knowing that interdisciplinary practice encompasses the attributes most often found to contribute to job satisfaction, we can then postulate that an interdisciplinary practice environment should improve the job satisfaction of nurse practitioners though there are no research studies that have demonstrated such a correlation. Therefore, this study was designed to explore the relationship between participation in interdisciplinary practice and the job satisfaction of nurse practitioners in the state of Pennsylvania. This was the first time that this relationship has been examined.

Chapter 3

RESEARCH METHODS

This chapter describes the research methods chosen to conduct this study which explored the relationship between interdisciplinary practice and job satisfaction in a sample of the nurse practitioner population of Pennsylvania. The sections of the chapter include the research design, sample, measures, pilot testing, and plan for data collection.

There has been considerable research on professional job satisfaction but little exploration of the job satisfaction of the population of interest in this study, nurse practitioners. There are no empirical data that link professional job satisfaction and interdisciplinary practice in any population of health care professionals.

To address this need, the Misener Nurse Practitioner Job Satisfaction Scale was administered to measure job satisfaction in a sample of nurse practitioners in this study. This instrument had not been used as an online survey prior to this study. Permission to use the instrument via the Internet was granted by the developer (T. Misener, personal communication, October 2, 2006).

In a review of the literature, only one instrument that measured interdisciplinary practice was found. There was an ongoing project by Penieks to develop a tool to measure a form of team practice, but it was still in the pilot-testing phase at the time of this research. Penieks provided a draft copy of the instrument to the researcher of this study, who after reviewing the instrument, discovered that although it contained some questions that address interdisciplinary practice, it was geared to “in hospital” care providers and did not include nurse practitioners (V. Penieks, personal communication, October 2, 2006). Therefore, to gather the data regarding interdisciplinary practice and

nurse practitioners, this investigator used the Index of Interdisciplinary Collaboration (Bronstein, 2002), which had been primarily used with social workers, as it was the only published tool available.

Research Design

A descriptive correlational survey design was chosen for this study. This design allowed the researcher to ascertain the relationship between job satisfaction and interdisciplinary practice, fulfilling the purpose of this study. There was no manipulation or attempt to control the situation in which these variables were already occurring; a characteristic of descriptive correlation designs (Burns & Grove, 2007).

The use of the Internet allowed for data collection from a large sample in a rapid and economical manner (Dillman, 2000). In addition, the nurse practitioner listserv that was accessed for this study had already been constructed, so e-mail addresses did not need to be entered individually by the researcher. Finally, all data collected were immediately analyzed because they were automatically entered into the statistical software package as each respondent submitted their survey. This alleviated the need for manual data entry, a step common to survey research. An additional benefit of this electronic method of data collection was that there was no opportunity for error in the data entry.

It was thought that characteristics of the sample, if large enough, would allow for some generalization to the population of interest, although random sampling would not be employed (Burns & Grove, 2007). The sample would represent one-sixth of the nurse practitioners in Pennsylvania. A limitation to consider, however, was that there could be some bias that motivated certain nurse practitioners to subscribe to the listserv that set

them apart from the nurse practitioners who did not subscribe. To address this limitation, the investigator also sent an invitation postcard to every sixth nurse practitioner on the mailing list provided by the State Board of Nursing. The listserv respondents were contacted via the Internet and the postcard invitation contained the URL that could be entered into a search engine to take potential respondents directly to the online survey. Both the invitational letter and the postcard explained the incentive employed in this study, a raffle which respondents could enter for a chance to win one of 5 \$100 gift certificates to Amazon.com. If the respondent elected to participate in the raffle, they were taken to a separate survey that requested their personal information; this survey could not be linked to their study survey.

Sample

The sample for this survey project was a non-probability sample of convenience. Potential respondents were accessed through the listserv supported by the Pennsylvania Coalition of Nurse Practitioners (PCNP) and by the mailing list purchased from the Board of Nursing by the investigator. There were 1,079 nurse practitioners subscribed to the listserv at the time of the study (M. Ashby, personal communication, September 25, 2006). A monthly e-mail is posted whereby the subscribers are reminded that they may remove themselves from the listserv at any time; consequently membership is voluntary. Permission to survey these potential respondents was obtained from the president of the Pennsylvania Coalition of Nurse Practitioners (M. Ashby, personal communication, September 25, 2006), and reconfirmed by the president of PCNP (P. Schwabenbauer, August 12, 2007).

It should be noted that nurse practitioner students may also subscribe to the

listserv. Therefore, to be sure that only licensed nurse practitioners replied to the survey, the first three questions addressed the inclusion criteria. These criteria were that the respondent be a licensed nurse practitioner in the state of Pennsylvania, working in that role, and have had six months of nurse practitioner experience.

In order to determine sample size, this researcher reviewed previous research relating to job satisfaction and nurse practitioners. Cohen (1988) defines effect size as “. . . the degree to which the phenomenon is present in the population” or the “degree to which the null hypotheses is false” (p. 9). He states that to select an effect size for a study, one should review previous studies to determine what effect size one should expect when examining the variables under study. Only two previously published studies had been done using the Misener Nurse Practitioner Job Satisfaction Scale. After reviewing the findings of those studies, an effect size of .30 was chosen for this investigation (Kacel et al., 2005; Misener & Cox, 2001). Lipsey (1990) reports the following ranges for effect sizes: small from .00 to .32, medium from .33 to .55 and large from .56 to 1.20. This effect size falls at the upper end of the range for small effect sizes (Lipsey).

In order to adequately examine the relationship between job satisfaction and interdisciplinary practice a sample size of 348 was determined to be necessary. A standard power level of .80 was chosen as it is considered the minimum necessary for a study to be considered adequate (Polit & Beck, 2004). The conventional standard of .05 for committing a Type I error was selected as the level of significance for this study. The sample size was calculated based on the effect-size figures just given (Lipsey, 1990). Pearson product-moment correlations will be computed on the composite job satisfaction scores with composite interdisciplinary practice to assess for a relationship.

The potential respondents for this study were accessed through an already well-established and regularly-used listserv and the most current mailing list from the state nursing board.

Ethical Considerations

Prior to conducting this study, the investigator obtained the approval of the Institutional Review Board at The Pennsylvania State University. Each participant was informed by a pre-notification e-mail (See Appendix F) that his or her participation was voluntary and that completion of the survey implied consent. No identifying data were collected in order to maintain the anonymity of the respondents. The returned survey data were stored on the researcher's office computer and protected by a secure password. Data would be reported in an aggregate manner and never individually. With the SurveyMonkey software, the e-mail address of the respondent did not appear when the survey was submitted. Therefore, it was not possible to link the individual respondent with their particular survey, thus preserving the respondent's anonymity.

SurveyMonkey also has a privacy policy that is published on their Web site. The policy states that they employ a third party firm to conduct daily audits of their security and that the data collected are stored behind the latest in firewall and intrusion prevention technology. They offer the option of adding a Secure Sockets Layer (SSL) so that all data are collected in an encrypted environment. This additional feature was employed at the time of the survey administration in this study.

According to Im and Chee (2002), there are five ethical issues that need to be considered when undertaking an Internet research project. The first is anonymity and confidentiality. The only way to link a respondent to their survey would be by their

individual IP address. This information is held by the webmaster. This ethical issue was addressed in this study by the built-in security of the software that was used to construct and administer the survey. Responses to the survey were sent to SurveyMonkey, and when the surveys were submitted, the respondents e-mail was not attached. Therefore, there was no way to trace from where the survey was sent. This assured that the participants in the study would remain anonymous.

The second ethical issue to consider was security (Im & Chee, 2002). A communication from SurveyMonkey stated that data would be kept on a locked caged server. Entry to the server requires a pass card and biometric recognition. They have controls for temperature, humidity, and smoke/fire detection. The systems are backed up internally every hour and are backed up every night to a centralized backup system, with offsite backups in the event of a catastrophe.

The third ethical issue was self-determination and authenticity (Im & Chee, 2002). With Internet research, the ethical issue of self-determination is actually enhanced because the respondents can ask e-mail questions and get responses faster than with traditional paper, mailed survey methods. The respondents could also determine the time of their participation in the survey. However, one limitation of this method of survey administration is the determination of authenticity, although no more difficult than with mailed surveys. For the purposes of this study, the cover letter was electronically sent to the participants and contained all the contact information, including the investigator's e-mail address. They were also able to respond to the survey any time during the two weeks the survey remained available on the Internet.

The fourth ethical concern was full disclosure (Im & Chee, 2002). The

introductory letter contained a thorough explanation of the study as well as contact information should the respondent have any questions. (See Appendix G.) In addition, the respondent could exit the survey at any point.

The final ethical issue was fair treatment. This relates to unintentional exclusion of some members of the population of interest (Im & Chee, 2002), the nurse practitioners in the state of Pennsylvania. All nurse practitioners enrolled on the listserv maintained by the Pennsylvania Coalition of Nurse Practitioners were to be surveyed. However, in order to reach a random sample of all nurse practitioners in the state of Pennsylvania this investigator sent a postcard invitation to every sixth nurse practitioner on a mailing list purchased from the State Board of Nursing. There is a possibility that some of the nurse practitioners who received a postcard knew the investigator either personally or professionally and therefore were more likely to participate.

Measures and Internet Administration

Three measures were administered via the Internet in this study: the Misener Nurse Practitioner Job Satisfaction Scale (Appendix A), Bronstein's Index of Interdisciplinary Collaboration (Appendix B), and the researcher's own demographic survey (Appendix C).

The use of online surveys has been increasing, especially in the fields of business, health, and social science (Morris, Fenton, & Mercer, 2004). The disadvantages first encountered with this method of survey distribution included lack of respondent familiarity with computers and the Internet, differences in software packages, fewer individuals with Internet access, and lack of flexibility in developing Internet survey tools (Bonometti & Tang, 2006). These disadvantages have become less of an issue as more

individuals have gained access to computers, survey software has improved, access to the Internet has widened, and the Internet connection methods have become faster (Miller, 2001).

For the purpose of this study, the potential respondents were familiar enough with the Internet as they had already enrolled themselves in the listserv that was used to distribute the survey. The listserv communicates and disseminates information to the membership on a regular basis. On a monthly basis, an e-mail is sent to each subscriber reminding them that they can remove themselves from the listserv at any time, and the procedure to do so is included in the body of the e-mail. Those who completed the survey after entering the URL were taken directly to the survey and did not interact with the listserv.

The advantages of online surveys include the ability to rapidly transmit the survey; shorten the time needed for completing data collection; avoid errors in data entry; survey an entire population; gather relatively large amounts of data; use complex skip patterns; design attractive forms which may increase response rate; and facilitate real-time correction in order to improve the accuracy of responses (Morris et al., 2004). Although not all nurse practitioners in the state of Pennsylvania subscribe to this listserv, approximately one sixth does. At the time of the study, there were 6,150 licensed nurse practitioners in Pennsylvania (D. Miller, personal communication, July 5, 2006). There were 1,079 subscribers to the listserv, although not all were licensed nurse practitioners since student nurse practitioners could also subscribe (M. Ashby, personal communication, September 25, 2006). The breakdown of subscribers was not available to the investigator (C. Schmeltz, personal communication, August 13, 2007).

The criteria for online surveys are that they be short, simple, easily accessible, easy to complete, and anonymous. Surveys can be either embedded in an e-mail, sent as an attachment, or in the form of a Web-based survey. For the purpose of this study, the survey was embedded in the e-mail and accessed via a hyperlink or by direct entry of a URL. After clicking on the hyperlink to access the survey, the participant would complete the survey and submit their responses. The data would then be entered directly into the Statistical Package for the Social Sciences (SPSS 17.0, 2008).

According to Dillman, Torta, and Bowker (1999), there are three important criteria to consider when constructing Internet surveys. The first is to remember that all respondents will not have access to advanced programming features. The use of SurveyMonkey does not require the use of advanced programming to open, respond to, or submit surveys. All potential respondents self-enroll on the listserv, demonstrating that they have basic computer skills and access to computers capable of handling basic functions. The second criterion is the importance of taking into account the logic of how computers operate and how people expect questionnaires to operate. For the purposes of this study, the questionnaires were similar to the paper versions and did not include any sophisticated computer operations. The third criterion deals with the construction of surveys and remembering to take into account that mixed methods may be considered for administration. The survey tool that was selected to measure job satisfaction for this study had only been administered via a paper format that had been mailed to potential respondents. Misener's Nurse Practitioner Job Satisfaction instrument had not been constructed specifically for the Internet, but was easily adapted to it with the use of the SurveyMonkey software. On the other hand, the demographic questionnaire constructed

by the investigator was developed specifically for use on the Internet. The Index of Interdisciplinary Collaboration was also easily adapted for the Internet and looked the same as the paper form.

Dillman et al. (1999) had also developed 11 basic principles that should be adhered to when constructing a Web-based survey. They include (a) introduce the survey with a motivational welcoming screen which should include easy-to-follow instructions; (b) begin the survey with a question that is fully contained on the first screen, is easy and can be answered by all; (c) present questions in a visual format, numbered and as closely resembling the paper questionnaire as possible; (d) limit the length of each question so that it does not extend beyond the length of the screen; (e) be sure to provide specific instructions on how to take each necessary computer action to respond; (f) provide this instruction as part of each question where the action is to be taken; (g) do not require the respondent to provide an answer to each question before being allowed to move to the next question, as this can lead to premature termination; (h) be sure the questions scroll easily from one to the next; (i) when the number of answers exceeds what can be displayed on the screen, consider alternatives, perhaps combinations of answers; (j) use symbols or words to give respondents an idea of where they are in the completion process, and (k) avoid using questions that have known measurement problems on the paper version of the questionnaire.

All 11 of Dillman's principles were taken into consideration when Misener's paper survey was adapted for the Internet for this study. Initially, an e-mail pre-notification was sent via the listserv to make subscribers aware that they would soon be receiving an invitation to participate in an online survey. This introductory e-mail letter

of invitation was motivational and provided instruction for responding to and submitting the survey. It contained a hyperlink directly connecting the respondent to the survey. The first three questions of the survey addressed the inclusion criteria and were basic, simple straightforward questions. The electronic survey for this study was quite similar to the paper version in appearance. All questions were numbered, appeared in the same order as the paper version, and the Likert-type response scale was displayed in the same manner. In the paper version, the respondent checked the circle that corresponded to their response; in the electronic version they used a radio button. None of the questions were too long as to not fit on the screen, and all questions except one were answered with the use of a radio button. That one required a single-item response and a text box was immediately available.

Although the respondent did not need to answer one question to proceed to the next, they would be required to answer all questions before they could submit the survey. They could move back and forth freely in the survey as they desired. There were no specific divisions in the survey, and the respondents could scroll from one question to the next. All answer options fit easily on the screen and did not require page advances. Prior to the demographic questions, there was an introductory sentence that let the respondents know they were near completion. It was, “Finally, I’d like to ask you a few questions about yourself.”

The paper version of Misener’s Nurse Practitioner Job Satisfaction Scale has established reliability and validity data. To date, there have been two published studies using this tool. The interdisciplinary tool has established reliability and validity data as well but had only been administered in paper form prior to this study. The demographic

tool devised by the researcher for this study had not been previously administered; therefore, she pilot tested the protocol for the administration of the three combined surveys, which allowed errors in the administration process to be identified and corrected.

The cost savings of an Internet survey versus a mailed survey is realized in the form of time spent entering data, the cost of mailing, and the cost of paper. Conveniently, the survey for this project was sent to nurse practitioners already enrolled in the Pennsylvania Coalition of Nurse Practitioners' listserv. There were 1,079 nurse practitioners subscribed to this listserv at the time of the study (M. Ashby, personal correspondence, September 25, 2006). This represented approximately 17% of the nurse practitioner population in Pennsylvania at the time. Therefore, no personal time would be required by the researcher to enter e-mail addresses to distribute the survey, and the data could be transferred directly to the statistical software for analysis, eliminating the need for laborious, manual data entry, in addition the accuracy of the data is assured.

Response rates for online surveys have varied from as low as 7% to as high as 87% for Web-based surveys (Morris et al., 2004). Techniques used to improve response rates for Web-based surveys include e-mail pre-notification, a personalized e-mail cover letter, and follow-up reminders (Morris et al.). Researchers have also found that if the topic is of interest to the respondents, the response rates increase (Ilieva, Baron, & Healey, 2002).

In order to maximize the response rate for this project, a pre-notification e-mail (See Appendix F) was sent to all the nurse practitioners on the listserv, alerting them that they would be receiving an introductory e-mail letter of invitation (See Appendix G) inviting them to participate in a survey regarding job satisfaction among nurse

practitioners and their experience with interdisciplinary practice. The introductory letter contained a hyperlink that took the respondents directly to the survey. The introductory letter was sent three days following the pre-notification e-mail. This is a time frame that other researchers have identified as appropriate (Couper, Traugott, & Lamias, 2001; Dillman, 2000; Morris et al., 2004). This short time frame also increases the likelihood that respondents will connect the memory of the pre-notification with the invitation to participate in a survey (Couper et al.). In addition, the incentive, an opportunity to have one's name placed in a raffle for the chance to win one of five \$100 gift certificates to Amazon.com, was offered and explained in both the introductory letter and on the postcard.

Illieva et al. (2002) identified two weeks as the average time that surveys should remain posted on the Internet for data collection. In addition, they found that most responses were received within 5.56 days and that continued posting of the survey did not improve response rates. In keeping with these findings, this survey was posted for two weeks, with a reminder being sent after one week to encourage those who had not responded to do so. Given the length of time this survey was accessible and the reminder sent, the response rate would be optimized (Dillman, 2000; Morris et al., 2004).

In addition to the Internet strategies used to improve response rates, the researcher hoped to attend as many chapter meetings of the Pennsylvania Coalition of Nurse Practitioners as possible to encourage participation in the survey, addressing attendees personally in an attempt to make the survey more personal. The local chapters meet monthly. When the researcher was unable to attend these meetings, she contacted the chapter's president and asked him or her to remind members about the survey and ask

them to respond.

Figure 3.3 depicts the procedure this investigator followed in order to collect the

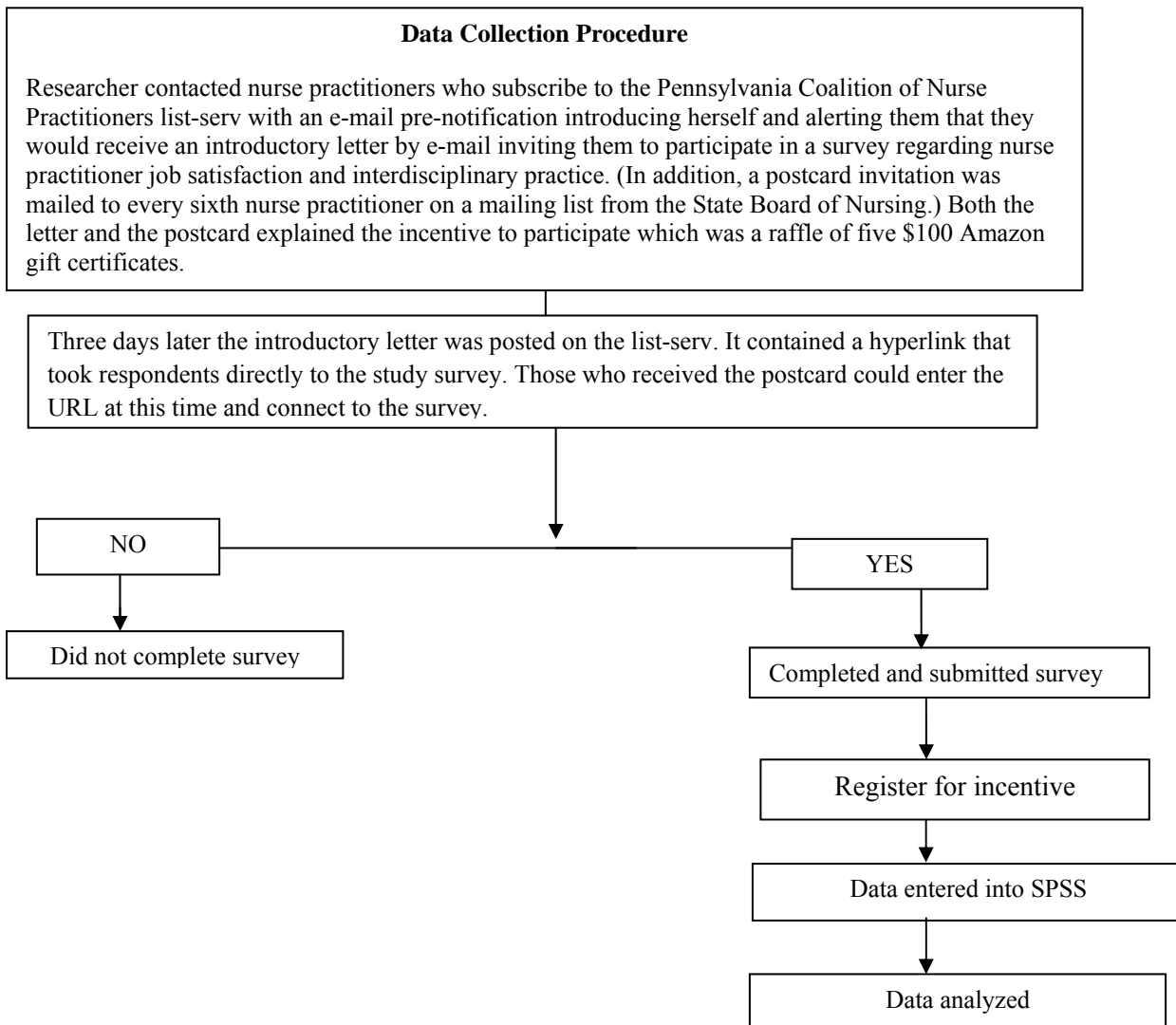


Figure 3.1. Data collection procedure.

Misener's Nurse Practitioner Job Satisfaction Scale

Part of the data for this study was collected using the Misener Nurse Practitioner Job Satisfaction Scale (Misener & Cox, 2001). Misener and Cox did a thorough review of the literature and were unable to find a valid and reliable tool to measure job satisfaction in nurse practitioners. Therefore, they modified an existing tool developed by Mueller and McCloskey (1990) to better reflect primary care. After Misener and Cox modified their draft instrument, it was reviewed by a nurse practitioner faculty and practicing nurse practitioners for content validity.

The Misener Nurse Practitioner Job Satisfaction Scale originally contained 77 items. Responses ranged from “very satisfied” to “very dissatisfied.” A single item to measure global job satisfaction was added prior to the testing of the instrument. The authors of the scale administered the survey to a sample of 1,117 nurse practitioners from two contiguous southern states. The number of respondents who agreed to participate was 413, and 342 completed and returned their surveys for a final response rate of 83%. An exploratory factor analysis was done to reduce the number of items to the most parsimonious level. For the purpose of Misener and Cox’s study, a factor was required to have three items load on it in order to be retained. The final instrument consisted of 44 items covering six different factors.

A second study utilizing the Misener Nurse Practitioner Job Satisfaction Scale was conducted by Kacel et al. (2005). The purpose of their study was to describe the level of nurse practitioner job satisfaction in one midwestern state. Their sample was randomly selected from a list of licensed nurse practitioners in that state. They sampled 250 nurse practitioners with a final sample of 147 and a response rate of 63%.

Reliability of the Misener Scale.

The Misener Nurse Practitioner Job Satisfaction Scale consists of 44 questions with responses based on a scale of 1-6, with 1 being “very dissatisfied” and 6 being “very satisfied.” Respondents are asked to rate the items based on their position. In the paper version of the tool, the respondents are asked to circle their response. The questions are grouped under six different factors: intra-practice partnership/collegiality; challenge/autonomy; professional, social and community interaction; professional growth; time; and benefits. The questions are not arranged in the instrument according to each factor, rather they are grouped at the time of scoring.

This tool has established reliability and validity. The most often used measure of internal consistency is Cronbach’s alpha (Polit & Beck, 2004). This coefficient has a value between .00 and +1.00, with higher values reflecting a stronger internal consistency. Cronbach’s alpha reliability estimates for each of the six subscales are: .94, .89, .84, .86, .83, and .79 for intra-practice partnership; professional, social, and community interaction; challenge/autonomy; professional growth; time, and benefits, respectively. The reported Cronbach alpha for the entire tool was .96 (Misener & Cox, 2001). These reliability estimates supported the use of this tool for this study.

Kacel et al. (2005) did not report an alpha for the entire instrument, but the alphas they reported for the six factors were similar to those reported by Misener and Cox. Factor 1 (intra-practice/collegiality) .94; factor 2 (challenge/autonomy) .89; factor 3 (professional, social, and community interaction) .81; factor 4 (professional growth) .86; factor 5 (time) .81; and factor 6 (benefits) .77. (See Table 3.1) The sample for Kacel et al.’s study consisted of 147 licensed nurse practitioners from a midwestern state.

The reliability statistics for the Misener Nurse Practitioner Job Satisfaction Scale remained consistent in this investigation. The reliability reported in the present study was .974. This finding demonstrates the internal consistency of the instrument. A comparison between the published reliability coefficients and those reported in this investigation are shown in Table 4.9.

Validity of the Misener Scale.

Misener and Cox (2001) undertook an exploratory factor analysis to reduce the number of instrument items to the most parsimonious level possible during the initial development of their job satisfaction survey. The maximum likelihood estimate was used to extract the actual factors, which was followed with a promax rotation, and the process was stopped with six factors. For the purposes of their study, an item was considered to load on a given factor if the factor loading was .35 or greater for that factor and was less than .35 for any other factor. The original survey consisted of 77 items however, after factor reduction thirty- three items were eliminated. Factors were only retained if three items were found to load on it.

Scoring of the Misener Scale.

The Misener Nurse Practitioner Job Satisfaction Scale uses a 6-point Likert-type scale, which ranges from 1 for very dissatisfied to 6 for very satisfied. Possible scores range from 44 to 264 and are obtained by summing the responses for each of the 44 items. None of the items are reverse scored (Misener & Cox, 2001). There are 14 items in factor 1; 10 items in factor 2; 8 items in factor 3; 5 items in factor 4; 4 items in factor 5; and 3 items in factor 6. The items are grouped at the time of scoring.

Internet Administration of the Misener Scale.

Prior to the present study, the Misener Nurse Practitioner Job Satisfaction Scale had not yet been administered via the Internet. Permission from the tool's developer was obtained to use the SurveyMonkey software and to adapt the instrument for Internet administration (T. Misener, personal communication, October 2, 2006). The primary goal when adapting a pre-existing paper survey to a Web-based survey is to keep the instrument as similar to the original as possible (Smyth, Dillman, Christian, & Stern, 2004). There are, however, certain characteristics of the Internet that need to be taken into consideration during this adaptation process. For the purpose of this project, radio buttons were used for responses to most questions. The use of radio buttons limits the respondents to only one answer choice per question and will not allow a respondent to submit an incomplete questionnaire (Smyth et al.). The buttons are also considered easier than drop-down boxes because they only require one click of the computer mouse (Couper, Blair, & Triplett, 1999). Radio buttons are also recommended if answer responses are limited to six or fewer. If more than six choices are potential responses, then drop-down boxes are the recommended choice (Bonometti & Tang, 2006). All questions on this survey had six possible responses.

Bronstein's Index of Interdisciplinary Collaboration

After a thorough review of the literature, the researcher in the present study found an interdisciplinary tool, the Index of Interdisciplinary Collaboration (IIC), which had been developed by Bronstein (2002), who had studied the interdisciplinary activity between social workers and other professionals. Bronstein had developed this tool after reviewing the literature and not finding an instrument to measure interdisciplinary

collaboration.

Bronstein's (2002) study of the literature determined that there were five core components of collaboration. The first is interdependence and refers to the interaction between professionals whereby each is dependent on the others in order to accomplish their goals. The second, newly created professional activities, refers to the interaction that occurs between professionals whereby they can accomplish more collectively than they could alone. The third core component is flexibility, which is the intentional role-blurring that occurs across disciplines. This allows productive compromises to be reached when there is disagreement between two of the providers. The fourth core component is collective ownership of goals. Shared goals and shared responsibility to achieve those goals requires a commitment from each of the professionals. The final core component is reflection on the process. Members of the team reflect on how they have been working together and then include feedback to improve the process as they go along.

Bronstein's Test of IIC's Validity.

Bronstein (2002) pilot tested her interdisciplinary practice tool with a convenience sample of 30 master of social work students. These graduate students then participated in focus groups to provide feedback. In this manner, Bronstein established face validity. After the feedback had been incorporated into the instrument, it was administered to a random sample of 1,000 members of the National Association of Social Workers. The social workers not working with with other professionals were excluded. The response rate was 47%.

Test of the IIC's Psychometric Properties

The psychometric properties of the IIC were tested in the following manner: test-

retest reliability, factor analysis, internal consistency, and tests for validity (Bronstein, 2003).

The test-retest was calculated by a Pearson product-moment correlation coefficient on the scores of graduate social work students. The test was administered and re-administered two weeks later. The correlation was .824 ($p < .01$) (Bronstein, 2003). This substantiates the stability of the tool over time.

Factor analysis was used to determine how well the items clustered around the five factors of collaboration. The results of the analysis were that seven items did not load on any of the factors, hence were excluded from the analysis. To further determine the multidimensionality of the Index of Interdisciplinary Collaboration, correlations among the factors were run. These correlations ranged from .471 to .680, demonstrating a moderate support of the multidimensionality of the instrument (Bronstein, 2002).

The internal consistency of the IIC was analyzed using Cronbach's alpha. When all 49 items were included, the reliability had an alpha of .92. A second analysis was done, removing the seven items that did not load on the factor analysis, and the alpha remained the same, .92. Bronstein then decreased the number of items on the index to 42.

To assess construct validity, the relationship between the demographic variables and all 49 items of the original index were measured. No significant relationship was found. Then the relationships between the 49 items and the factors of interdisciplinary collaboration were measured. Professional affiliation was significantly correlated with a $p < .01$. Structural-organizational characteristics were also significant with a Pearson product-moment correlation coefficient of $p < .01$. Personal characteristics and relationships among the collaborators were statistically significant with a $p < .01$. Finally,

the history of collaboration was also significant with a $p < .01$ (Bronstein, 2002).

Parker-Oliver et al. (2005) used the IIC to measure the relationship between certain variables and teamwork on hospice teams. They used a mailed survey that included an introductory letter and the IIC. The respondents could either mail back the survey or fax in their response. These researchers reported a response rate of 52.7% after a second reminder was mailed.

The Researcher's Demographic Questionnaire

The third instrument for this study was an investigator-developed demographic questionnaire. The demographic items included the respondents' gender, years of practice as a registered nurse (including years as a nurse practitioner), years of practice as a nurse practitioner, educational level, and the setting in which they provided care. These variables were chosen because previous studies found them to influence job satisfaction (Kacel et al., 2005).

In addition, the zip code of the practice site of the respondent was also collected. By gathering this information, the principal investigator could determine whether the practice was in an urban or rural setting. It would also allow the researcher to determine which areas of Pennsylvania were represented and if the entire state was represented in the sample. This questionnaire did not produce a score but informed the researcher about the practice and personal characteristics of the sample.

Variables

The dependent variable for this study was job satisfaction. It is defined conceptually (See also Chapter 1) as a multidimensional affective outcome resulting from the interaction of an employee's expectations, values, environment, and personal

characteristics; it is recognized that satisfiers and dissatisfiers are dynamic and relative to the employee (Misener & Cox, 2001). It is operationally defined by the score the respondent received on the Misener Nurse Practitioner Job Satisfaction Scale. There are 44 items on the questionnaire, which are divided into 6 factors, each being scored independently; the overall score is arrived at by totaling all 44 items. These 6 factors are Intra-practice partnership/collegiality with a possible score of 84 (14 items); challenge/autonomy with a possible score of 60 (10 items); professional, social, and community interaction with a possible score of 48 (8 items); professional growth with a possible score of 30 (5 items); time with a possible score of 24 (4 items); and benefits with a possible score of 18 (3 items). Each of these factors was examined as a dependent variable. These factors are operationally defined by selected items on the scale. The alpha coefficients for each of the factors as well as the total instrument are provided in Table 3.1.

Although the developer of the Misener Nurse Practitioner Job Satisfaction Scale did not conceptually define each of the factors, the definitions can be conceptualized by the items that fall within that factor. The intra-practice partnership and collegiality factors contain items that primarily deal with respect for opinions, recognition from supervisors, ability to offer criticism constructively, and monetary issues. Factor two, challenge and autonomy, represents areas that deal with opportunities to expand procedural skill, level of autonomy, and flexibility in practice protocols. Factor three, professional, social and community interaction, addresses the social contact one has at work and with colleagues after work, an individual's status in the community, professional interaction with other disciplines, and acceptance and attitudes of physicians outside the nurse practitioner's

practice. Factor four, professional growth, encompasses items that reflect opportunities for professional growth, advanced education, and research. Factor five, time, relates to time allotted for direct patient care, answering messages and returning phone calls, as well as time to review diagnostic test results. The final factor, benefits, includes items that specifically address vacation, leave, retirement, and benefit plans.

Pilot Testing of the Study Instruments

After receiving approval from the Institutional Review Board of The Pennsylvania State University, the researcher conducted a pilot test of the instruments and procedures for the data collection. For this purpose, the investigator recruited nurse practitioners from the academic, practice, and administrative areas who were known to her—six participants in all.

The pilot sample was electronically contacted and received the cover letter that contained the hyperlink to the surveys. The data collection procedure was the same as for the actual study. After the sample responded and submitted their surveys, the data were sent to SurveyMonkey and directly entered into the SPSS. The preliminary data analysis was available to the investigator almost immediately. With this method, the electronic and procedural problems could be identified and corrected. After each respondent had submitted their survey, they were asked to e-mail the investigator with comments on the procedure, the surveys, and the length of time it took to complete them. The input from each participant was taken into consideration prior to the actual study. Some of the suggestions by the expert panel included items the investigator was unable to change, such as adding the category of “not applicable” to each of the surveys. Another difficulty encountered was that one expert was unable to connect to the survey; after the researcher

contacted the software company, that issue was resolved. However, the researcher was e-mailed by two other individuals who participated in the study with the same concern. The researcher sought the help of the software company and both participants were then able to link to the survey.

Data Analysis Procedure

After the issues and problems discovered during the pilot study were corrected, the data were collected from the study sample via the SurveyMonkey software and directly loaded into SPSS. Support from SurveyMonkey to facilitate this direct download of data was obtained from their Help Web site. The data collection matrix (See Table 3.2) contains detailed information regarding each survey question, the concept the questions addressed, and the level of measurement it represented. The level of significance for this study was set at .05.

The researcher contacted the operators of the listserv to facilitate the administration of the surveys. The Pennsylvania Coalition of Nurse Practitioners was supportive of this endeavor, and a letter from the coalition president reflecting this was provided to the investigator (See Appendix H). In addition, personnel in the Outcomes Research Office of The Pennsylvania State University, Milton S. Hershey Medical Center, agreed to provide technical support. The Institutional Review Board of the Pennsylvania State University granted approval for this study (Appendix C).

Contact information was provided to potential participants in the cover letter from the investigator as approved by the Institutional Review Board of the Pennsylvania State University. Any potential respondent with questions was able to reach the investigator for clarification if necessary. Participation in this project was purely voluntary.

Table 3.1***Data Collection Matrix***

Question #	Concept	Level of Measurement
<u>Index of Interdisciplinary Collaboration</u>		
1.	I utilize professionals from other disciplines for their particular expertise.	Ordinal
2.	I consistently give feedback to other professionals in my setting.	Ordinal
3.	Other professionals in my setting utilize my expertise for a range of tasks.	Ordinal
*4.	Teamwork with professionals from other disciplines is not important in my ability to help students.	Ordinal
*5.	My colleagues from other professional disciplines and I rarely communicate.	Ordinal
6.	The colleagues from other disciplines with whom I work have a good understanding of the distinction between my role and their role(s).	Ordinal
*7.	My colleagues from other disciplines make inappropriate referrals to me.	Ordinal
8.	I can define those areas that are distinct in my professional role from that of professionals from other disciplines with whom I work.	Ordinal

- | | | |
|------|---|---------|
| 9. | I view part of my professional role as supporting the role of others with whom I work. | Ordinal |
| 10. | My colleagues from other disciplines refer to me often. | Ordinal |
| *11. | Cooperative work with colleagues from other disciplines is not a part of my job. | Ordinal |
| *12. | My colleagues from other disciplines do not treat me as an equal. | Ordinal |
| 13. | My colleagues from other disciplines believe that they could not do their jobs as well with my assistance. | Ordinal |
| 14. | Distinct new programs emerge from the collective work of colleagues from different disciplines. | Ordinal |
| 15. | Organizational protocols reflect the existence of cooperation between professionals from different disciplines. | Ordinal |
| 16. | Formal procedures/mechanisms exist for facilitating dialogue between professionals from different disciplines. | Ordinal |
| *17. | I am not aware of situations in my setting in which a coalition, task force, or committee has developed out of interdisciplinary efforts. | Ordinal |
| 18. | Working with colleagues from other disciplines leads to outcomes that we could not achieve alone. | Ordinal |
| 19. | Creative outcomes emerge from my work with colleagues from other professions that I could not have | Ordinal |

predicted.

- | | | |
|------|---|---------|
| *20. | I am not willing to take on tasks outside of my job description when that seems important. | Ordinal |
| 21. | I am not willing to sacrifice a degree of autonomy to support cooperative problem solving. | Ordinal |
| 22. | I utilize formal and informal procedures for problem solving with my colleagues from other disciplines. | Ordinal |
| *23. | The professional colleagues from other disciplines with whom I work stick rigidly to their job descriptions. | Ordinal |
| 24. | My interdisciplinary professional colleagues and I work together in many different ways. | Ordinal |
| 25. | Professionals from other disciplines with whom I work encourage students and/or families' participation in the work. | Ordinal |
| *26. | My colleagues from other disciplines are not committed to working together. | Ordinal |
| 27. | My colleagues from other disciplines work through conflicts with me in efforts to resolve them. | Ordinal |
| 28. | When colleagues from different disciplines make descisions together they/we go through a process of examining alternatives. | Ordinal |
| 29. | My interactions with colleagues from other disciplines occur in a climate where there is freedom to be | Ordinal |

different and to disagree.

- | | | |
|------|---|---------|
| 30. | Students and families participate in interdisciplinary planning that concerns them. | Ordinal |
| 31. | Colleagues from all professional disciplines take responsibility for developing work-related goals. | Ordinal |
| *32. | Colleagues from all professional disciplines do not participate in implementing work-related goals. | Ordinal |
| 33. | Professionals from different disciplines are straightforward when sharing information with students and families. | Ordinal |
| 34. | My colleagues from other disciplines and I often discuss different strategies to improve our working relationships. | Ordinal |
| 35. | My colleagues from other professions and I talk about ways to involve other professionals in our work together. | Ordinal |
| *36. | My colleagues from other disciplines do not attempt to create a positive climate in our organization. | Ordinal |
| 37. | I am optimistic about the ability of my colleagues from other disciplines to work with me to resolve problems. | Ordinal |
| 38. | I help colleagues from other disciplines to address conflict with other professionals directly. | Ordinal |
| 39. | My colleagues from other disciplines are as likely as I am to address obstacles to our successful | Ordinal |

collaboration.

- | | | |
|------|--|---------|
| 40. | My colleagues from other disciplines and I talk together about our professional similarities and differences including role, competencies and stereotypes. | Ordinal |
| *41. | My colleagues from other disciplines and I do not evaluate our work together. | Ordinal |
| 42. | I discuss with professionals from other disciplines the degree to which each of us should be involved in a particular case. | Ordinal |

Misener Nurse Practitioner Job Satisfaction Scale

- | | | |
|-----|-------------------------------------|---------|
| 1. | Vacation/leave policy | Ordinal |
| 2. | Benefit package | Ordinal |
| 3. | Retirement plan | Ordinal |
| 4. | Time to answer messages | Ordinal |
| 5. | Time to review diagnostic tests | Ordinal |
| 6. | Immediate supervisor | Ordinal |
| 7. | Time in direct patient care | Ordinal |
| 8. | Time allocation for seeing patients | Ordinal |
| 9. | Administrative support | Ordinal |
| 10. | Quality of assistive personnel | Ordinal |

11.	Patient scheduling process	Ordinal
12.	Patient mix	Ordinal
13.	Sense of accomplishment	Ordinal
14.	Social contact at work	Ordinal
15.	Status in community	Ordinal
16.	Social contact with colleagues after work	Ordinal
17.	Professional interaction with other disciplines	Ordinal
18.	Support for continuing education	Ordinal
19.	Opportunity for professional growth	Ordinal
20.	Time to serve on professional committees	Ordinal
21.	Amount of involvement in research	Ordinal
22.	Opportunity to expand scope of practice	Ordinal
23.	Interaction with other NPs/faculty	Ordinal
24.	Consideration for your opinion	Ordinal
25.	Input into organizational policy	Ordinal
26.	Freedom to question decisions/policies	Ordinal
27.	Expand skill level within scope of practice	Ordinal
28.	Ability to deliver quality care	Ordinal
29.	Ability to expand scope of practice and advanced	Ordinal

education

- | | | |
|-----|--|---------|
| 30. | Recognition for your work/supervisors | Ordinal |
| 31. | Recognition for your work/peers | Ordinal |
| 32. | Level of autonomy | Ordinal |
| 33. | Evaluation process | Ordinal |
| 34. | Reward distribution | Ordinal |
| 35. | Value for what you do | Ordinal |
| 36. | Challenge | Ordinal |
| 37. | Opportunity to develop and implement ideas | Ordinal |
| 38. | Process for conflict resolution | Ordinal |
| 39. | Consideration of your personal needs | Ordinal |
| 40. | Flexibility in practice protocols | Ordinal |
| 41. | Monetary bonuses | Ordinal |
| 42. | Opportunity to receive compensation for services performed | Ordinal |
| 43. | Respect for your opinion | Ordinal |
| 44. | Acceptance of physicians outside of your practice | Ordinal |

Demographics

- | | | |
|----|--------|---------|
| 9. | Gender | Nominal |
|----|--------|---------|

10.	Education	Nominal
11.	Experience as RN	Ordinal
12.	Experience as NP	Ordinal
13.	Practice in hospital	Nominal
14.	Practice in outpatient area	Nominal
15.	Practice both hospital/outpatient	Nominal
16.	Teaching	Nominal
17.	Community of practice	Nominal
18.	Zip code	Nominal

*Asterisk designates items that required reverse scoring

Research Questions

1. What is the relationship between job satisfaction, as measured by the overall score on the Misener Nurse Practitioner Job Satisfaction Scale, and the degree to which the nurse practitioners define practice as interdisciplinary, using the Index of Interdisciplinary Collaboration?
2. What is the relationship between each of the six factors of the Misener Nurse Practitioner Job Satisfaction Scale and the degree to which nurse practitioners in Pennsylvania define their practice as interdisciplinary, using the Index of Interdisciplinary of Collaboration?
3. Which of the following best predicts the degree of interdisciplinary practice among these nurse practitioners: total years of practice as a registered nurse (including those as a nurse practitioner), years of practice as a nurse practitioner, educational level, or the geographical location of the practice?

Descriptive Statistics

Descriptive statistics were computed for the data collected from the demographic questionnaire and are reported in table format in Chapter 4. These include such calculations as the mean, range, and standard deviation dependent on the level of data. This analysis allowed for a description of the sample population as well as which practice areas were represented and which geographical areas of Pennsylvania were included in the sample.

Inferential Statistics

Research questions 1 and 2, which focus on the relationship between job satisfaction and interdisciplinary practice, were answered with the use of inferential

statistics. The variables from the demographic questionnaire were analyzed with multiple regression in order to answer research question 3.

Inferential Question 1

The first research question, “What is the relationship between job satisfaction, as measured by the overall score on the Misener Nurse Practitioner Job Satisfaction Scale, and the degree to which nurse practitioners define their practice as interdisciplinary?”, was analyzed using Pearson product-moment correlation coefficients. The data collected from the interdisciplinary tool generated ordinal data as did the Misener Nurse Practitioner Job Satisfaction Scale.

Inferential Question 2

The second research question, “What is the relationship between each of the six factors of the Misener Nurse Practitioner Job Satisfaction Scale and the degree to which nurse practitioners define their practice as interdisciplinary?”, was analyzed using Pearson product-moment correlation coefficients. Data to answer this question were ordinal-level. The Pearson product-moment is the appropriate coefficient of correlation with this type of data (Polit & Beck, 2004). Each of the six factors as outlined in the Misener Nurse Practitioner Job Satisfaction Scale generated an independent score and was then correlated with the degree to which the nurse practitioners identified their practice as interdisciplinary according to the Index of Interdisciplinary Collaboration.

Inferential Question 3

The third research question, “Which of the following best predicts the degree of interdisciplinary practice: total years of practice as a registered nurse (including those as a nurse practitioner), years of practice as a nurse practitioner, educational level, or the

geographical location of the practice?”, was analyzed using a multiple correlation coefficient, R (Polit & Beck, 2004). A further test of significance was calculated to determine which of the variables most accounted for the degree of interdisciplinary practice identified by the nurse practitioner. Simultaneous multiple regression was employed to address this issue (Polit & Beck).

Chapter Summary

A descriptive correlational design was chosen to conduct this study. The interrelationship between the degree to which nurse practitioners defined their practice as interdisciplinary and their level of job satisfaction were explored. This interrelationship was investigated by an Internet administration of three surveys to a sample of nurse practitioners in Pennsylvania: the Misener Nurse Practitioner Job Satisfaction Scale, the Index of Interdisciplinary Collaboration, and the investigator-developed demographic questionnaire. Each of these surveys has been described, and reliability and validity data were included when available.

The limitations and advantages of Internet administration of the surveys have also been presented. Measures to overcome the anticipated limitations of the study were incorporated. In addition, the researcher reported the pilot testing of the survey instruments and corrected any necessary issues.

The sample population was a sample of convenience. The respondents were recruited from an existing listserv of nurse practitioners in Pennsylvania and by mailed postcard invitation. Permission to administer the surveys to the listserv was granted by the president of the organization that maintains it (P. Schwabenbauer, personal communication, May 2, 2007). She also provided the investigator with a letter of support

(See Appendix H).

The plan for the data analysis using the SPSS 17.0 software has also been described in this chapter. The anticipated methods of reporting the results were delineated.

Chapter 4

DATA ANALYSIS

The purpose of this investigation was to explore the relationship between the degree to which nurse practitioners define their practice as interdisciplinary and the job satisfaction of those nurse practitioners. The degree of interdisciplinary practice was measured with the Index of Interdisciplinary Collaboration. The Misener Nurse Practitioner Job Satisfaction Scale was administered to measure job satisfaction. Demographic data were also collected by the investigator-developed survey. This chapter will present the analysis of the data collected through an online survey using these instruments.

Also included in this chapter are the descriptive statistics of the sample which are comprised of the demographic characteristics of the respondents as well as the means and standard deviations of the data generated by the survey tools. The correlations between job satisfaction and interdisciplinary practice will be presented to answer the first research question. A correlation between each of the six factors of job satisfaction and interdisciplinary practice will be reported to answer the second research question. The last question will be answered with multiple regression. The final section will report results from the exploratory analysis that extended beyond the primary research questions.

Description of the Sample

This survey was administered in the last week of March and the first week of April of 2009. A total of 244 potential respondents logged on but the inclusion criteria prevented 54 of them from actually completing the survey. The sample recruitment was

facilitated by mailing a postcard invitation to every sixth nurse practitioner on a mailing list purchased from the Pennsylvania State Board of Nursing. In addition, the survey was posted on the Web site of the Pennsylvania Coalition of Nurse Practitioners (PCNP). An e-mail was posted on the Web site by the listserv webmaster alerting the subscribers about the impending posting of the survey. Three days later a letter of invitation explaining the study, which also included the informed consent, was posted on the Web site. The letter contained a hyperlink that took those who chose to participate directly to the survey. Contact information was included in the letter, and two respondents e-mailed the researcher with questions in regard to having difficulty accessing the survey. This problem was addressed with SurveyMonkey, and the respondents completed the survey.

Although the exact number of potential respondents reached by mail or the Internet is not known, it is estimated at approximately 2,000. This estimate is based on the fact that there are 6,150 nurse practitioners in Pennsylvania and that every sixth nurse practitioner was mailed a postcard invitation to participate in the survey. The Pennsylvania Coalition of Nurse Practitioners listserv has approximately 1,000 subscribers and all received the e-mail invitation. The actual response rate for this study was 9.5%; a total of 244 nurses logged on to complete the survey however, the inclusion criteria limited the sample to 190. This response rate falls at the lower end of the range of other on-line surveys to other on-line surveys where response rates were between 7% to 87% (Morris et al., 2004). However, it is acknowledged that there would be some overlap between the two groups.

Demographics of the Sample

The final part of the online survey gathered the following demographics on the

nurse practitioners who participated in the study: gender and education; experience, teaching, and practice setting. These results are presented below.

Gender and Education

Just over three-quarters of the respondents had a master's degree (88%) and 97% were female. A summary of the educational preparation of participants is presented in Table 4.1.

Table 4.1. Distribution of the Respondents' Educational Preparation

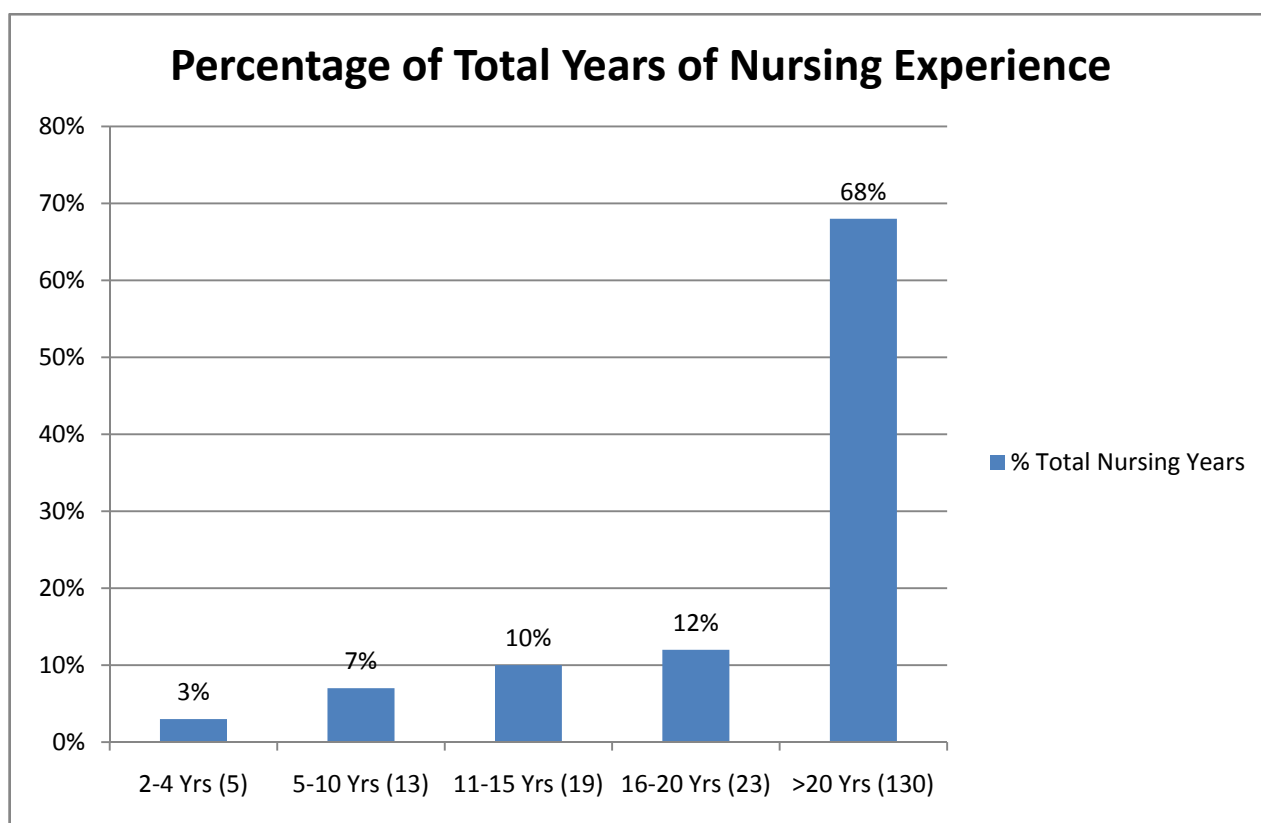
Degree	Frequency	Percent	Valid Percent
Diploma	1	0.5	.5
Baccalaureate	5	2.7	2.7
Master's	168	88.4	88.4
Doctoral	16	8.4	8.4
Total	190	100	100
Missing Data	0	0	
Valid N = 190			

Experience, Teaching, and Practice Setting

The experience of the participants, measured in years of active practice, was assessed both as a registered nurse and as a nurse practitioner (see Figures 4.1 and 4.2). Over half (68%) of the respondents reported more than 20 years of active experience, including their combined years as a registered nurse with their years as a nurse practitioner. One third (35%) of the participants reported between 5 and 10 years of experience as a nurse practitioner, while 16% of the participants had more than 20 years

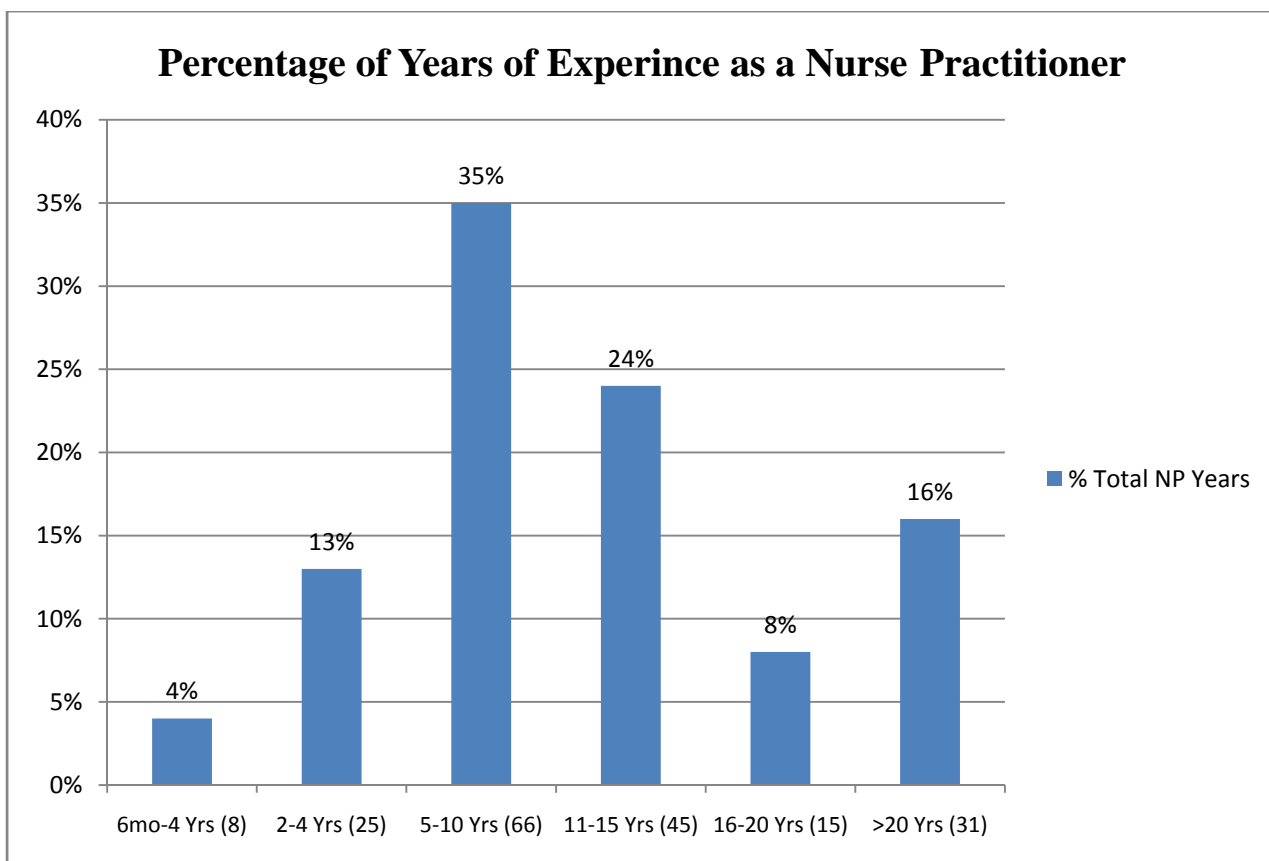
as a nurse practitioner. The majority of the respondents indicated that their positions included educational responsibilities (64%).

The majority of the participants practiced in outpatient settings (60.5%). One third (30%) indicated that they had both inpatient and outpatient responsibilities. The complete demographics are reported in Table 4.2.



Numbers in parentheses indicate frequencies for each category (N = 190).

Figure 4.1: Total years of nursing experience.



Numbers in parentheses indicate frequency for each category (N = 190).

Figure 4.2. Years of experience as a nurse practitioner.

Table 4.2. Work setting

	Frequency	Percent	Valid Percent
Strictly inpatient	13	6.8	6.8
Strictly outpatient	115	60.5	60.5
Combined practice	57	30.0	30.0
Total	190	190	190
Valid n = 190			

The zip codes of the respondents by county are presented in Appendix J. There are 67 counties in the state of Pennsylvania, 40 of which are represented in this study (60%). Those that have been identified as rural by the Center for Rural Pennsylvania are designated by an asterisk. Appendix K provides a map of Pennsylvania that delineates the rural counties. The sites of practice indicated by the respondents demonstrated that there was some discrepancy between actual designations, as determined by zip code, and reported designations. The actual frequencies were 66.3% urban and 33.7% rural.

Results of the Data Analysis

The following data analysis includes a descriptive analysis of the Misener Nurse Practitioner Job Satisfaction Scale, descriptive analysis of the Index of Interdisciplinary Collaboration, the reliability of the Curci Study as compared with the Misener Scale, and the IIC.

Descriptive Analysis of the Misener Job Satisfaction Scale

The Misener Nurse Practitioner Job Satisfaction Scale was completed by 190 participants. This survey yielded a total score as well as scores for each of the six factors

identified by the originator of the instrument. The possible score range for this tool was 44-264. Participants were asked to rate their degree of job satisfaction in relation to specific items such as “Retirement” and “Benefits” package. This instrument is scored on a rating scale of 1 to 6 with 1 being very dissatisfied and 6 being very satisfied. There are a total of 44 items on this tool and none required reverse scoring. The mean satisfaction score for this study was 199.74 and the standard deviation was 36.53. These values fall within the minimally satisfied to the satisfied range. The means and standard deviations for the survey items are reported in Table 4.3 in descending order; the numbers in parenthesis represent the score range for that factor. The means and standard deviations as well as the reliability statistics for each of the six factors are reported in Table 4.4.

Table 4.3. Satisfaction Scale

N=190	1	2	3	4	5	6
	Very dissatisfied	Dissatisfied	Minimally Dissatisfied	Satisfied	Minimally Satisfied	Very Satisfied
Descriptive Statistics					Mean	SD
13. Sense of accomplishment					5.24	.764
7. Percentage of time for patient care					5.22	.808
28. Ability to deliver quality care					5.20	.853
32. Level of autonomy					5.20	.816
12. Patient mix					5.13	.751
36. Challenge at work					5.06	.916
1. Vacation policy					5.03	1.092
8. Time allocated to see patients					4.99	.973
6. Immediate supervisor					4.87	1.268
14. Social contact at work					4.86	1.057
2. Benefits					4.83	1.076
15. Status in community					4.83	1.010
31. Recognition from your peers					4.77	1.063
35. Sense of value for what you do					4.77	1.223
3. Retirement					4.70	1.140
40. Flexibility in protocols					4.70	1.126
27. Expanding skill level					4.66	1.123
43. Respect for our opinion					4.65	1.277

17. Professional interaction with other disciplines	4.62	1.091
16. Social contact after work	4.58	1.132
44. Acceptance of physicians outside of your practice	4.56	1.086
4. Time for messages	4.54	1.180
5. Time to review labs	4.54	1.197
37. Opportunity to develop ideas	4.54	1.231
10. Quality of assistive personnel	4.52	1.167
30. Recognition for your work from superiors	4.51	1.377
26. Freedom to question decisions	4.48	1.410
29. Opportunities to expand scope of practice and time for advanced education	4.48	1.266
39. Consideration for your personal needs	4.47	1.314
11. Patient scheduling process	4.45	1.231
9. Administrative support	4.44	1.313
24. Consideration for your opinion	4.43	1.405
19. Opportunity for professional growth	4.39	1.314
33. Evaluation process	4.33	1.307
23. Interaction with other NPs	4.32	1.318
18. Support for continuing education	4.30	1.452

Descriptive Statistics - continued	Mean	SD
22. Opportunity to expand scope of practice	4.23	1.350
38. Process for conflict resolution	4.08	1.314
25. Input in policy making	4.01	1.420
20. Time for committees	3.95	1.355
34. Reward distribution	3.94	1.413
21. Involvement in research	3.90	1.340
41. Monetary bonuses in addition to salary	3.19	1.724
42. Compensation for duties outside of your normal duties	3.07	1.625
Valid N = 190		

The distribution of the satisfaction scores are displayed in figure 4.3. The median score for the satisfaction was 207 with a mode of 220. These scores demonstrate that the respondents were minimally satisfied with their positions. Only 11% of the respondents were very satisfied with their positions.

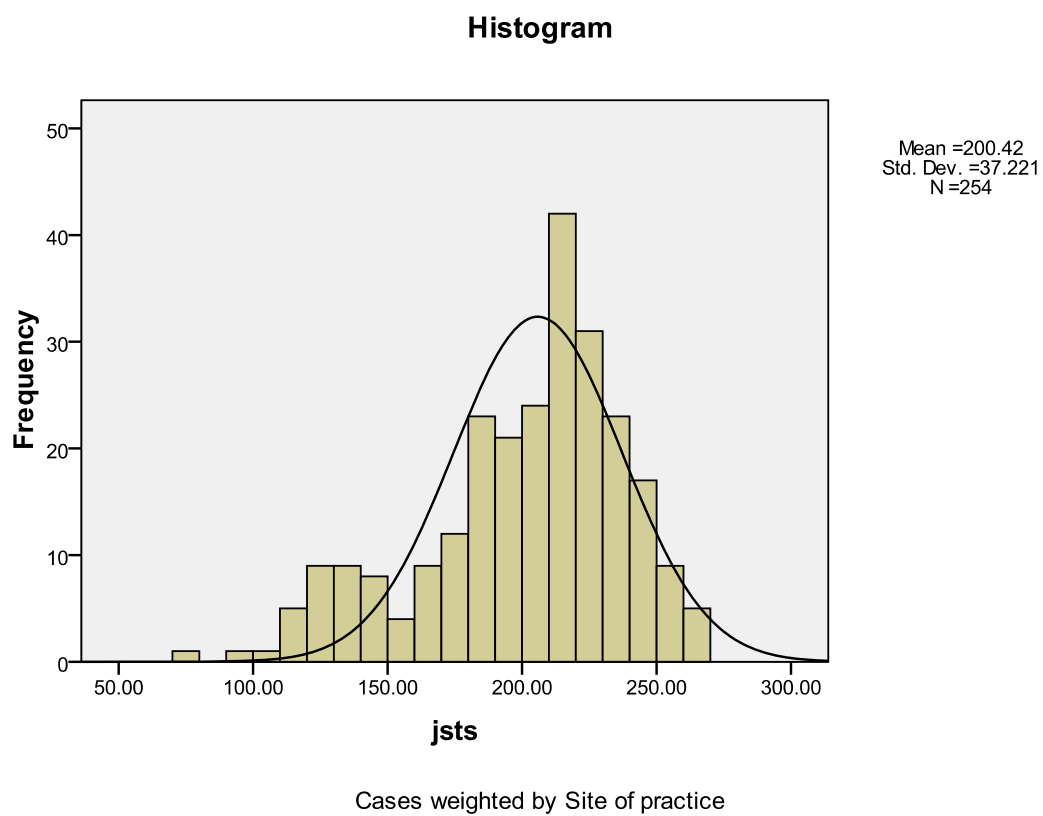


Figure 4.3 Distribution of job satisfaction scores

These are the factors described by Misener and Cox (2001): intrapractice partnership and collegiality, which include items relevant to organizational policy, respect for one's opinion, and administrative support. This factor is comprised of the following items: 6, 9, 24, 25, 26, 30, 33, 34, 37, 38, 39, 41, 42, and 43. The range of potential scores for this 14-item factor is 14-84. For this study, the range was 15-84. The mean and standard deviation reported for this factor were 55 and 14.41, respectively. The respondents rated "compensation for duties outside of your normal duties" (item 42) the lowest, with a mean of 3.07 and a standard deviation of 1.625.

The second factor, challenge and autonomy, included the items that pertain to flexibility in practice protocols, the ability to deliver quality care, and opportunities to expand the scope of practice. This factor is comprised of the following items: 7, 12, 13, 27, 28, 29, 32, 35, 36, and 40. Scores ranged from 23-60 out of a possible 10-60. The mean and standard deviation reported for this factor were 49.68 and 7.22, respectively. The respondents rated item 26, "freedom to question decisions", as the lowest with a mean of 4.48 and a standard deviation of 1.410.

The third factor, professional, social and community interaction pertains to professional interaction with other disciplines, status in the community, peer recognition, and acceptance of physicians outside of one's own practice. This factor is comprised of eight items, and includes the following: 10, 14, 15, 16, 17, 23, 31, and 44. The range of potential scores in this factor is 8-48 and in this study, the scores ranged from 19 to 48. The mean and standard deviation were 37.06 and 6.39, respectively. The respondents rated item 23 "interaction with other nurse practitioners including faculty" the lowest, with a mean of 4.32 and a standard deviation of 1.318.

The fourth factor, professional growth, includes items that are reflective of support for continuing education, opportunity to expand one's scope of practice, and involvement in research. This factor includes these items: 18, 19, 20, 21, and 22. The range of possible scores for this factor is 5-30 and was the same in this study. The mean and standard deviation for factor four are 20.78 and 5.51, respectively. The respondents rated item 21, "involvement in research", as the lowest, with a mean of 3.90 and a standard deviation of 1.340.

The fifth factor, time, refers to time to review diagnostic tests, answer messages, and see patients. This factor includes the following four items: 4, 5, 8, and 11. The respondents' scores ranged from 5-24 with the potential range being 4-24. The mean and standard deviation were 4.63 and .970, respectively. The participants rated item 11, "patient scheduling process", as the lowest with a mean of 4.45 and a standard deviation of 1.231.

The sixth and final factor, benefits, includes items that pertained to employee benefits, retirement, and leave policy. This factor is made up of three items and the potential scores range from 3 to 18. The items included in this factor are 1, 2, and 3. The range of scores in this study was 3 to 18. The mean and standard deviation of this factor were 14.56 and 2.80. The respondents rated item 3, "retirement", as the lowest, with a mean of 4.70 and a standard deviation of 1.140. These results are in Table 4.5.

Table 4.4. Descriptive and Reliability Statistics for the 6 Factors of the Misener Nurse Practitioner Job Satisfaction*Scale*

Scale	No. of Items	Mean	Standard Deviation	Cronbach's alpha
Factor 1 - (partnership)	14 (14-84)	3.93 (23.6)	1.02	.957
Factor 2 - (autonomy)	10 (10-60)	4.97 (29.8)	.720	.905
Factor 3 - (interactions)	8 (8-48)	4.63 (27.8)	.800	.862
Factor 4 - (growth)	5 (5-30)	4.15 (24.9)	1.10	.868
Factor 5 - (time)	4 (4-24)	4.63 (27.8)	.970	.867
Factor 6 - (benefits)	3 (3-18)	4.86 (29.2)	.930	.800

Partnerships = intrapractice partnerships and collegiality

Autonomy = challenge and autonomy

Interactions = professional, social, and community interactions

Growth = professional growth

Time = time

Benefits = benefits

N = 190

Descriptive Analysis of the Index of Interdisciplinary Collaboration

The Index of Interdisciplinary Collaboration was completed by 190 of the participants in this study. The means and standard deviations reported for the IIC are reported in Table 4.5. A 5-point rating type scale was used to measure the participants' responses, which ranged from 1 = never to 5 = always. A higher score reflects more collaboration, whereas lower scores reflect less collaboration (See Table 4.6). There were 42 items on the survey with 12 worded in such a way that they required reversed scoring. The scoring range for the entire tool was 42-210. The overall survey mean for this study was 95.51 with a standard deviation of 19.46. This score suggests that the participants perceived a moderate level of collaboration.

Table 4.5. Measures of Central Tendency

	Mean	SD
Index of Interdisciplinary Collaboration	95.51	19.46
N=190		

The means and standard deviations for the individual items on the IIC are reported in Table 4.6. The items are listed from the highest to the lowest scores, although the original item number is listed as on the Misener tool. The items that were reverse scored are indicated by an asterisk. The item the respondents rated with the highest level of collaboration was item 11 which addressed cooperation between colleagues from multiple disciplines with a mean of 4.43. The second item with the highest level of collaboration was number 9, "I view part of my professional role as supporting the role of

others with whom I work”, with a mean of 4.39. This response indicates that the respondents agree with this statement. Both items reflect cooperation between members of the interdisciplinary team.

The items most indicative of the lowest interdisciplinary collaboration were number 23 which related to professionals working outside of their job descriptions”, and number 40, “My colleagues from other disciplines and I talk together about our professional similarities and differences including role, competencies and stereotypes”—both with a mean of 3.08. These scores indicate that the participants do not feel as though their colleagues are rigid in terms of their individual roles and that they do not often discuss the similarities and differences of each other’s roles. The Index of Interdisciplinary Collaboration is divided into five subscales with the means and standard deviations as well as the reliability statistics being reported for the subscales in Table 4.7. The asterisk next to an item indicates that it was reversed scored.

Table 4.6. Measures of Central Tendency of the Index of Interdisciplinary

Collaboration

N=190	1	2	3	4	5	
	Never	Rarely	Sometimes	Often	Always	
Descriptive Statistics					Mean	SD
*11. Cooperation with colleagues is not part of my job description					4.43	.831
9. Support of other professionals					4.39	.805
8. Define role distinctions					4.27	.705
18. Working together leads to outcomes not achievable alone					4.20	.868
1. Utilize other professionals					4.18	.687
*5. Colleagues rarely communicate					4.15	.913
22. Formal and informal procedures for problem solving					4.13	.724
20. Can take on tasks outside of my job description					4.09	.847
*4. Teamwork is not important					4.04	1.026
2. Give feedback to other professionals					3.98	.740
3. Other professionals utilize my expertise					3.98	.724
*7. Inappropriate referrals					3.92	.805
24. We work together in many ways					3.90	.917
*26. We are not committed to working together					3.90	.844
6. Good understanding of different roles					3.88	.877

37. Optimistic about our ability to resolve problems	3.88	.925
*21. I will not sacrifice autonomy	3.85	.915
*36. We do not attempt to create a positive environment	3.81	.924
*12. Not treated as an equal	3.76	.933
19. Creative outcomes when working together	3.73	.941
10. Colleagues refer to me often	3.68	.892
28. When working together to resolve problems alternatives are considered	3.67	.915
*32. Colleagues do not participate in implementing goals	3.64	.836
29. There is freedom to be different	3.61	.937
*17. No task force development out of interdisciplinary efforts	3.58	1.308
15. Protocols reflect that we work together	3.57	.974
25. Encourage students and families to participate in work	3.57	.916
33. Professionals are straight forward	3.57	.760
31. Colleagues take responsibility for developing goals	3.56	.809
27. We work through conflicts together	3.52	.891
14. New programs because we work together	3.51	1.020
39. Colleagues are as likely to address obstacles to our success	3.46	.904
30. Students and families participate in planning	3.45	.969
38. I help address conflicts directly	3.42	.1.005
*41. We do not evaluate our work together	3.39	1.021

Descriptive Statistics – continued	Mean	SD
34. We discuss different strategies to improve our relationships	3.34	1.020
42. We discuss the degree to which each of us should be involved in a case	3.34	.946
13. Others believe they could not do their job without me	3.32	.942
35. Talk about involving other disciplines	3.28	1.058
16. Formal procedures to communicate between professionals	3.25	1.194
*23. Colleagues stick to their job description	3.08	.788
40. We talk about our similarities	3.08	.1.008
Valid N = 190		
*Indicates items that required reverse scoring		

In addition, the Index of Interdisciplinary Collaboration has five subscales identified by the author when she completed a factor analysis during the tool's development. They are interdependence, newly created professional job activities, flexibility, collective ownership of goals, and reflection on process (See Table 4.7). The numbers in parenthesis represent the potential range of scores for each of the subscales. Interdependence is defined by Bronstein as reliance on interactions among the professionals where all are dependent on the others to accomplish their goals and tasks. This subscale is made up of items 1 through 16. The respondents reported a mean of 3.90 and a standard deviation of 0.468 for this subscale.

The subscale of newly created professional job activities refers to the collaborative acts, programs, and structures that amount to more than what would have been created if the professionals had all been working individually. The mean for this subscale, which is comprised of items 17 through 23, was 3.82, and the standard deviation was 0.468.

The third subscale is flexibility, which Bronstein (2002) defines as role-blurring and the ability to reach productive compromises in the face of disagreement. In order to achieve flexibility there is often a need to alter roles. This subscale is made up of items 24 through 29. The reported mean and standard deviation for this subscale are 3.71 and 0.687, respectively.

The fourth subscale is collective ownership of goals. This refers to the sharing of responsibility in the process of reaching client-centered goals. The items that made up this subscale were 30 through 38. The mean was 3.57 with a standard deviation of 0.653.

The fifth and final subscale is reflection on process and refers to the behaviors whereby the professionals talk about their working relationships and then incorporate the feedback to strengthen the collaborative process. The mean for this subscale was 3.33, with a standard deviation of 0.719. Items 39 through 42 were included in this subscale.

Table 4.7. Descriptive and Reliability Statistics for the 5 Subscales of the Index of Interdisciplinary Collaboration

Scale	No. of Items	Mean	SD	Cronbach's alpha
Subscale 1 (interdependence)	16 (16-80)	3.90 (29.5)	.468	.881
Subscale 2 (professional activities)	7 (7-35)	3.82 (29.1)	.486	.874
Subscale 3 (flexibility)	6 (6-30)	3.71 (18.6)	.687	.832
Subscale 4 (goals)	9 (9-45)	3.57 (17.9)	.653	.828
Subscale 5 (reflection)	4 (4-20)	3.33 (16.7)	.719	.865

Interdependence = interdependence

Professional activities = newly created professional activities

Flexibility = flexibility

Goals = collective ownership of goals

Reflection = reflection on process

N=190

Curci Study

The reliability statistics for the Misener Nurse Practitioner Job Satisfaction Scale remained consistent in this investigation. The reliability reported in the present study was .974. This finding demonstrates the internal consistency of the instrument. A comparison between the published reliability coefficients and those reported in this investigation are shown in Table 4.8.

The overall reliability coefficient reported in this study for the Index of Interdisciplinary Collaboration was .942. A comparison of values reported in the literature and those found in this study are reported in Table 4.9.

Table 4.8. Summary of Reliability Coefficients of the Misener Job Satisfaction Scale and the Curci Study

	Misener Nurse Practitioner Job Satisfaction Scale (Misener & Cox, 2001)	Curci Study
Total Score	.960	.974
Intrapractice partnership/collegiality	.940	.960
Challenge/autonomy	.890	.905
Professional, social, and community interaction	.840	.862
Professional growth	.860	.868
Time	.830	.867
Benefits	.790	.800
Misener (2001) N = 413		
Curci (2009) N = 190		

Table 4.9. Summary of Reliability Coefficients of the Index of Interdisciplinary Collaboration and the Curci Study

Scale	Index of Interdisciplinary Collaboration (Bronstein, 2002)	Curci Study
Total Score	.920	.942
Subscale 1 (interdependence)	.780	.881
Subscale 2 (professional activities)	.760	.874
Subscale 3 (flexibility)	.560	.832
Subscale 4 (goals)	.760	.828
Subscale 5 (reflection)	.820	.865
Interdependence = interdependence		
Professional activities = newly created professional activities		
Flexibility = flexibility		
Goals = collective ownership of goals		
Reflection = reflection on process		
Bronstein (2002) N = 462		
Curci (2009) N = 190		

Inferential Statistics

The research questions for this study were analyzed using Pearson product-moment correlational analysis, with the results as follows.

Inferential Question 1

The first research question asks, “What is the relationship between job satisfaction, as measured by the overall score on the Misener Nurse Practitioner Job Satisfaction Scale, and the degree to which nurse practitioners define their practice as interdisciplinary, using the Index of Interdisciplinary Collaboration?” A Pearson product-moment correlational analysis demonstrated a strong positive relationship, with a value of .656 and a p value of $<.000$.

Inferential Question 2

The second research question asks, “What is the relationship between each of the six factors of the Misener Nurse Practitioner Job Satisfaction Scale and the degree to which nurse practitioners identify their practice as interdisciplinary, using the Index of Interdisciplinary Collaboration?” A Pearson product-moment correlational analysis was conducted to answer this question. Each of the six factors as outlined in the Misener Nurse Practitioner Job Satisfaction Scale generated an independent score, which was correlated with the degree to which nurse practitioners identify their practice as interdisciplinary. Each of the six factors independently correlated with the degree to which the nurse practitioners identified their practice as interdisciplinary (See Table 4.10).

Table 4.10. Pearson Product-Moment Correlation Coefficients for the 6 Factors of the Misener Scale and the Index of Interdisciplinary Collaboration

Factor	Pearson Product-Moment Correlation	<i>p</i> value
Factor 1 - Partnerships	.614	<i>p</i> < .0001
Factor 2 - Autonomy	.587	<i>p</i> < .0001
Factor 3 - Interactions	.688	<i>p</i> < .0001
Factor 4 - Growth	.549	<i>p</i> < .0001
Factor 5 - Time	.453	<i>p</i> < .0001
Factor 6 - Benefits	.324	<i>p</i> < .0001

Partnerships = intrapractice partnerships, and collegiality

Autonomy = challenge and autonomy

Interactions = professional, social, and community interactions

Growth = professional growth

Time = time

Benefits = benefits

N = 190

Inferential Question 3

The third research question, which asks, “Which of the following best predicts the degree of interdisciplinary practice: total years of practice as a registered nurse (including those as a nurse practitioner), years of practice as a nurse practitioner, educational level, or geographical location of the practice?”, was analyzed using the multiple correlation coefficient, R (Polit & Beck, 2004). However, when the variables were analyzed to determine if they correlated with interdisciplinary practice, no significant correlations were found (see Table 4.11).

Table 4.11. Pearson Product-Moment Correlation Coefficients for the Demographic Variables and the Index of Interdisciplinary Collaboration

Variable	Pearson Product-Moment Correlation	p value
Total years of practice	.100	$p < .117$
Years of practice as NP	.024	$p < .765$
Educational level	.084	$p < .216$
Geographic location	.040	$p < .960$
N = 190		

Further Analysis

Further tests of significance were calculated to investigate associations between the total score on the Index of Interdisciplinary Collaboration and the demographic variables. Depending on the number of categories of responses, either a one-way ANOVA or an independent sample t test was done. There was a significant difference in

the mean of interdisciplinary scores between nurse practitioners who reported working in both the inpatient and the outpatient areas ($p \leq 001$) and those who did not. A significant difference in interdisciplinary scores also existed if the respondent indicated that teaching was a part of their responsibility and those who indicated that teaching was not part of their responsibility ($p \leq 007$). The nurse practitioners who had responsibilities for care in the outpatient area and inpatient area may have been following their patients when they were admitted to the hospital and hence were able to provide continuity of care. There was no significant difference for those who practiced in urban versus rural areas or those who responded that yes, their practice was limited to outpatient care versus those who indicated “no” their practice was not limited to outpatient care ($p \leq .562$ and $p \leq .290$, respectively). (See Table 4.12).

A one-way ANOVA was calculated for the demographic variables that were categorical in nature in relation to both the Misener Nurse Practitioner Job Satisfaction Scale and the IIC. No significant differences in means were found for the IIC. There was a significant difference in mean job satisfaction scores for the nurse practitioners by years of experience as a nurse practitioner ($F = 5.098$, $df = 5$, $p \leq .0001$). Satisfaction was the highest for those nurse practitioners with between 11 and 15 years of experience after that the scores fell with increased experience. The only other demographic variable examined that had significance was education ($F = 3.462$, $df = 3$, $p \leq .017$), with a difference between the nurse practitioners with bachelor’s degrees and those with doctoral degrees ($p \leq .009$) where those with a doctorate had higher levels of job satisfaction.

In addition, differences were examined between the demographic variables and the total job satisfaction score. The nurse practitioners in both the hospital setting and the

outpatient area demonstrated the highest differences in mean scores in job satisfaction ($p \leq .005$). The opportunity to practice in both the hospital and the outpatient clinic area increased both job satisfaction and degree of interdisciplinary practice (See Table 4.13).

Table 4.12. Comparison of the Degree of Interdisciplinary Practice Score and the Respondents Demographics

Variable	Mean (SD)	t	df	p
Outpatient				
yes	156.24 (20.90)	-.670	218	.290
no	159.14 (23.36)			
Inpatient				
yes	162.54 (18.05)	2.7	218	.023*
no	154.14 (22.00)			
Both In/Out				
yes	162.44 (15.16)	2.64	218	.001***
no	154.23 (22.86)			
Teaching				
yes	160.58 (18.40)	3.16	161	.002*
no	150.25 (23.07)			
Urban	156.53 (20.20)	-.060	218	.562
Rural	156.70 (22.20)			
* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$				

Table 4.13. Comparison of the Total Job Satisfaction Score and the Demographic

Variable (n=190)	Mean (SD)	t	df	p
Outpatient				
yes	201.07 (36.83)	.693	252	.102
no	196.37 (39.90)			
Inpatient				
yes	204.03 (33.17)	.990	252	.005**
no	198.94 (38.75)			
Both In/Out				
yes	210.15 (29.35)	2.812	252	.020*
no	196.11 (39.53)			
Teaching				
yes	204.60 (34.05)	2.374	252	.361
no	193.19 (40.70)			
Urban				
Urban	198.36 (35.04)	-.060	252	.265
Rural				
Rural	202.45 (39.29)			

* $p \leq .05$, ** $p \leq .01$

The Misener Nurse Practitioner Job Satisfaction Scale has been used twice with nurse practitioners in the past. Five items have consistently received the lowest scores in those studies and again in this study. Those five items are identified and compared across the three studies (See Table 4.14).

Table 4.14. Items with the Lowest Job Satisfaction Scores Across the Three Studies

Item	Misener (2001)	Kacel (2005)	Curci (2009)*
Time for committees	3.84	3.96	3.95
Reward distribution	3.68	3.81	3.94
Involvement in research	3.67	3.62	3.90
Monetary bonuses in addition to salary	2.84	2.69	3.19
Compensation for duties outside of normal work duties	2.86	3.01	3.07

*N = 190

The Misener Nurse Practitioner Job Satisfaction Scale is made up of six factors of job satisfaction. Each of these factors was correlated with each of the subscales that make up the Index of Interdisciplinary Collaboration. All of the factors were positively related to each of the subscales. (See Table 4.15).

Table 4.15. Pearson Product-Moment Correlations Between the 6 Factors of the Misener Job Satisfaction and the 5 Subscales of the IIC

Factor of Job Satisfaction	Subscale 1 IIC	Subscale 2 IIC	Subscale 3 IIC	Subscale 4 IIC	Subscale 5 IIC
Factor 1 -Partnerships	.505	.431	.529	.564	.522
Factor 2- Autonomy	.515	.447	.493	.507	.461
Factor 3- Interactions	.613	.475	.582	.579	.561
Factor 4- Growth	.443	.413	.490	.485	.432
Factor 5- Time	.313	.301	.227	.416	.299
Factor 6- Benefits	.279	.306	.282	.283	.284
Total Score of Job Satisfaction	.547	.478	.549	.579	.531

All correlations were significant at a p value of .000

Partnerships = intrapractice partnerships, and collegiality

Autonomy = challenge and autonomy

Interactions = professional, social, and community interactions

Growth = professional growth

Time = time

Benefits = benefits

N=190

Chapter Summary

A sample of 190 nurse practitioners currently practicing in the state of Pennsylvania participated in an online, descriptive correlational study to explore the relationship between interdisciplinary practice and job satisfaction. Descriptive statistics were used to depict the characteristics of the sample.

A Pearson product-moment correlation was used to answer research question one. This question specifically examined the relationship between job satisfaction and the degree of interdisciplinary practice. The data supported a strong positive correlation between these two variables.

The second question, which addressed each factor of job satisfaction and its relationship to interdisciplinary practice, was also answered with a Pearson product-moment correlation. All six factors independently correlated with interdisciplinary practice at a statistically significant level.

Question three was to examine which of the four demographic variables best predicted the level of interdisciplinary practice reported by the nurse practitioners in this study: education; experience, and, practice setting. None of the variables correlated with interdisciplinary practice at a significant level.

Further analysis was undertaken to determine if there were differences in the mean scores of the Index of Interdisciplinary Collaboration and the Misener Nurse Practitioner Job Satisfaction Scale and the demographics of this sample. The same demographic variables, teaching and combined inpatient and outpatient practice, accounted for the largest differences in means with regard to the total scores on both surveys.

Lastly, the total score of the Misener Nurse Practitioner Job Satisfaction Scale was

correlated with each of the five subscales of the Index of Interdisciplinary Collaboration. All of the subscales were significantly related. The six factors of job satisfaction were also correlated individually with each of the subscales of the Index of Interdisciplinary Collaboration, and all were positively correlated.

Chapter 5

DISCUSSION

This chapter includes a discussion of the study findings and how those findings relate to the current literature. It also includes sample characteristics, the findings related to job satisfaction and interdisciplinary practice, the demographics as they relate to job satisfaction and interdisciplinary practice, and reliability estimates. The chapter concludes with the limitations, implications for nursing education and practice, and further directions for research.

Summary of the Study

The purpose of this study was to explore the relationship between the degree to which nurse practitioners define their practice as interdisciplinary and the job satisfaction of those nurse practitioners. The cost and complexity of the current health care system in the United States has been the impetus for professional organizations, accrediting bodies, and the government to advocate for changing the way health care is delivered, one example of which is the move toward an interdisciplinary practice model. It is only with a satisfied, competent interdisciplinary team of health care providers that the long-term goals of improved patient safety, decreased costs, and improved quality will be achieved (IOM, 2001). The most recent statistics from the state of Pennsylvania demonstrate a continued issue with patient safety. Events categorized as serious, indicating that a permanent disability resulted from the event, numbered 8,645 in 2008. In addition there were 366 deaths that were at least associated with an adverse event in Pennsylvania in 2008 (*Pennsylvania Patient Safety Authority 2008 Annual Report*). This study was undertaken in light of this information.

The conceptual framework that guided this study was developed by Koelbel and her colleagues (1991), and was based on a modified version of Herzberg's Dual-Factor Theory of

Job Satisfaction (Herzberg, Mausner, & Snyderman, 1959). This model assumes that factors that produce job satisfaction are separate and distinct from those that produce dissatisfaction.

Herzberg identifies intrinsic factors as those that contribute to job satisfaction and extrinsic as those that contribute to dissatisfaction. The Misener Nurse Practitioner Job Satisfaction Scale (Misener & Cox, 2001) was administered to measure job satisfaction in this study because it measures both intrinsic and extrinsic factors and had been used to study job satisfaction with nurse practitioners in previous research. It also had well established reliability and validity data.

The concept of interdisciplinary practice has been a part of health care delivery since 1948 (Singleton & Green-Hernandez, 1998), but until 2002 no tools were available to measure such collaboration (Bronstein). Consequently, the Index of Interdisciplinary Collaboration (IIC) developed by Bronstein was used in this study to measure interdisciplinary practice in relation to nurse practitioners' job satisfaction. The IIC had not been used with nurse practitioners prior to this study but did have published reliability and validity data from studies in which it was administered to social workers and other professionals, including registered nurses.

The results from this study of nurse practitioners in Pennsylvania support the hypothesis that there is a strong positive relationship between their job satisfaction and interdisciplinary practice. This association provides support for the health care industry's move towards an interdisciplinary practice model. As previously stated, a satisfied, competent staff will deliver higher quality care at a decreased cost, will improve patient outcomes, and provide a safer environment for patients (Thomas et al., 2000).

Sample Characteristics

This section presents the findings of the demographic survey completed by the 190 participating nurse practitioners in this study.

Gender

Although the State Board of Nursing in Pennsylvania does not keep gender-specific data (Personal communication, State Board of Nursing, April 24, 2009), the investigator estimated that approximately 3% of the nurse practitioners in Pennsylvania are male, by reviewing the first names of nurse practitioners on the State Board of Nursing mailing list. Thus the gender characteristics of the sample are consistent with the Pennsylvania state data.

Education

In 2005, the American Nurses Credentialing Center required nurses to have a master's degree in order to take the nurse practitioner certification examination. Also in 2005, Pennsylvania made passing a certification examination a prerequisite to licensure as a nurse practitioner. Given these new requirements, eventually all nurse practitioners will have at a minimum a master's degree.

Experience as a Nurse Practitioner

Finding that the nurse practitioners in this study had longevity in their positions indicates that they are at least satisfied enough with their jobs that they are remaining in the profession.

Many nurse practitioner programs require some experience as a nurse prior to pursuing advanced practice. However, as trends are shifting, some universities admit students to nurse practitioner programs upon graduation from their undergraduate program and successful completion of the National Council Licensure Examination (NCLEX). This allows the student to gain experience as a registered nurse (typically on a part-time basis), while concurrently completing a nurse practitioner program. In the future, the ratio between years of experience as a nurse and those as a nurse practitioner may reflect this changing trend.

Teaching Experience

Although the questionnaire did not specifically define “teaching”, nor did it distinguish between academic and clinical education those who taught had increased interdisciplinary practice scores. Since a large component of nurse practitioner education occurs in the clinical setting, it is safe to assume that a fair amount of the teaching that the respondents were referring to was occurring in the clinical setting by functioning as clinical preceptors.

Site of Practice: Rural or Urban

No significant difference in job satisfaction scores was found among nurses practicing in areas of different population densities; nurse practitioners in both rural and urban areas were minimally satisfied with their jobs. One explanation for this finding may be that the factors that impact job satisfaction are potentially present in any practice setting.

Type of Practice

The sample included nurse practitioners from inpatient and outpatient practice areas as well as those who had responsibilities in both spheres. The majority reported working in the outpatient area. Those who reported responsibilities in both areas had the highest level of job satisfaction. Access to multiple other disciplines in the inpatient setting may contribute to this finding. In addition, moving between the inpatient setting and the outpatient setting facilitates communication between multiple disciplines.

Job Satisfaction

Job satisfaction, for the purpose of this study, was defined as a multidimensional affective outcome resulting from the interaction of an employee's expectations, values, environment, and personal characteristics; it is recognized that satisfiers and dissatisfiers are dynamic and relative to the employee (Misener & Cox, 2001). According to Herzberg (1959), the factors of job satisfaction or dissatisfaction follow two separate continua, accounting for the fact that there are aspects of a job that a person may like and aspects that they may dislike. Since a person's job satisfaction is also on a continuum, it is important to remember that the absence of dissatisfaction does not necessarily equal satisfaction, or vice versa. The satisfiers and dissatisfiers are fluid and changeable, depending on other aspects of the job and work environment (Misener & Cox). Satisfiers that arise from the performance of the job itself, achievement, recognition, responsibility, and advancement and the work itself are also termed intrinsic factors of job satisfaction. The dissatisfiers that arise from the work environment include working conditions, interpersonal relationships, salary, status, administrative policies, administration, and supervision are also termed extrinsic factors of job satisfaction (Herzberg, 1966).

This section begins with the nurse practitioners' overall perceptions of job satisfaction, followed by factors on the Misener Nurse Practitioner Job Satisfaction Scale for which the nurse practitioners reported the highest and lowest degrees of satisfaction. Next, individual items with the highest and lowest ratings of satisfaction are addressed. Three predominant themes related to job satisfaction are presented but are addressed separately: satisfaction with the degree of autonomy, rates of compensation, and experience.

General Perceptions of Job Satisfaction

The nurse practitioners in Pennsylvania were minimally satisfied with their jobs. This finding is incongruent with the findings of Beal et al. (1997), Tri et al. (1991), and Wild et al. (2006), who reported high levels of job satisfaction. One plausible explanation for the incongruence with the first two studies is that they were conducted more than a decade ago. Health care has changed and demands on nurse practitioners to be productive have increased. With this change, providers are required to see more patients per hour; the patients are often more complex; and opportunities to build the rapport with patients, vital to job satisfaction for the nurse practitioner, are diminished. Collectively these issues add stress to an already stressful situation. In contrast, the findings of this inquiry were consistent with the following studies: Collier et al., 2006; Kacel et al., 2005; Miller et al., 2005; Schiestel, 2007. With the exception of the findings by Wild and colleagues (2006), the degree of satisfaction--minimally satisfied to satisfied--has remained consistent in research studies throughout this decade. However, Wild and colleagues conducted their study in California where there are few practice limitations. The ability to practice in such an autonomous environment may account for their findings.

The mean overall job satisfaction scores for the nurse practitioners in the rural and urban settings in this study were 4.38 and 4.51, respectively. This difference was not significant.

However, overall scores for issues related to professional growth remained among the lowest in terms of job satisfaction. For the overall sample “Involvement in research” and “Time for committees” had mean scores of 3.90 and 3.95, respectively. These values fell into the minimally dissatisfied range. This finding is congruent with those of Koelbel et al. (1991) and Kacel et al. (2005), who found that professional isolation contributed to job dissatisfaction for nurse practitioners in rural settings. Limited opportunity to interact with other nurse practitioners, participate in professional development programs, or attend regional meetings restricted the rural nurse practitioners opportunities for professional growth. Since 1991, technology has advanced to overcome many of the obstacles that contribute to professional isolation, yet there has been little change in the level of satisfaction with regard to this issue. One explanation for the continued dissatisfaction in this area may be that, as an industry, health care is “20 years behind the times” (Levey, 2009). In addition, although nurse practitioners may be allocated time for participation in professional activities, in reality they often may have difficulty taking that time, because overly full appointment schedules take precedence over professional development. As a result, participation on committees or in research must often be done outside of normally scheduled hours and in addition to normal workloads.

When the items measuring job satisfaction were examined individually and listed in descending order, a significant drop in satisfaction was noted between the 37th (M = 4.23) and the 38th (M = 4.08) ranked items. The seven items with the lowest job satisfaction ratings had mean values that fell in the minimally dissatisfied to minimally satisfied range. The two themes inherent in these items were compensation and professional input into policy, and research and conflict resolution. Compensation, although an extrinsic factor of job satisfaction, can intuitively be a reflection of a person’s value to the employer. Bonuses and compensation for work outside

of normal duties were the two lowest reported items on the Misener Job Satisfaction Scale. It may not be the dollar figure that is important but that the compensation reflects recognition, which is an intrinsic factor of job satisfaction. Feeling valued in the workplace is a major contributor to job satisfaction. Often the dissatisfiers are a reflection of value of the employee in regard to their contribution to the institution (Wild, 2006, Wagner, 2004).

Factors of Job Satisfaction

The participants in this study were most satisfied with the group of items classified as Factor 2, challenge and autonomy, which is an intrinsic factor of job satisfaction. This finding supports Herzberg's theory and is consistent with the findings of Beal et al. (1997), Kacel et al. (2005), Koelbel et al. (1991), Miller et al. (2005), and Schiestel (2007).

This study demonstrated that nurse practitioners from Pennsylvania were least satisfied with the group of items classified as Factor 1, intrapractice partnership and collegiality, and Factor 4, professional growth, with means of 3.93 and 4.15, respectively. These findings are congruent with Schiestel's research (2007). The nurse practitioners in Arizona were least satisfied with the same two factors of job satisfaction. The consistency of these findings demonstrates that nurse practitioners face similar issues across the country and that the factors that they find rewarding and those that contribute to job dissatisfaction are consistent. This information is valuable for nurse practitioners as they pursue employment and to potential employers who want to keep and retain the most qualified staff.

Items of Greatest Satisfaction

Nurse practitioners in Pennsylvania were most satisfied with a sense of accomplishment, percentage of time for patient care, and the ability to deliver quality care. These findings are consistent with the findings of Misener and Cox (2001) and Kacel et al. (2005). Across

disciplines, being able to deliver the quality of care one has been educated to deliver is a major factor in job satisfaction. In particular, nurse practitioners find that direct patient care, time with patients, and a sense of accomplishment contribute significantly to job satisfaction. This reflects the importance of the patient-nurse practitioner relationship. These items are included in Factor 2, and are intrinsic factors of job satisfaction.

Items of Greatest Dissatisfaction

Nurse practitioners in Pennsylvania were least satisfied with the compensation for duties outside of their normal responsibilities, and the monetary bonuses that they received in addition to their base salary. These findings are inconsistent with previous research by Wild, Parsons, and Dietz (2006) who found that nurse practitioners in California were least satisfied with opportunities to participate in research and writing/publishing. Nurse practitioners in Pennsylvania are also dissatisfied with opportunities to participate in research but were more dissatisfied with issues related to compensation. One possible explanation for the discrepancy in the findings may be that California's salaries are higher than that in Pennsylvania (Rollet & Lebo, 2008)

Autonomy

The nurse practitioners in this study were very satisfied with their level of autonomy. This finding is congruent with findings by Beal, Steven and Quinn (1997), Flannery and Van Gaaseek (1998), Freeborn, Hooker and Pope (2002), and Gulick, Halper and Costello (2007). Flannery and Van Gaaseek found that clinical nurse specialists who had a private practice component to their jobs were more satisfied than those who did not. They attributed this to the autonomy inherent in private practice. Freeborn et al., in a survey of nurse practitioners and physicians' assistants, found that autonomy and collaboration were pivotal to job satisfaction.

Practicing in an autonomous manner yet having the opportunity to collaborate in patient care management seems to encompass the best of job satisfaction and interdisciplinary practice.

Functioning in an autonomous manner allows a nurse practitioner to practice to his or her full potential. When that autonomy is restricted by practice policies or administrative policies, job satisfaction suffers. Autonomy, professional status, and professional growth are intrinsic factors of job satisfaction and in keeping with previous research and Herzberg's theory.

Compensation

Compensation was a contributor to dissatisfaction in this study, and it has remained a consistent contributor to dissatisfaction among nurses from 1991 through 2007 (Kacel, Millar, & Norris, 2005; Koelbel, Fuller, & Misener, 1991; Misener & Cox, 2001; Tri, 1991, and Schiestel, 2007). The nurse practitioners in Pennsylvania were the least satisfied with their compensation for work outside normal duties with a mean score of 3.07. This is in keeping with Herzberg's theory, in that salary is an extrinsic factor of job satisfaction and would only prevent dissatisfaction and not contribute to satisfaction. In addition, the American work culture reflects that a person's educational background and years of experience is usually correlated with increased compensation. However, this particular phenomenon is not seen in the profession of nursing in general or with nurse practitioners in particular (Kacel et al., 2005). If compensation is in addition to one's salary it may reflect recognition for work done well. In these situations the amount of the compensation may not be as important as the message it conveys.

Experience

The highest degree of satisfaction was reported in the nurse practitioners with between 11 and 15 years of nursing experience. These findings are congruent with Tri's (1991), but in contrast to the findings of Kacel et al. (2005). Although experience in the current study was not

categorized as novice to expert, a question about years of experience as a nurse practitioner was posed. The nurse practitioners with four or fewer years of experience were minimally satisfied with a mean job satisfaction score of 4.12. The demands of the role, the stress of role transition, and the increased responsibility inherent in the role may be reasons why these novice nurse practitioners were more dissatisfied. In addition, those with less skill often search for protocols to guide decision making, and in advanced practice even if protocols do exist, they must be interpreted on an individual basis. This may frustrate the novice who finds security in having rules to follow (Benner, 1984). In contrast, the nurse practitioners with more experience have a sense of security in the role of a nurse practitioner, feel comfortable with colleagues from other disciplines, and are confident when delivering patient care, all of which contribute to a higher level of job satisfaction.

Kacel, Miller, and Norris (2005) found that the nurse practitioners newest to the role had the highest level of satisfaction and then the level of satisfaction fell steadily with every year of experience. One possible explanation for these findings may be that when a nurse practitioner is new to the role, challenges are regularly encountered and opportunities to learn abound. Another reason may be the sense of accomplishment a student has when completing a course of study and earning an advanced degree. A sense of accomplishment was the highest rated item of job satisfaction in the present study. When assuming a new position, a nurse practitioner may experience a short “honeymoon.” During this time the excitement of the new position and the lower level of expectations may contribute to a higher level of job satisfaction.

Interdisciplinary Practice

The findings of the current study indicated that the higher the level of collaboration the greater the job satisfaction of the nurse practitioners. This is consistent with the findings of

Coeling and Cukr (2000) who studied graduate nursing students and their communication styles in relation to job satisfaction and quality of care. The results of their study, which used a posttest design with nonequivalent groups, revealed that when nurses perceived higher levels of collaboration they experienced greater job satisfaction. They concluded that collaboration improved job satisfaction, a finding that is consistent with the results of this study. However, Coeling and Cukr were unable to show what the improvements in quality of care were, or to what degree satisfaction improved because satisfaction was a single-item measure. Also, no dimensions of collaboration beyond communication were examined in their study.

A study with parallel, though not overlapping aims, was conducted by Tri (1991). Although Tri's study did not focus on interdisciplinary practice, it did find that novice nurse practitioners had the lowest levels of job satisfaction when compared with nurse practitioners at all of Benner's other levels of expertise. One could speculate that these new nurse practitioners may have experienced difficulty in developing relationships with professionals from other disciplines, which contributed to their relatively low levels of job satisfaction. Relationships with others disciplines and a sense of security in one's own role are central to interdisciplinary practice.

Boone et al. (2008) explored the impact of an intervention to improve nurse-physician collaboration. In their quasi-experimental study, they conducted a conflict resolution workshop with nurses on a cardiovascular unit. The unit had been previously known to have physicians with overly aggressive behavior patterns. The researchers found no significant change in level of collaboration after the intervention. However, it should be noted that only the nurses were included in the workshop; that is, the physicians were not included. In an interdisciplinary

environment, this workshop would have included all practitioners and their findings might have been different.

In the current study, the respondents indicated that collaborating with colleagues was the most important factor of interdisciplinary practice. The subscale of the IIC with the highest reported mean was interdependence ($M = 3.90$). This subscale includes valuing and respecting each professional's contribution to the care of the patient. It also includes understanding the roles of the team members and relying on the others to accomplish team-set goals. These findings are consistent with those of McCallin and Bamford (2007) who described the importance of interprofessional relationships that support the individual's contribution to the team. The current study findings are also congruent with Rosenstein's (2002) finding that nurses were most interested in having a work environment that acknowledges the importance of their role and is respectful.

Consistent with Parker-Oliver et al. (2006) and Parker-Oliver et al. (2005), the educational level and degree of interdisciplinary practice were not significantly related in this study. The overall mean scores for interdisciplinary practice were between 67% and 77% (i.e., baccalaureate prepared = 141.40, master's prepared = 156.64, and doctorally prepared = 161.13).

Further Analysis

Further analysis of the data collected through the online survey for this study further explored the relationship between the nurse practitioners' demographic variables and their job satisfaction, and their demographic variables with interdisciplinary practice.

Demographic Variables Associated With Job Satisfaction

The nurse practitioners whose practice involved the provision of both inpatient and outpatient care were more satisfied with their jobs than were the nurse practitioners providing

care in strictly inpatient or outpatient settings. The variety of responsibilities, additional challenges inherent to practicing in both environments, and exposure to multiple disciplines may account for their higher job satisfaction levels. Another plausible explanation may be that nurse practitioners who function across settings may be better able to follow their patients through hospitalizations and then provide care for them after their discharge. This allows for continuity of care and impacts both the satisfaction of the patient and the satisfaction of the nurse practitioner. Finally, those nurse practitioners who indicated that teaching was part of their job responsibilities had a higher level of job satisfaction than their counterparts for whom teaching was not part of their responsibilities.

Demographic Variables Associated with Interdisciplinary Practice

The nurse practitioners whose roles included teaching perceived a greater degree of interdisciplinary practice. This finding may in part be explained by the fact that in teaching situations a practitioner may purposefully role model behavior that he or she feels would be important to the student; for example, the nurse practitioner may seek out opportunities to interact with other professionals to demonstrate collegiality. Nurse practitioners who practiced in inpatient settings and whose practices involved inpatient and outpatient responsibilities reported significantly higher levels of interdisciplinary collaboration than did the nurse practitioners whose practice was limited to the outpatient setting. A possible explanation for this finding is that nurse practitioners who spend at least part of their time in hospitals have greater access to health care professionals from a wide array of disciplines, which may facilitate the development of interdisciplinary collaborations.

Subscales of the Misener Nurse Practitioner Job Satisfaction Scale and Interdisciplinary Practice

All of the factors of job satisfaction were significantly related to the five subscales of the Index of Interdisciplinary Collaboration. The strongest relationship was between factor two on the Misener scale, (i.e., challenge and autonomy) which refers to flexibility in practice protocols, ability to deliver quality care, opportunity to expand one's scope of practice, and subscale one on the IIC, (i.e., interdependence), which involves reliance on interactions among mutually respected professionals to accomplish goals and tasks.

The concept of autonomy is only addressed through a single item in the Index of Interdisciplinary Collaboration: item number 21, "I am not willing to sacrifice a degree of autonomy to support cooperative problem solving." The lack of extensive focus on autonomy may be explained by the fact that the IIC was initially developed for use with social workers, a group of health care professionals who typically do not function independently.

The second strongest relationship was between Factor 4, professional growth (an intrinsic factor on the Misener Nurse Practitioner Job Satisfaction Scale), which includes support for continuing education, opportunities to expand one's scope of practice, and involvement in research with Subscale 3 (flexibility on the IIC), which encompasses role-blurring and the ability of each member to compromise. A plausible explanation for this finding may be that facilitating a co-worker's ability to attend professional educational programs requires compromising in regard to schedules and occasionally assuming responsibilities that are not traditionally part of one's role.

Limitations

The following factors must be taken into consideration when interpreting the findings of this study.

1. Sampling bias was a potential threat to the validity of the study in that the nurse practitioners who subscribed to the listserv of the Pennsylvania Coalition of Nurse Practitioners at the time of the study may have had characteristics different from those who did not. In order to address this issue, the investigator sent a postcard invitation to every sixth nurse practitioner on a mailing list purchased from the State Board of Nursing.
2. The respondents were not asked how they accessed the survey, whether through an e-mail via the listserv or by receiving the postcard invitation. Therefore it is difficult to determine how many nurse practitioners accessed the survey from the postcard and how many from the listserv. It is therefore not possible to investigate the differences in the two groups.
3. The area of specialty of each of the respondents was not collected. The fact that some practice areas are more specialized than others may have biased the sample in terms of the degree of interdisciplinary practice the nurse practitioners engaged in. For example, opportunities to interact with other disciplines may be greater for the family nurse practitioner than for the nurse practitioner in cardiac care.
4. The response rate for this study was 9.5%. In order to optimize the response rate, the researcher did send a reminder e-mail twice through the listserv, but a second postcard was not mailed. A second postcard as a reminder may have improved the response rate. In addition, an incentive was offered. The incentive was a raffle for an opportunity to win one of five \$100 gift certificates from Amazon.com.
5. The sample size ($N = 190$) was smaller than the targeted sample size of 348 which was determined through a power analysis. However, despite the less- than-desired

response rate, significant relationships between the key study variables were found. In addition, sending a postcard to every nurse practitioner on the mailing list might also have improved the response rate.

6. The Index of Interdisciplinary Collaboration had not been previously administered to nurse practitioners. Therefore, there may have been conceptual areas important to the job satisfaction of the nurse practitioners in the study that were not represented in this survey tool.
7. It was difficult to interpret the significance of the practice site determination secondary to how the questions were asked on the demographic questionnaire.

Significance to Nursing Education

Preparing the health care providers of the future will require changes in curricula, schedules, and clinical experiences. The IOM has called for 25% of clinical experiences for health care professionals to be interdisciplinary (2001). The incorporation of team-building skills, role development, and understanding of the diverse roles encountered in the delivery of health care will need to be incorporated into the present health care education system. It is not enough to tell students in the health professions to collaborate; they will need to learn the skills of collaboration.

The following are the applications of interdisciplinary practice to nursing education that could be considered:

1. Introducing nursing students to the dynamics of team building and working cooperatively as part of a team.
2. Role modeling of interdisciplinary practice by faculty and preceptors to demonstrate how the concept is operationalized in the clinical area.

3. Offering courses to students from all health care disciplines.
4. Scheduling courses so that students from different disciplines can participate.
5. Incorporating the concepts of intrinsic and extrinsic factors of job satisfaction in clinical courses. This will help students to better understand the dynamics in place in future work settings and demonstrate how they impact morale, quality of care, and job satisfaction of professionals functioning in that organization.
6. Providing opportunities for students from multiple health care disciplines to assume leadership roles.
7. Emphasizing communication, compromise, and goal-setting as part of a team.
8. Offering opportunities for faculty from different disciplines to co-teach courses.

Significance to Nursing Practice

Research findings have demonstrated that incorporating the factors known to improve job satisfaction in the workplace not only will benefit the nurse practitioners but will also improve quality of health care, control cost, and decrease medical errors. It is important for nurse practitioners to understand the dimensions of job satisfaction in order to evaluate a potential position and determine if they will be a good fit. Likewise, employers will need to know how to determine if the potential employee is a good fit for their practice. Understanding these important dynamics will save health care dollars by decreasing turnover.

In the state of Pennsylvania there continue to be areas that are underserved. Understanding the factors of job satisfaction will provide valuable information for recruitment and retention of competent nurse practitioner providers.

Legislative initiatives to expand scope of practice will be important for nurse practitioners. In “Prescription for Pennsylvania” the plan to address health care issues in

Pennsylvania, expansion of practice has been addressed. However, individual health care organizations can restrict practice as part of their policies. Legislation limiting this practice will be important as health care moves forward. The insurance industry must also be compelled to panel nurse practitioners as primary care providers in order to give equal access to care for all Pennsylvanians.

Conclusions

In summary, three research questions were explored, additional analyses were computed, and reliability and validity assessments were completed. The major contributions of the study findings are that:

1. There is a strong positive relationship between job satisfaction and the degree of interdisciplinary practice.
2. Each of the six factors of job satisfaction was positively related to the degree of interdisciplinary practice.
3. None of the selected demographic variables (i.e., total years of experience as a registered nurse, years of experience as a nurse practitioner, educational level, or geographical location of practice) was significantly related to interdisciplinary practice.
4. The job satisfaction items with the lowest scores in Misener and Cox's 2001 survey and Kacel and colleagues' 2005 survey were also the areas where nurses expressed the least satisfaction in this study (i.e., time for committees, reward distribution, involvement in research, monetary bonuses in addition to salary and compensation for duties outside of normal duties).

Optimizing health care resources and building work environments that promote cohesiveness among employees will benefit patients, providers, and health care administrators. Research has demonstrated that when providers are happy at work, productivity increases, prescribing practices change to reflect more prudent and cost effective drug choices, quality of care improves, costs are decreased and medical errors decline (Burdi & Baker, 1999, Committee on Quality of health Care in America, 2000, Freeborn & hooker, 2002, McCallin, 2005). Building an interdisciplinary health care system where practitioners across all disciplines are satisfied with their work will positively affect health care in this country.

The findings of this study have begun to elucidate the correlation between an interdisciplinary health care model and the job satisfaction of nurse practitioners in Pennsylvania. Further research exploring operationalizing the interdisciplinary model in such a manner as to create a satisfying work environment for all disciplines will provide educators, administrators, and practitioners with the tools needed to move health care forward in terms of providing better quality, cost effectiveness, and minimization of medical errors.

Future Directions

The current study marks the critical first step in this investigator's program of research. The following outlines the direction this researcher plans to pursue:

1. The concepts of interdisciplinary practice and interdisciplinary collaboration are used interchangeably in the literature. In order to more clearly define the concept of interdisciplinary practice a concept analysis will be undertaken.
2. With permission of the developer of the Index of Interdisciplinary Collaboration, modify the tool, taking into consideration the findings from the previously stated project as well as this study.

3. Similar in design to this study, conduct an investigation exploring the relationship between job satisfaction and the degree of interdisciplinary practice, using the modified interdisciplinary practice tool as described above, and including other health care professionals, in addition to nurse practitioners.
4. Develop and test an intervention directed at improving interdisciplinary practice with pre and posttest measures of job satisfaction.
5. Design a study to explore innovative applications of technology aimed at improving communication between the members of the interdisciplinary team.
6. Design a study to explore innovative applications of technology aimed at improving communications between the members of the interdisciplinary practice team.

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Appendix A

MISENER NURSE PRACTITIONER JOB SATISFACTION SCALE

13. The following is a list of items known to have varying levels of satisfaction among NPs. There may be items that do not pertain to you, however please answer it if you are able to assess your satisfaction with the item based on the employer's policy, i.e. if you needed it would it be there?

HOW SATISFIED ARE YOU IN YOUR CURRENT JOB AS A NURSE PRACTITIONER WITH RESPECT TO THE FOLLOWING FACTORS?

	Very Satisfied	Satisfied	Minimally Satisfied	Minimally Dissatisfied	Dissatisfied	Very Dissatisfied
1. Vacation/leave policy						
2. Benefit package						
3. Retirement plan						
4. Time allotted for answering messages						
5. Time allotted for review of lab & other test results						
6. Your immediate supervisor						
7. Percentage of time spent in direct patient care						
8. Time allocation for seeing patient(s)						
9. Amount of administrative support						
10. Quality of assistive personnel						
11. Patient scheduling policies & practices						
12. Patient mix						
13. Sense of accomplishment						
14. Social contact at work						
15. Status in the community						
16. Social contact with your colleagues after work						
17. Professional interaction with other disciplines						
18. Support for continuing education (time & \$\$)						
19. Opportunity for professional growth						
20. Time off to serve on professional committees						
21. Amount of involvement in research						

	Very Satisfied	Satisfied	Minimally Satisfied	Minimally Dissatisfied	Dissatisfied	Very Dissatisfied
22. Opportunity to expand your scope of practice						
23. Interaction with other NPs including faculty						
24. Consideration given to your opinion & suggestions for change in the work setting or office practice						
25. Input into organizational policy						
26. Freedom to question decisions & practices						
27. Expanding skill level/procedures within your scope of practice						
28. Ability to deliver quality care						
29. Opportunities to expand your scope of practice & time to seek advanced education						
30. Recognition for your work from superiors						
31. Recognition of your work from peers						
32. Level of autonomy						
33. Evaluation process & policy						
34. Reward distribution						
35. Sense of value for what you do						
36. Challenge in work						
37. Opportunity develop & implement ideas						
38. Process used in conflict resolution						
39. Amount of consideration given to your personal needs						
40. Flexibility in practice protocols						
41. Monetary bonuses that are available in addition to your salary						
42. Opportunity to receive compensation from services performed outside of your normal duties						

Very Satisfied	Satisfied	Minimally Satisfied	Minimally Dissatisfied	Dissatisfied	Very Dissatisfied
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43. Respect for your opinion

44. Acceptance & attitudes of physicians outside of your practice (such as specialist you refer patients to)

Appendix B

BRONSTEIN INDEX OF INTERDISCIPLINARY COLLABORATION

Individual Questions

Individual Questions	Never	Rarely	Sometimes	Often	Always
1. I utilize other (non-social work) professionals for their particular expertise.					
2. I consistently give feedback to other professionals in my setting.					
3. Other (non-social work) professionals in my setting utilize social workers for a range of tasks.					
*4. Teamwork with professionals from other disciplines is not important in my ability to help clients.					
*5. My colleagues from other professional disciplines and I rarely communicate.					
6. The colleagues from other disciplines with whom I work have a good understanding of the distinction between my role & their role(s).					
*7. My colleagues from other disciplines make inappropriate referrals to me.					
8. I can define those areas that are distinct in my professional role from that of professionals from other disciplines with whom I work.					
9. I view part of my professional role as supporting the role of others with whom I work.					
10. My colleagues from other disciplines refer to me often.					
*11. Cooperative work with colleagues from other disciplines is not a part of my job description.					
*12. My colleagues from other professional disciplines do not treat me as an equal.					
13. My colleagues from other disciplines believe that they could not do their jobs as well without the assistance of social workers.					

Individual Questions	Never	Rarely	Sometimes	Often	Always
14. Distinct new programs emerge from the collective work of colleagues from different disciplines.					
15. Organizational protocols reflect the existence of cooperation between professionals from different disciplines.					
16. Formal procedures/mechanisms exist for facilitating dialogue between professionals from different disciplines (i.e., at staffing, inservice, rounds, etc.)					
*17. I am not aware of situations in my agency in which a coalition, task force, or committee has developed out of interdisciplinary efforts.					
18. Working with colleagues from other disciplines leads to outcomes that we could not achieve alone.					
19. Creative outcomes emerge from my work with colleagues from other professions that I could not have predicted.					
20. I am willing to take on tasks outside of my job description when that seems important.					
*21. I am not willing to sacrifice a degree of autonomy to support cooperative problem solving.					
22. I utilize formal & informal procedures for problem solving with my colleagues from other disciplines.					
*23. The professional colleagues from other disciplines with whom I work stick rigidly to their job descriptions.					
24. My non-social work professional colleagues & I work together in many different ways.					
25. Professionals from other disciplines with whom I work encourage family members' participation in the treatment process.					

	Never	Rarely	Sometimes	Often	Always
*26. My colleagues from other disciplines are not committed to working together.					
27. My colleagues from other disciplines work through conflicts with me in efforts to resolve them.					
28. When colleagues from different disciplines make decisions together, they go through a process of examining alternatives.					
29. My interactions with colleagues from other disciplines occur in a climate where there is freedom to be different & to disagree.					
30. Clients/patients/students participate in interdisciplinary planning that concerns them.					
31. Colleagues from all professional disciplines take responsibility for developing treatment plans.					
*32. Colleagues from all professional disciplines do not participate in implementing treatment plans.					
33. Professionals from different disciplines are straightforward when sharing information with clients/patients/students.					
34. My colleagues from other disciplines & I often discuss different strategies to improve our working relationships.					
35. My colleagues from other professions & I talk about ways to involve other professionals in our work together.					
*36. My non-social work colleagues do not attempt to create a positive climate in our organization.					
37. I am optimistic about the ability of my colleagues from other disciplines to work with me to resolve problems.					
38. I help my non-social work colleagues to address conflict with other professionals directly.					

	Never	Rarely	Sometimes	Often	Always
39. My non-social work colleagues are as likely as I am to address obstacles to our successful collaboration.					
40. My colleagues from other disciplines & I talk together about our professional similarities & differences, including role, competencies, & stereotypes.					
*41. My colleagues from other professions & I do not evaluate our work together.					
42. I discuss with professionals from other disciplines the degree to which each of us should be involved in a particular case.					

Appendix C

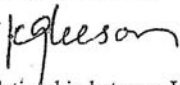
PENNSTATE HERSCHEY
 College of Medicine

College of Medicine
 Milton S. Hershey Medical Center
 Human Subjects Protection Office
 Institutional Review Board
 Academic Support Building
 Room 1140, Mail Code A115
 600 Centerview Drive
 P.O. Box 855
 Hershey, PA 17033-0855

Tel: (717) 531-5687
 Fax: (717) 531-3937
 hspo@hmc.psu.edu
 www.hmc.psu.edu/irb

DATE: October 06, 2008

TO: Katherine M. Curci, MS, CRNP, CNM, Nursing (HMC)

FROM: Kevin Gleeson, M.D., Executive Chair 
 Institutional Review Board

RE: IRB Protocol No. 29441EM - The Relationship between Interdisciplinary Practice and the Job satisfaction of Nurse Practitioners throughout Pennsylvania

Confirmation of Exempt Status

Thank you for your application to the Institutional Review Board (IRB) for the above research. The activity was screened for exempt status according to the policies of this institution and the provisions of applicable federal regulations and, as submitted, was found not to require formal IRB review because the research met the criteria for exempt research according to the following category in the Code of Regulations:

45 CFR 46.101(b)(2) - Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified directly or through identifiers linked to the subjects; and (ii) any disclosure of human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to subjects' financial standing, employability, or reputation. *(This category may NOT include children, prisoners or be FDA-regulated.)*

This determination was based on the research as described in the application and the following:

- Protocol Summary (received 09/17/2008)
- To provide adequate information to everyone who enters the survey (e.g. those recruited by postcard), the information that is in the colleague letter should be presented at the beginning of the survey. They should be told they are implying their consent to be a part of your research when they complete the survey.
- Kristen Kjerulff, Ph.D. did not participate in the review determination.

Retain this letter as evidence of IRB review and determination of exempt status for this research. Annual review of this research is not required provided the investigation is conducted as proposed. Therefore, no progress reports or IRB annual review letters will be issued.

The IRB requires notification and review in the following circumstances.

- Report any unanticipated problems involving risk to subjects or others that occur as a result of participation in this research.
- Report any proposed changes in the research activity that may affect the exempt status, outlined above. Prior IRB review is needed before such changes are initiated except where necessary to eliminate apparent immediate hazards to the subject.

Please include the IRB protocol number on any future documentation submitted for this research. The Board appreciates your efforts to conduct research in compliance with the institutional policies and federal regulations that have been established for the protection of human subjects.

KG/kml

An Equal Opportunity University



Appendix D**THE DEMOGRAPHIC SURVEY**

Finally, I would like to ask you some questions about yourself.

1. Please indicate your gender.

Male
 Female

2. Please indicate the highest level of education you have obtained.

Diploma
 Baccalaureate
 Masters
 Doctoral

3. Please indicate how many years experience as a registered nurse you have (include those years as a nurse practitioner).

6mo-1 year
 2-4 years
 5-10 years
 16-20ears
 16-20 years
 ≥ 20 years

4. Please indicate how many years of experience you have as a nurse practitioner.

6mo-1 year
 2-4 years
 5-10 years
 16-20ears
 16-20 years
 ≥ 20 years

5. Is your practice hospital based?

Yes
 No

6. Is your practice outpatient based?

Yes
 No

7. Does your practice involve both outpatient and inpatient responsibilities?

Yes
 No

8. Do your responsibilities include teaching?

Yes
 No

9. How would you describe your practice?

Rural
 Urban

10. Please indicate the zip code of your practice.

Appendix E

POSTCARD INVITATION TO POTENTIAL PARTICIPANTS

Dear NP Colleague:

I am Katherine M. Curci, a doctoral student at Penn State School of Nursing. I have been a nurse practitioner for 20 years and am inviting you to participate in a survey to explore the impact of an interdisciplinary environment on the job satisfaction of nurse practitioners in Pennsylvania.

Information gained from this survey will provide nurse practitioners with data that can be used to enhance their practice environment and job satisfaction.

Below is a hyperlink that will take you directly to the survey which should take you between 15 and 20 minutes to complete. Upon completion of the survey you will have the option to participate in a drawing for one of five \$100 gift certificates from Amazon.com.

Please take a few minutes to add to this important data base as we all move forward to change the health care system in ways that positively impact all of us.

<http://www.surveymonkey.com/IDPJSNPs>

Katherine M. Curci

Appendix F**THANK YOU AND REMINDER E-MAIL**

Dear Nurse Practitioner Colleagues,

First I would like to thank you if you have already completed the survey I recently posted regarding job satisfaction and interdisciplinary practice. If you have not completed the survey please take a few minutes to do so and don't forget to register for the drawing of one of five \$100 gift certificates for Amazon .com

Thank-you,

Katherine M. Curci

Appendix G

PRE-NOTIFICATION E-MAIL REGARDING SURVEY

Dear Nurse Practitioner Colleague,

My name is Katherine M. Curci. You are receiving this e-mail as a member of the Coalition of Nurse Practitioners of Pennsylvania. The president of the coalition, Pat Schwanbacher, has given me permission to contact each member of the listserv to invite you to participate in an online survey that addresses the job satisfaction of nurse practitioners and its relationship to interdisciplinary practice.

I have been a nurse practitioner since 1989 and I am conducting this survey as part of my doctoral work. I am currently pursuing my doctorate at The Pennsylvania State University School of Nursing.

I would appreciate your time in completing this survey. Know that the data will be used to move health care in this Commonwealth in the direction that will create the most satisfying practice environment for nurse practitioners.

In a few days you will receive an e-mail that will further detail the content of the survey. The e-mail will contain a hyperlink that will directly connect you to the survey. Completion of the survey should take 15-20 minutes or less. Completion of the survey will imply consent. Responses will be anonymous.

Thank you, in advance, for your participation in this research

Appendix H

INTRODUCTORY E-MAIL LETTER OF INVITATION

[ON OFFICIAL PSU LETTERHEAD]

Dear NP Colleague,

This is a letter to invite you to participate in a research study to explore the relationship between interdisciplinary practice and the job satisfaction of nurse practitioners. This study will provide data regarding practice environments and their impact on the job satisfaction of nurse practitioners in the state of Pennsylvania. Upon completion of the survey you will have the option of participating in a drawing for 1 of 5 \$100 dollar gift certificates from Amazon.com

Should you decide to participate I would like you answer questions related to your work environment and your job satisfaction. If the question does not seem to apply directly to your work environment, answer as if it would. The final component contains a few demographic questions. It should take no longer than 15 to 20 minutes to complete the survey.

There are no risks associated with this study and your participation is purely voluntary. You may withdraw at any time. The potential benefits included are an increased awareness of the relationship between job satisfaction of nurse practitioners and the interdisciplinary characteristics of their practice.

Your e-mail will not be connected to your survey and your responses will remain strictly confidential and be used for research purposes only. To control data security the survey software company employs the most up-to-date security measures to include encryption, virus protection, and the latest in firewall and intrusion prevention technology. Data will only be published in an aggregate manner. It will not be possible to connect your registration for the drawing with your survey.

Your participation is vital to the success of this project and is very much appreciated. To participate simply connect to the following web site by hitting the control button and clicking at the same time.

http://www.surveymonkey.com/s.aspx?sm=wjMNMYYwrBDxkF8a0vSRRLQ_3d_3d. Please take a few minutes to add to this important database as we move forward in our understanding of issues relevant to the nurse practitioners of Pennsylvania.

Should you have questions or concerns, please contact the primary investigator Katherine M. Curci, 717-531-3695 or 717-433-0365 or by e-mail at kmc14@psu.edu. Should you have questions regarding your rights as a research participant or concerns regarding your privacy, you may contact the research protection advocate in the HMC Human Subjects Protection Office at 717-531-5687.

Appendix I

PCNP PRESIDENT'S LETTER OF SUPPORT



PCNP
Pennsylvania Coalition of
Nurse Practitioners

9/18/2007

Patricia Schwabenbauer, MSN, CRNP
 Pennsylvania Coalition of Nurse Practitioners
 PO Box 545, Mechanicsburg, PA 17055

Katherine Curci
 110 Beyofield Way
 Harrisburg, PA 17112

Dear Kathy,

Congratulations on entering into this exciting stage of your dissertation. I would be happy to provide you access to the PCNP list serve to seek responses to the survey tool you have chosen. Your presentation clearly protects the confidentiality of potential respondents.

I hope this will be helpful to you and would be eager to hear the results.

Sincerely,

Patricia Schwabenbauer

President

Pennsylvania Coalition of Nurse Practitioners

Appendix J

ZIP CODES/COUNTIES REPRESENTED IN THE STUDY

Zip Codes	City	County
15001	Aliquippa	Beaver
15009	Beaver	Beaver
15017	Bridgeville	Allegheny
15025	Clarion	Allegheny
15063	Monongahela	Washington *
15108	Coraopolis	Allegheny
15143	Sewickley	Allegheny
15146	Monroeville	Allegheny
15201	Pittsburgh	Allegheny
15202	Pittsburgh	Allegheny
15204	Pittsburgh	Allegheny
15212	Pittsburgh	Allegheny
15213	Pittsburgh	Allegheny
15216	Pittsburgh	Allegheny
15217	Pittsburgh	Allegheny
15219	Pittsburgh	Allegheny
15224	Pittsburgh	Allegheny
15228	Pittsburgh	Allegheny
15240	Pittsburgh	Allegheny
15317	Canonsburg	Washington *
15349	Mount Morris	Greene *
15501	Somerset	Somerset *
15601	Greensburg	Westmoreland
15705	Indiana	Indiana *
15801	DuBois	Clearfield *
15901	Johnstown	Cambria *
16001	Butler	Butler *
16057	Slippery Rock	Butler *
16063	Zelienople	Butler *
16201	Kittanning	Armstrong *
16335	Meadville	Crawford *
16501	Erie	Crawford *
16508	Erie	Crawford *
16601	Altoona	Blair *
16602	Altoona	Blair *
16802	University Park	Centre *
16652	Huntingdon	Huntingdon *
16803	State College	Centre *
16901	Wellsboro	Tioga *
16933	Mansfield	Tioga *
17011	Camp Hill	Cumberland
17013	Carlisle	Cumberland
17022	Elizabethtown	Lancaster

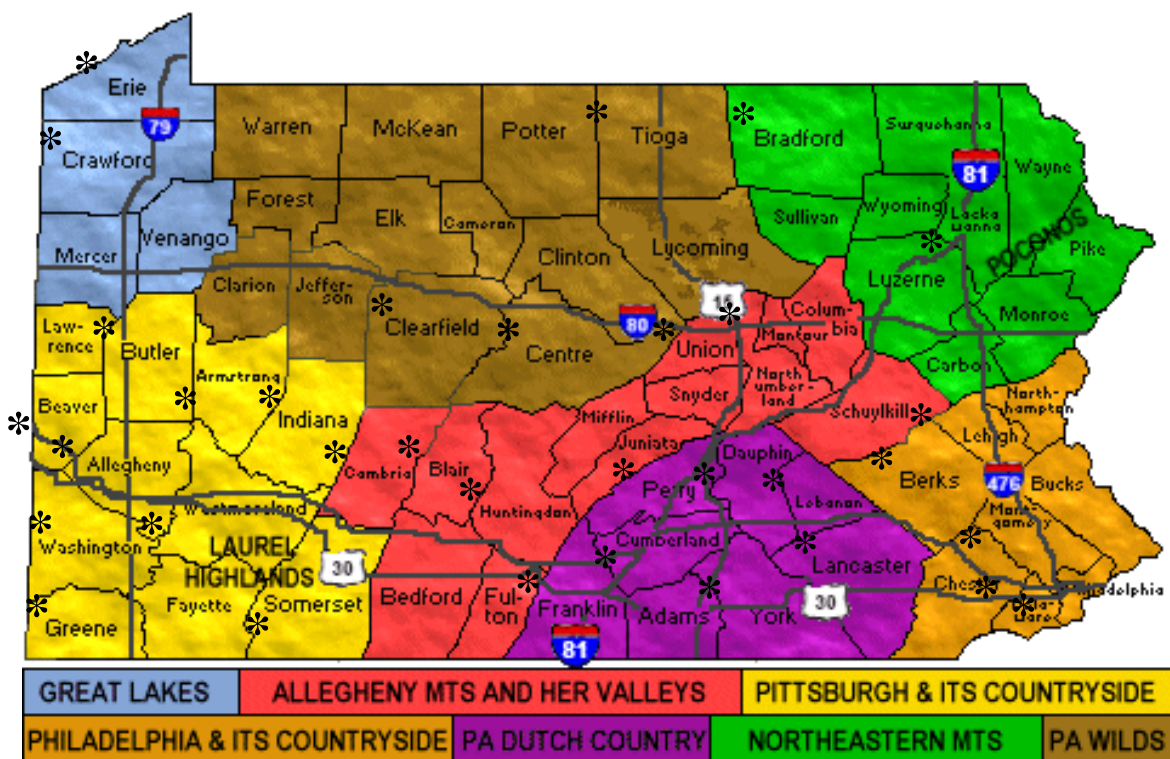
Zip Code	City	County
17025	Enola	Cumberland
17033	Hershey	Dauphin
17047	Loysville	Perry *
17050	Mechanicsburg	Cumberland
17078	Palmyra	Lebanon
17110	Enola	Cumberland
17112	Harrisburg	Dauphin
17201	Chambersburg	Franklin *
17402	York	York
17405	York	York
17522	Ephrata	Lancaster
17538	Landisville	Lancaster
17581	Terre Hill	Lancaster
17601	Lancaster	Lancaster
17603	Lancaster	Lancaster
17821	Danville	Montour *
17822	Danville	Montour *
17837	Lewisburg	Union *
17921	Ashland	Schuylkill*
18015	Bethlehem	Northhampton
18017	Bethlehem	Northhampton
18042	Easton	Northhampton
18049	Emmaus	Lehigh
18101	Allentown	Lehigh
18102	Allentown	Lehigh
18103	Allentown	Lehigh
18104	Allentown	Lehigh
18105	Allentown	Lehigh
18106	Allentown	Lehigh
18210	Albrightsville	Carbon *
18301	East Stroudsburg	Monroe *
18466	Tobyhanna	Monroe *
18505	Scranton	Lackawanna
18510	Scranton	Lackawanna
18643	Pittston	Luzerne
18702	Wilkes Barre	Luzerne
18704	Kingston	Luzerne
18840	Sayre	Bradford *
18847	Susquehanna	Susquehanna *
18960	Sellersville	Bucks
18964	Souderton	Montgomery
19001	Abington	Montgomery
19002	Ambler	Montgomery
19020	Bensalem	Bucks
19026	Drexel Hill	Delaware
19040	Hatboro	Montgomery
19044	Horsham	Montgomery

Zip code	City	County
19053	Feasterville	Bucks
19063	Media	Delaware
19064	Springfield	Delaware
19081	Swarthmore	Delaware
19082	Upper Darby	Delaware
19083	Havertown	Delaware
19101	Philadelphia	Philadelphia
19102	Philadelphia	Philadelphia
19104	Philadelphia	Philadelphia
19106	Philadelphia	Philadelphia
19107	Philadelphia	Philadelphia
19111	Philadelphia	Philadelphia
19114	Philadelphia	Philadelphia
19124	Philadelphia	Philadelphia
19130	Philadelphia	Philadelphia
19131	Philadelphia	Philadelphia
19133	Philadelphia	Philadelphia
19134	Philadelphia	Philadelphia
19140	Philadelphia	Philadelphia
19141	Philadelphia	Philadelphia
19144	Philadelphia	Philadelphia
19147	Philadelphia	Philadelphia
19345	Immaculata	Chester
19380	West Chester	Chester
19383	West Chester	Chester
19406	King of Prussia	Montgomery
19603	Reading	Berks
19605	Reading	Berks
19610	Reading	Berks
19611	Reading	Berks

*Designates rural county

Appendix K

MAP OF RURAL COUNTIES OF PENNSYLVANIA



Pennsylvania Counties Represented in the Study

(*Designates counties represented in this study):

Allegheny, Armstrong*, Beaver*, Berks, Blair, Bradford*, Butler, Cambria, Centre*, Clearfield, Crawford*, Cumberland, Dauphin, Delaware, Erie, Franklin*, Greene, Indiana*, Huntingdon, Lackawana, Lancaster, Lebanon, Lehigh, Montgomery, Montour*, Perry, Philadelphia, Somerset, Tioga*, Union*, Washington*, Westmoreland, York.

Vita

Katherine M. Curci

Education:

Doctor of Philosophy School of Nursing, The Pennsylvania State University,
August 2009

Certificate Nurse Midwife, Frontier School of Midwifery, December 1995

Master of Science in Nursing Family Practice Nurse Practitioner, The State
University of New York, Binghamton, New York, May 1989

Bachelor of Science in Nursing, Villanova University, May 1981

Academic Appointments

1998- Present, The Pennsylvania State University, School of Nursing, State
College, Pa

2006-2007, Adjunct Faculty, Kings College, Wiles-Barre, Pa

1982-1987, Hopkinsville Community College, Hopkinsville, Ky.

Publications

Johnson, J., **Curci, K. M.** & Hupcey, J. (2002). Self-management in childhood
asthma: Teaching parents the nonpharmacological approaches to manage asthma.
Clinical Excellence for Nurse Practitioners, 6 (4), 33-44.

Dellasega, C., Milone-Nuzzo, P., **Curci, K.M.**, Ballard, J. & Kirsch, D. (2007)
The humanities interface of nursing and medicine. Journal of Professional
Nursing, 23(3), 174-179.