DISSERTATION

DEVELOPMENT AND VALIDATION OF AN INSTRUMENT TO MEASURE THE CONCEPT OF OCCUPATIONAL INTIMACY IN RELATION TO PHYSICIAN JOB SATISFACTION

Submitted by

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In partial fulfillment of the requirements

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WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY MARGO A. KARSTEN ENTITLED *DEVELOPMENT AND VALIDATION OF AN INSTRUMENT TO MEASURE THE CONCEPT OF OCCUPATIONAL INTIMACY IN RELATION TO PHYSICIAN JOB SATISFACTION* BE ACCEPTED AS FULFILLING INPART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

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ABSTRACT OF DISSERTATION

DEVELOPMENT AND VALIDATION OF AN INSTRUMENT TO MEASURE THE CONCEPT OF OCCUPATIONAL INTIMACY IN RELATION TO PHYSICIAN JOB SATISFACTION

The purpose of this study was to develop and validate an instrument that measured the concept Occupational Intimacy. This instrument explored the hypothesized components of Occupational Intimacy: nurturing environment, love of work and meaningful work.

A convenience sample of 380 physicians who actively practiced in the state of Colorado participated in this study. Development and testing of the concept Occupational Intimacy provided evidence to support the validity and reliability of the instrument. The content validity of the Occupational Intimacy instrument was assessed by Boverie and Kroth, two theorists who developed the concept of Occupational Intimacy. The results of the expert review produced a 37 item Occupational Intimacy instrument.

A principal components analysis with varimax rotation was conducted to assess the underlying structure for the 37 items of the Occupational Intimacy instrument. The three factor solution explained 54% of the cumulative variance. The alpha coefficients ranged from .86-.94 on each of the final subscales: love of work, meaningful work and nurturing environment. The final instrument had 36 total items to measure the concept of Occupational Intimacy.

The mean scores for meaningful work, love of work, and nurturing environment were compared by gender, type of specialty, and age. Nine one-way ANOVA's were

completed to determine if there were statistically significant relationships between the independent variables of age, gender and specialty, and the three dependent variables: love of work, meaningful work, and nurturing environment.

There were no main effects for age or gender on the three components: meaningful work, love of work, and nurturing environment. There were no main effects for specialty on love of work and nurturing environment. However, there was a difference between the medicine physicians and "others" on how meaningful they perceived their job. The medicine physicians, which include internal medicine, neurology, family practice, cardiology, nephrology, gastroenterology, and oncology perceived their job was more meaningful than the subgroup "others" which included: obstetrics and gynecology, dermatology, allergy, ophthalmology, optometry, podiatry, psychiatry, emergency medicine, rehabilitation, pain, pediatrics, ears, nose and throat, infectious disease, and radiology. Broad generalizations are difficult to make as this study utilized results from one specific geographic location. Replication studies are encouraged to continue to validate the Occupational Intimacy concept.

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CHAPTER 1: INTRODUCTION

Job satisfaction remains a central variable in organizational theory and research. An increasing number of studies have focused on nursing and physician job satisfaction (Bottles, Byrens, & Suarez, 2003; Cox, 2000; Edwards, 2005; Greene, 2001; Levin, 1998).

Studies suggest that dissatisfied physicians may cause poor clinical management and dissatisfaction and noncompliance among patients (Konrad & Pathman, 2001; Reinhardt, 2002). Rapid turnover of unhappy physicians may lead to discontinuous and substandard medical treatment (Zugar, 2004). To ensure that patients receive quality care, it is important to understand the current level of job satisfaction among practicing physicians.

Numerous authors assert that physicians are becoming less satisfied with their career (Blumenthal, Landon, & Reschovsky, 2003; Christensen & Gabbe, 2002; Collins, Sandman, & Schoen, 1997; Hedley & Mitchell, 1997; Hobsen, 2005; Horowitz, 1996; Kerr, 2000; Leigh, 2002; Remen, 2005; Terry, 1995). In 1995, Collins, Schoen, and Sandman (1997) completed a survey of more than 1,700 practicing physicians; one third of those surveyed said they were dissatisfied with medical practice in general. Only 25% of physicians stated that they were very satisfied.

Terry (1995) noted that 21% of physicians over 50 years of age stated they wanted to retire or sell their practices within a year. In addition, Horowitz (1996) found that 43% of mental health practitioners were considering leaving the field. A nationwide

survey by the Henry J. Kaiser Family Foundation (Hobson, 2005) found that 87% of physicians said the overall morale of the profession has decreased and 60% said their own morale had declined.

While physician job satisfaction is declining, the need for physician services is increasing. The number of Americans aged 66 and older is projected to increase by 35 million between 2000 and 2030 (McGlynn & Asch, 2003). This aging United States population has produced a supply and demand problem for physicians. Older people visit a physician at a much higher rate than younger people. A national ambulatory care study reports that people between the ages of 25 and 34 visit a physician approximately two times per year, while people between the ages of 65-74 visit a physician six times a year (Lane, 2001). People over 75 years of age visit a physician approximately seven times a year. Cooper and his colleagues predict that the demand for physicians will exceed the supply by about 50,000 physicians in 2010 and by about 200,000 in 2020 (Cooper, 2004). In the year 2020 the demand for physician care throughout the United States is projected to increase 18% (Croasdale, 2003). Unfortunately, as the demand for medical care increases, the supply of physicians is decreasing. In the past when the physician supply decreased and the demand increased, patients were unable to access care when they needed it (Donelan, 2004).

Cole (2003) predicts that by the year 2010 the rate of medical staff departures from active practice will reach epic proportions, citing ten factors that will affect the shortage. The first factor highlights the aging population of current practicing physicians. Approximately 340,000 physicians will reach retirement age beginning in 2010 (Cole, 2003; Salsberg, 2001).

The second and third factors reflect the changing makeup of the physician workforce. In 2001 and 2002, women counted for 48% of students in medical school (Cole, 2003). This affects staffing because of the number of hours female physicians spend practicing medicine. Hospitals are discounting the economic benefit of female physicians' labor estimating 32 hours per week for females compared to 60 plus hours for male physicians. Having more women joining the physician work force will affect the current shortage. If women are working an average of 40 to 50% fewer hours per week and will soon compromise 50% of the workforce, the number of physicians needed to provide the same number of services will have to increase (Gautam, 2001). In addition to gender changes, generational values are affecting the amount of time physicians want to work because the younger generation is seeking a balance between work and personal life. Many younger physicians, male and female, are pursuing a set schedule that reflects a standard 40 hour work week (Smola, 2002).

The fourth factor concerns malpractice because, unfortunately, practicing medicine is becoming very litigious. Physician medical malpractice insurance costs rose 40% between 1990 and 2000 (Konrad & Williams, 2001). Merritt and Hawkins (2003) found that 62% of final year residents reported considerable concern with malpractice issues and 24% said that if there were to start their education again they would not choose a medical career. In 44 of the 50 states, physicians find it difficult to obtain malpractice insurance, and once they are insured, the premiums increase (Brennan, Mello, & Studdert, 2003).

In addition to the rising costs of malpractice litigation and coverage, it is also becoming more expensive to run an independent practice. Since 2000, the cost to run a

medical office practice has increased 5 to 6%, while many physicians have only been able to increase prices by 2 to 3% (Blumenthal, 2004).

Due to this increase in cost, some physicians are choosing to have an outside entity (e.g., a management firm) manage their practice; however, this has decreased the level of autonomy that physicians have over their work environment (Douglas & Konrad, & McMurry, 2000). Typically, practice management firms will dictate the number of patients physicians should see per day (Mechanic, 2001). These firms also charge a significant management fee, which decreases payment to the individual physician (Grumbach, 1998).

The seventh and eighth factors relate to the way in which physicians are reimbursed for their services. Due to low reimbursement from managed care plans (i.e., insurance companies), primary care physicians need to see at least 25 patients a day to maintain the income level that they have been accustomed to achieving (Zyzanski, 1998). In 2003, the Center of Medicare and Medicaid Services enacted a three year goal to reduce physician payments by 15% (Cole, 2003). Due to these changes in reimbursement, physicians are looking at other employment options such as roles in hospital administration and consulting firms. Physicians now are realizing that they have other career options, which may decrease the number of physicians caring for patients (Andrew, 2006).

Lastly, the government continues to debate the ongoing challenge of healthcare access for all Americans. If congress passed a universal coverage plan within the next ten years, the primary care physician would become the safety net. This type of coverage would require that all patients obtain approval from their primary care physician prior to

seeing a specialist (Cole, 2003). Since every person would need to have a primary care physician assigned to oversee their care, this change would cause a deficit of 62,000 primary care physicians throughout the United States (Cole, 2003). Patients would need to schedule appointments in advance, and the time they spent waiting to see a physician once they were in the physician's office would likely get longer. Thus, access to a physician would become more difficult (Hirsch, 1999).

Given these ten factors, it is apparent that a physician shortage is imminent (Cooper, 2004; Hirsch, 1999). The impending shortage will not only affect how patients obtain care for wellness or office visits, severely ill patients might not receive the care they need. The shortage of health care providers who care for critically ill patients is one of the most pressing issues affecting the future of our aging population and American medicine (Irwin, 2004). A specific example involves the limited number of specialists.

There are only 400 neurosurgeons and 500 cardiac surgeons currently practicing medicine throughout the United States (Grongono, 2004). The American Society of Anesthesiologists (ASA) reports that nearly half of all administrators in hospitals with 100 beds or more say they need additional anesthesiologists on their staff. These administrators also say that the shortage of anesthesiologists is having a directly affects operating room access. Of hospitals reporting staffing shortages, 75% say they have experienced an increase in surgery wait times, and 66% say they have had to limit access to operating rooms due to lack of anesthesia personnel (Pasko & Smart, 2003).

As the physician demand increases and the number of practicing physicians' decreases, it is important to monitor enrollment trends in medical schools (Hobson, 2005). According to Blumenthal (2004), medical school applications are more than

10,000 below the 1996 peak of 47,000. The American Medical Association indicates that applications to the nation's medical schools have decreased 22% since 1997. In 2003, medical schools received 4% fewer applications than in 2001 (Blumenthal, 2004).

Along with a decrease in the number of students entering the medical profession, overall advice and encouragement is also declining. Marr (1999) states that nearly half of the physicians surveyed would not advise a qualified college student to pursue a medical career. A survey conducted by the California Medical Association found that two thirds of doctors were not advising their children to enter the profession (Zugar, 2004).

In summary, the demand for physician services is increasing while the supply of physicians is decreasing, and the current job satisfaction of practicing physicians is declining. Understanding the decline of satisfaction from a theoretical perspective may give insight on how to reverse the trend and recruit new physicians.

Theoretical Framework

The evolution of job satisfaction theory can be examined in terms of three historical eras: industrial/scientific, the human relation era, and the open systems era. Through this theoretical evolution, the concepts regarding job satisfaction have progressed from an industrial/scientific focus to an intrinsic/value focus (Henderson, 2000). Boverie and Kroth have developed a newly emerging concept that reflects the paradigm shift, called Occupational Intimacy, which is an emerging concept that supports the construct of job satisfaction (Boverie & Kroth, 2001).

Occupational Intimacy explores how a person finds fulfillment with his or her profession (Boverie & Kroth, 2001). The foundation of this theory is based on intrinsic value and the work setting versus supervisor relationships. The applicability is far

reaching, especially for independent professionals who may not have a supervisor but whose job satisfaction is essential (i.e., physicians). Occupational Intimacy is built upon three elements: love of work, nurturing workplace, and meaningful work. Occupational Intimacy is achieved when love of work, a nurturing workplace and meaningful work are *in balance* (Boverie & Kroth, 2001).

This theory was built upon Sternberg's (1987) theory of love and relationships. Using a triangle as a metaphor, Sternberg's theory described the way key elements interact to create love. The three key elements include: Passion, intimacy, and decision/commitment (Sternberg, 1987). Here the prototype for an ideal relationship is an equilateral triangle with the key components in each angle; and having each element in equal balance.

Similar to Sternberg's theory, Boverie and Kroth (2001) believe that true Occupational Intimacy would look like Sternberg's triangle but with different key elements. Boverie and Kroth believe the ideal working relationship would place meaningful work, a nurturing environment, and love of work in equal balance. Meaningful work and love of work create the construct of passionate work. People can love what they do and find it meaningful without feeling intimate or close to their workplace if the organization or environment is not nurturing (Boverie & Kroth, 2001). Occupational Intimacy is formed when one focuses on a nurturing work environment along with the components of passionate work. Therefore, all three elements: love of work, a nurturing environment and meaningful work form occupational intimacy.

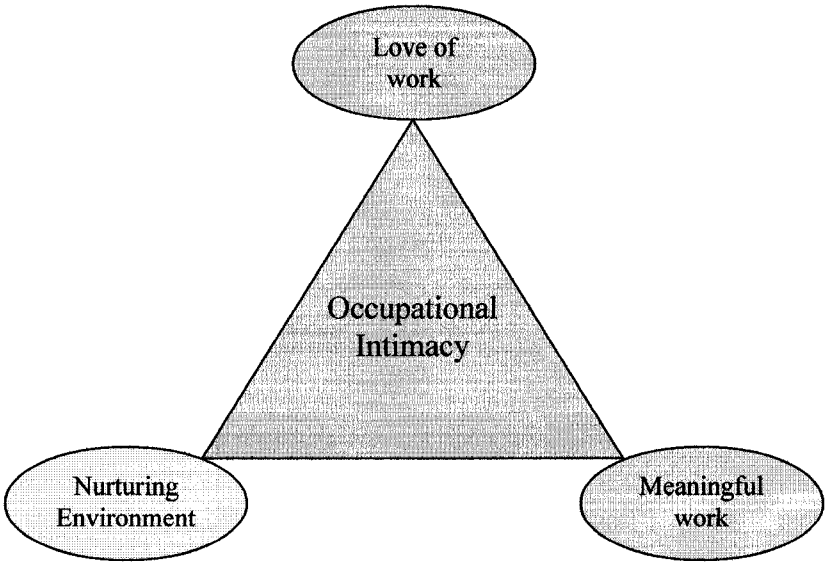

Figure 1. Occupational Intimacy Model

According to Boverie and Kroth (2005), there has not been an instrument developed to empirically measure the concept of Occupational Intimacy (Karsten, 2005). In order to develop Occupational Intimacy into a more substantial concept, an instrument needs to be developed, empirically tested, and validated (Sedjaya, 2002). Without a valid instrument to measure the emerging concept of Occupation Intimacy, there will be a void in job satisfaction research. Specifically, this void would impact independent professionals, like physicians, for whom the traditional job satisfaction theory may not apply.

Purpose Statement

The purpose of this study is to develop and validate an instrument that measures the concept of Occupational Intimacy. This instrument explores the hypothesized components of Occupational Intimacy: nurturing environment, love of work and meaningful work.

There have not been any empirical research studies that have tested Occupational Intimacy (Boverie & Kroth, 2005). Adequate measurement is required to make theoretical progress possible (Schwab, 1980).

Research Questions

The primary research questions are:

1. Is there evidence to support the content validity of the Occupational Intimacy instrument?
2. Is there evidence to support the construct validity of the Occupational Intimacy instrument?
3. What is the internal consistency of the alphas for each of the three scales (meaningful work, love of work and nurturing environment) within the Occupational Intimacy instrument?
4. How will the findings differ across age, gender and specialties of the physician sample?

Definition of Terms

The listed terms are used throughout the study and defined as follows:

Baby Boomers — Individuals born between 1943-1960 (Zemke, Raines, & Filipczak, 2000).

Balanced Budget Act — The purpose of this act is to require the government to bring revenues and expenses into balance and to do so in a manner that protects the health and safety for the American citizens from emergency or unexpected circumstances. This act was introduced into the United States in 1997, and revised in 2000.

Generational Cohort — People born in the same general time span that share key life experiences (Zemke, Raines, & Filipczak, 2000).

Generation X — Individuals born between 1960 and 1980 (Zemke, Raines, & Filipczak, 2000).

Generation Y — Individuals born between 1980 and 2000 (Zemke, Raines, & Filipczak, 2000).

Health Maintenance Organizations (HMO's) — Regulatory offices that reimburse physicians based on a flat fee structure.

Job satisfaction — Refers to the degree to which people like their job (Spector, 1997).

Medical Physicians- physician classification composed of the following subspecialties: internal medicine, neurology, family practice, cardiology, nephrology, gastroenterology, and oncology.

Occupational Intimacy — Conceptual framework that is built upon the following components: nurturing environment, meaningful work, and love of work (Boverie & Kroth, 2001).

Other Physicians- physician classification composed of the following subspecialties: obstetrics and gynecology, dermatology, allergy, ophthalmology, optometry, podiatry, psychiatry, emergency medicine, rehabilitation, pain, pediatrics, ears, nose and throat, infectious disease, and radiology.

Practicing Physician — currently practicing medicine in the State of Colorado.

Surgical physicians- physician classification composed of the following subspecialties: thoracic, cardiovascular, orthopedic, neurological, anesthesia, plastics, and urology.

Veterans — Individuals both between 1922 and 1943 (Zemke, Raines, & Filipczak, 2000).

Limitations and Assumptions

Data were collected from one specific geographic area; therefore, the psychometric properties may not generalize.

Practicing physicians who participate in the study may have been inclined to respond in a way that is not reflective of their actual job satisfaction. They may have answered the way they thought the researcher wanted them to respond, thus creating a threat to validity called social response bias.

When responding to attitude scales: acquiescence, affirmation, or agreement bias may occur. Participation response rate will be adequate.

Significance of the Study

The significance of this study was to add empirically based evidence to the body of existing knowledge on the concept of Occupational Intimacy. It may assist Human Resource Specialists in understanding an emerging theory regarding overall job satisfaction. Traditional job satisfaction theories typically focused on the role of the supervisor and the employee and the impact this relationship has on overall job satisfaction (Bakke, 2005). For physicians, professors, attorneys, or any professional that may work independently, Occupational Intimacy will be applicable in understanding their level of job satisfaction. Creating an instrument that measures the changing paradigm of

job satisfaction will provide leaders a tool that is current and applicable for both the current and future work force.

Researcher's Perspective

As a doctoral student who has been employed in healthcare for over 20 years, having a better understanding of job satisfaction, especially for independent practitioners, is helpful. I have watched physician reimbursement decrease every year and also observed that physicians are caring for more acute patients. Many patients now come in with three or four chronic disease states and require complex treatment. My experience with physicians reflects their growing frustration with their work environment. Patients are demanding intense care, while the payment structure does not compensate the physicians for providing extensive care. The physicians are actually providing more care and receiving less payment. Although almost all of the physicians I have worked with state they love what they do, and find their work meaningful, the regulations, bureaucracy, and growing amount of paperwork is overwhelming and frustrating. Many physicians have shared with me that they do not feel respected any more, and their patients are more concerned about lawsuits then receiving care. Physicians also have shared that hospital administrators do not seem to appreciate their commitment. If their reimbursement decreases, administrators show little empathy. Instead, the growing sentiment from physicians reflects that they believe many administrators would replace them if they could find a cheaper alternative.

I believe that physicians are indispensable, especially physicians who have practiced for many years. Their wealth of experience and dedication can not be replaced. With the current shortage and demand for physicians, my bias is that it is essential that

administrators gain an understanding of the intrinsic factors associated with overall job satisfaction. Given my interactions with physicians, my other bias is that there is a growing level of frustration, causing a decrease in their overall job satisfaction. Administratively creating a nurturing environment and understanding the intrinsic motivators that contribute to overall job satisfaction is critical. Without this understanding it will be difficult to retain the current physician work force.

Organization of the Study

This study consists of five chapters. Chapter one contains an introduction providing vital background information with national significance regarding the current healthcare labor shortage and declining physician job satisfaction. Chapter two provides a review of the literature outlining this study with the larger framework of research literature on job satisfaction. Chapter three is devoted to the methodology of this study. Chapter four gives the results and summary data used to answer the research questions. Chapter five consists of conclusions, interpretations, and recommendations for future study.

CHAPTER 2: LITERATURE REVIEW

The purpose of this chapter is to identify and review the literature that was useful in the conceptualization and development of this research study. The literature review has three major sections. The first section will look at the evolution of job satisfaction theories. The second section will examine the antecedents of job satisfaction. The third section will review the various instruments utilized to measure job satisfaction. The fourth section will review development of psychometric instrumentation.

Historical Perspective of the Evolution of Job Satisfaction

Past theoretical frameworks must be examined to understand the contemporary approaches to job satisfaction and their impact on current business practices. The evolution of job satisfaction can be explored in terms of three historical eras. Each era had distinct characteristics and contributed to the current conceptual frameworks relating to job satisfaction.

Beginning in the early 1900's, the first historical era was known as the industrial/scientific period. Scientific management assumed that workers were to be given specific tasks and should be financially rewarded for their productivity (Chance, 2002). A successful factory, for example, needed to discover the best way of performing tasks, determine daily productivity standards, train workers to perform the tasks, and then reward their performance. Employees were viewed as interchangeable parts that could easily be replaced if needed (Chance, 2002). Predominant theorists who contributed to this era were Taylor, Fayol, and Mayo.

Fredrick Taylor, with his theory of scientific management, started the era of modern management (Sibbet, 1997). Taylor developed the scientific management approach to employee productivity and job satisfaction. Taylor is credited with four principles of management that affect employee satisfaction and overall organizational effectiveness. The first principle stated that a company should develop a science for the work of each person. Each job should have a specific task for the employee to accomplish. Secondly, a company should scientifically select the best individual for the job, train that person, and pay higher wages to reward increased productivity. The third principle emphasized the importance of cooperation. The company should cooperate with workers to ensure that the work be done in a prescribed manner. Lastly, the company should divide the work so that activities such as planning, organizing, and controlling are the responsibilities of management (Sibbet, 1997).

When organizations followed these four principles, high levels of job satisfaction and productivity could be achieved. Taylor believed that the highest productivity level could be achieved by establishing a systematic training of workers, rather than allowing employees personal discretion in their tasks (Halsall, 1998). Many theorists believed that Taylor's theories tended to dehumanize the workers (Sibbet, 1997).

Fayol was influenced by Taylor's principles. He agreed that work should be divided into specific tasks for each employee (Rodrigues, 2001). However, he expanded the role management had in organizations. Fayol believed that management had five principle roles: to forecast and plan, to organize, to command, to coordinate, and to control (Chance, 2002). In addition to identifying management roles, Fayol developed fourteen principles of management to assist leaders to be more effective. The fourteen

principles and their definitions are shown in Table 1 (Rodrigues, 2001).

Table 1

Fayol's fourteen management principles

Principle	Description
Division of Work	This principle proposes that work can be performed more efficiently and more productively if it is divided into smaller tasks, with each task assigned to a specific worker.
Managers are Empowered	Mangers require formal and informal authority to carry out their managerial responsibilities.
Discipline	Organizations require a set of clearly defined rules and procedures to assist with employee relations.
Unity of command	Each employee should have one boss.
Unity of direction	There should be only one plan and one boss for each group of activities that has the same objective.
Subordination of individual interests to the common good	The goals of the organization are more important than the interests of the individual employee.
Remuneration of personnel	Compensation for work done should be reasonable to both the employee and the organization.
Centralization	Too much centralization leads to organizational ineffectiveness.
Scaler chain	Communication in organizations should be vertical. A single chain of authority should extend from the highest level to the lowest level of the organization.
Order	Employees should be assigned to the jobs best suited for them.
Equity	Managers should be kind and just to their employees. Fairness will lead to devoted and loyal service.
Stability of personnel tenure	Organizations should focus on retaining their employees.
Initiative	Organizations require managers who have the ability to develop new ideas as well as the ability to implement them.
Esprit de corps	High morale and unity among employees is imperative.

In contrast to Taylor, Fayol believed that initiative and team dynamics were important to an organization's productivity (Sibbet, 1997). Building upon Fayol's theory, Mayo also believed that group dynamics affected productivity. Mayo believed that one could increase productivity of employees by improving their teamwork. The Hawthorne

research study confirmed Mayo's belief. The original intent of the research project was to understand what physical aspects of the work environment would enhance productivity. The underlying hypothesis for the Hawthorne project was to study if artificial lighting would raise production levels (Chance, 2002).

Specifically, the Hawthorne Works of the Western Electric Company in Chicago studied the effect of lighting on worker productivity. The premise of the study was that productivity would increase with illumination. While observing the control group, researchers found that productivity increased consistently despite physical surroundings of the workers. Subjects of the study received significantly more positive support from their supervisor than they had prior to the experiments, and it was determined by the researchers that the increased productivity was the result of psychological and social changes in the work environment. The increased recognition given to the workers and their supervisors enhanced self-esteem and interpersonal relationships (Galbraith, 2006). It was concluded that social and psychological variables had a greater impact on productivity, and more important, to effective management than the manipulation of economic and/or physical conditions (Chang, 1977; Hume, 1995; Minor, 2002).

In summary, the Hawthorne study found that employee job performance was affected by relationships between people, not the physical environment. Mayo used the Hawthorne study to demonstrate the need for teamwork and cooperation within an organization. The Hawthorne results made it clear that the group dynamics and social makeup of an organization were an extremely important force that could assist in increasing or decreasing productivity (Galbraith, 2006). Through Mayo's work, job satisfaction concepts were evolving from the environmental and economic focus, to

creating a new interest in understanding the impact human relationships have on employee performance and satisfaction (Chance, 2002).

The human relation era emerged from Mayo's work. The human relation theorists were conscious of the goals, needs, and desires of the employees (Wertheim, 2006). Multiple theorists contributed to this era: Maslow, Herzberg, MacGregor, Locke, Lawyer, Oldman, Vroom, and Skinner.

The first theorist to focus on understanding individual needs of an employee was Maslow. Maslow contributed valuable insight into the behavioral approach to job satisfaction. In the early 1950's, Maslow developed the needs hierarchy theory. This theory suggests that motivation is based on individual needs versus social needs. Maslow believed that individuals have a set of human needs that are prioritized on an ascending scale, ranging from physiological, safety, social, esteem, and self-actualization. The lower needs must be satisfied before one can satisfy a higher, more complex need.

Maslow maintained that if the physiological, safety and social needs are satisfied then the need for esteem emerges and forms the base for individual motivation. Applying this theory in job satisfaction research, employees achieve greater job satisfaction as their higher level of needs is fulfilled (Wertheim, 2006).

Herzberg, a humanist in the tradition of Maslow, developed a theory of employee motivation. Based on Maslow's hierarchy of needs, Herzberg understood that employees have various needs. Herzberg concluded that there were two sets of important influencing factors (Sibbet, 1997).

According to Herzberg, hygiene factors, also called dissatisfiers, caused dissatisfaction. Examples of hygiene factors include working conditions, salaries,

supervision, company policies, and administration. The hygiene factors may impact the lower level needs in Maslow's hierarchy, specifically physiological and safety. Motivators, which cause satisfaction, are related to the content of jobs. Examples of motivators include: achievement, recognition, opportunities for advancement, and the work itself. Motivators help the employee move into the higher levels of Maslow's hierarchy: social, esteem, and self actualization (Sibbet, 1997).

The major themes of this two-factor theory are that when workers are not satisfied with hygiene factors these become the major source of job dissatisfaction, and secondly, the presence of satisfiers tends to boost both job satisfaction and performance. Herzberg cited satisfaction and dissatisfaction as representing these two factors. The factors were two separate phenomena not found on the same continuum. He then proceeded to define the two factors in his own terms. In his paradigm, satisfaction or lack of satisfaction had to do with self-realization and fulfillment of higher order needs, whereas dissatisfaction or lack of dissatisfaction was derived from feelings that were products of the work environment (i.e., surroundings, coworkers, supervisors, etc.). Satisfiers were motivating, whereas, according to Hertzberg's theory, dissatisfiers cannot motivate but only create displeasure (Minor, 2002).

While Herzberg identified two factors that impact individual employee needs, McGregor developed a different theory that focused on two different types of employees. McGregor introduced his theories, which stated that managers tend to have two views on workers' attitudes. Theory X poses that people do not like work; thus, they are treated with little or no respect on the job. Conversely, Theory Y maintains that individuals like to work. This theory emphasizes decentralization, delegation, participation, and

consultation. It also advocates that motivating workers required allowing them to use their abilities. Consequently, employees will then feel involved as an integral part of the organization (Sibbet, 1997).

There are three characteristics of the Theory Y approach to management that influence employee satisfaction. The first characteristic is that people work and discipline themselves in the service of objectives to which they are committed. Secondly, people are committed to objectives in proportion to the rewards associated with achieving the objectives. Lastly, people are motivated to act in a specific way in an attempt to satisfy their innate needs (Chance, 2002). People react in an automatic manner to their innate drives which are present at any point in time. This approach can be described as a passive reaction.

During this same time period, behavior modification theories were being developed. In contrast to McGregor, Vroom was developing a motivational theory based on active response. He believed that humans were motivated by factors both inside and outside the individual. Vroom perceived job satisfaction to be a future event rather than a past gratification. Individuals will behave in a specific way when there is a high expectancy that such behavior will result in a desired outcome. Vroom's theory is based on the belief that employee effort will lead to performance and performance will lead to rewards (Vroom, 1964). Rewards may be either positive or negative. The more positive the reward the more likely the employee will be highly motivated. Conversely, the more negative the reward the less likely the employee will be motivated (Chang, 1977).

During the same time period, Skinner was developing a theory similar to Vroom's. Skinner's theory states that employee behaviors that lead to positive outcomes

will be repeated and behaviors that lead to negative outcomes will not be repeated. Managers should positively reinforce employee behaviors that lead to positive outcomes, but they should negatively reinforce employee behaviors that lead to negative outcomes. The foundation for reinforcement theory is the concept of operant behavior, namely that behaviors are learned as consequences from obtaining rewards or punishments. The role of the supervisor is to provide reinforcements to produce desired behaviors (Spector, 1997).

Building on the fundamental principles from Maslow, Vroom, and Skinner, Hackman and Lawler (1971), developed five propositions that they believed contributed to employee satisfaction. The first proposition focused on the idea that if individuals believe they can obtain an outcome they value by engaging in some particular behavior, the likelihood that they will actually engage in that behavior is enhanced (Hackman & Lawler, 1971). Secondly, employees will value outcomes if they satisfy physiological or psychological needs. Thirdly, if conditions at work can be arranged so that employees can satisfy their own needs by working toward organizational goals, employees will in fact tend to work toward the achievement of these goals. Fourth, lower level needs of employees can be easily met and will not serve as motivation incentives. However, motivational incentives that assist employees in feeling worthwhile and increase their self esteem will be valued by the workforce. Lastly, employees will experience satisfaction when they accomplish something that they personally believe is worthwhile or meaningful (Hackman & Lawler, 1971).

In addition to the five propositions, Hackman and Lawler (1971) proposed that four characteristics were essential to promote job satisfaction. These four characteristics

were: autonomy, task identity, variety, and feedback.

Autonomy is the degree to which individuals feel personally responsible for their work. Task identity includes having a distinct beginning and end to an assigned task. Variety was defined as having an assortment of challenging tasks in a job. Finally, as the employee completes the job, feedback on the accomplishment of the task must be given to the employee. Job satisfaction will be higher when all four core characteristics are present in a job (Hackman & Lawler, 1971).

Hackman and Oldham (1975) extended the core job characteristics defined by Hackman and Lawler (1971) to five. In addition to autonomy, task identity, variety, and feedback, task significance was needed to create job fulfillment. Task significance is the degree to which the job has a substantial impact on the lives of other people.

Unlike Hackman and Lawler (1971), who believed that it was essential to have all four job characteristics present for job satisfaction, Hackman and Oldham (1975) stated that there were three critical psychological states that needed to be present for an employee to obtain job satisfaction. First, it is essential that the employee experience meaningfulness of work. Meaningfulness is the degree to which an individual experiences the job as one that is generally meaningful, valuable, and worthwhile. Second, employees should have responsibility for outcomes of their work. Responsibility is the degree to which individuals feel personally accountable for the results of the work done. Lastly, employees should have knowledge of the actual results of their work. This is the degree to which an employee knows and understands, on a continuing basis, how effectively he or she is performing the job (Hackman & Oldham, 1975).

Through the influence of predominant theorists, the human relation era focused on the behavior of employees within the formal organizational structure (Chance, 2002). However, it was not until the open systems era that theorists began to view organizations as social living systems (Senge, 1990). The open systems era focused on organizational culture, leadership, and intrinsic values as contributors to overall job satisfaction (Ford, 2005). Predominant theorists who contributed to this era were: Bennis, House, Bass, Block, Goleman, Henderson, Boverie, and Kroth.

At the end of 1980's and beginning in the early 1990s, theorists started to view organizations as analogous to living organisms (Chance, 2002). Theorists were beginning to not only look at employee behaviors but were studying the influence that the organizational culture had on job satisfaction. Bennis (1989) claimed that successful organizations are participative and organic. Less bureaucratic and more inclusive environments had a positive impact on employee satisfaction (Bennis, 1989). Bennis (1989) believed the influence a leader has on the working environment can be very influential on employee job satisfaction. Bennis observed four themes through which a leader can affect employee well being. He believed that leaders should develop organizations where people felt significant. Secondly, leadership should focus on learning and competence. Leaders should not recognize failure as negative. Rather, leaders should view mistakes as an opportunity to learn and develop employee skills. The third theme was that employees should feel part of a community. When there was positive leadership, employees felt they were part of a team or family. Lastly, leaders should create environments where work is perceived as exciting. Organizations become a place where employees can enjoy their work and have fun (Bennis, 1989).

In addition to looking at environments as participative and organic, theorists continued to build upon Bennis's belief about the importance of leadership on job satisfaction. House (1993) introduced his theory on charismatic leadership and extended his theory to explain the relationships between leader behaviors and their effects on employee satisfaction. House believed that when a leader articulates his or her vision, shares performance expectations, and is value driven, the employee is motivated to follow and be engaged (House, 1993).

According to Bryman (1992), the charismatic leadership focus began to move job satisfaction theories away from understanding individual needs to understanding the impact of culture and leadership on employee satisfaction. Charismatic leadership has less emphasis on planning, controlling, and retaining formal power. The new leadership focus places greater emphasis on infusing vision into others, creating change, innovation, motivating and inspiring employees, and creating the empowerment and commitment of employees (Bryman, 1992). Through this new emphasis, employees will experience a greater level of job satisfaction. Several scholars have advanced additional theories that invoke the concept of charismatic leadership (Conger & Kanungo, 1988; House, 1993; Keller, 1992). There is substantial evidence that specific leadership behaviors have strong positive effects on employee satisfaction, organizations, and organizational subunits (Fiol, Harris, & House, 1999). This new leadership behavior is referred to in this new genre of theory as either charismatic (Conger & Kanungo, 1988; House, 1993), transformational (Avolio, 1988; Bass, 1997), inspirational (Secretan, 1997), or visionary (Bennis & Nanus, 1985; Galagnan, 1988). Theoretically, such leaders affect

job satisfaction in ways that are quantitatively greater than and qualitatively different from the effects specified in past theories (Avolio & Bass, 1993). This new genre of theory has been shown to be predictive of employee performance and satisfaction in two research studies (Kirkpatrick, 1992), and in organizational performance in three different studies (House & Howell, 1992; Keller, 1992; Quarstein, 1992).

Expanding upon this new paradigm, researchers in the 1990's and early 2000's started to examine the need for leaders and employees to be passionate for their work and to show emotion (Cooper, 2003; DePree, 1997; Sectretan, 1993; Rubber, 2002). The most recent wave of motivational theory contends that in addition to leadership, employee emotions are the predominating motivating factor behind human behavior and overall job satisfaction (Apps, 1996; Cameron, 1992; DePree, 1997; Hunter, 1998; Lucas, 1999; Rubber, 2002; Whyte, 1992).

In the past, psychologists treated emotions as a phenomenon separate from motivation, but the prevailing theories reflect that emotions play an essential role in motivation (Mayer, 2001). Salovey, Mayer, and Caruso (2004) developed the theory of emotional intelligence. Emotional intelligence is the capacity to use emotions to enhance thinking (Salovey, 2004). Goleman identified emotions as the controlling force motivating human behavior. Goleman (1998, 2005) has applied the model of emotional intelligence to organizational theory and to motivational theory. According to Goleman (2002), an effective leader creates a phenomenon within an organization which he termed resonance. Resonance occurs when a leader successfully unleashes a flow of "positivity" among individuals throughout an organization that motivate and/or "free" them to experience emotional well-being, while delivering optimum performance (Goleman,

Boyatzis, & McKee, 2002). In order to successfully create resonance within an organization, an effective leader has to be emotionally intelligent. Emotionally intelligent leaders possess an actual power to inspire, motivate, and arouse enthusiasm, passion, and commitment among those they work with. Conversely, a leader lacking in emotional intelligence could negatively impact the emotional climate of an organization (Posakoff, 1996).

In addition to the role of leadership in instilling passion into the work environment, one more element that appears to significantly affect job satisfaction. Often in organizations it is forgotten that meaning is the most powerful motivator of human behavior (Henderson, 2005). People gain energy and resolve if they understand how their work contributes to something beyond themselves (Wheatley, 2005).

As part of career development, individuals pursue careers that are personally meaningful. To have meaningful careers individuals will need to reflect on their experiences and make the changes necessary to keep their careers aligned with their values (Patton, 2000; Savickas, 1997). Block (1997) determined that when individuals connect what they really like to do with what they do for pay, they have achieved a connection between their spirit and their work. Meaningful careers exist when an individual values, interests, and needs align with his or her work (Wheatley, 1994).

Boverie and Kroth were the first theorists to combine passion for work, meaningful work, and environment as components contributing to over all job satisfaction. Boverie and Kroth (2001) began to look at what individuals and organizations could do to create a passionate work environment (i.e., places where people love their work). Boverie and Kroth (2001) developed the job satisfaction concept of

Occupational Intimacy which is built upon three constructs: love of work, nurturing workplace, and meaningful work.

The concept of Occupational Intimacy was based on original work by Sternberg (1987) on personal relationships. His belief that passion, intimacy, and commitment equated to an ideal relationship when balanced equally. Understanding what constitutes an ideal personal relationship, Boverie and Kroth (2001), developed a model that reflects the ideal working relationship.

Similar to Sternberg, Boverie and Kroth found that three elements form Occupational Intimacy: nurturing work environments, love of work and meaningful work. They define a nurturing environment as a place where employees feel nurtured and cared for and there is organizational respect and compassion for the employees. Love of work is defined as doing work that is exciting, motivating and instills a sense of pride and accomplishment to employees. They define meaningful work as knowing one is as essential part of the work, the employee makes a difference, and feels that his/her contribution is special (Boverie & Kroth, 2001).

Boverie and Kroth considers Occupational Intimacy an equilateral triangle of the ideal working relationship, with meaningful work, a nurturing environment, and love of work the three elements. Satisfaction will occur only if employees love what they do, do it in a place that cares about them, and in a place where they feel they are making a difference (Boverie & Kroth, 2001).

In summary, job satisfaction theory evolved from a scientific management orientation around the turn of the 20th century, moving toward charismatic leadership and passion in the workplace in the 21st century. Today organizations need to be adaptive,

flexible, resilient, learning, and intelligent, attributes found only in living systems (Pitt, 2001). We have evolved from organizations behaving like machines to organizations behaving like living systems (Wheatley, 2005). Theoretical evolution regarding job satisfaction reflects an emerging focus on intrinsic components: passion for one's work, finding meaning, and working in a supportive environment (Boverie & Kroth, 2001; Henderson, 2000; Wheatley, 1994; Whyte, 1992). Through this evolution, several antecedents link to overall job satisfaction. The next section will review the various antecedents of job satisfaction. Included in this review are inter-related studies specific to physician job satisfaction.

Antecedents of Job Satisfaction

As the previous theories reflected, there are various antecedents of job satisfaction (e.g., Fayol identified teamwork and cooperation as such antecedents. Maslow focused on individual needs, and Bennis identified the impact leadership has on job satisfaction). Although the antecedents vary, they can be classified into two broad categories which determine job satisfaction: 1) situational factors related to the job (job factors) or the job environment (facet satisfaction) and 2) individual factors related to dispositional factors, locus of control and age (Spector, 1997).

Situational factors. A Job characteristic is the first category of situational factors. According to Smith (1992), the job characteristics model shows that jobs have certain core characteristics, such as: task identity, task significance, skill variety, autonomy, and feedback. These core characteristics are necessary for the creation of psychological states underlying satisfaction (Smith, 1992). Spector (1997) reinforced the importance of job characteristics as he identified the following core characteristics as contributing to job

satisfaction: skill variety, task identity, and task significance combined created meaningfulness of work. He also emphasized that autonomy leads to feelings of responsibility (Spector, 1997).

In relating these studies to physicians', several have linked job characteristics with overall job satisfaction (Bottles, 2002; Linn, 1986; Pasternack, 1986; Reinertsen, 2003; Schulz, 1992). Autonomy and task significance were the predominate job characteristics highlighted in various physician studies (Reinstertsen, 2003; Schultz, 1992). Horowitz (1996) conducted a qualitative study to identify what doctors find meaningful about their work, between the years of 1989 and 1995.During this time he conducted workshops where he collected personal stories from physicians. The most common theme was the perceived significance of the work. Physicians found meaning in their work due to their perception that they were making a difference in someone else's life (Horowitz, 1996).

More (2001) found that in occupations where autonomy decreases, overall job satisfaction also declines. Related studies regarding autonomy and physician job satisfaction reflect similar findings. Physicians prefer to practice with a great level of autonomy; however, with the influence of managed care, their autonomy is declining (Davidoff, 2003; Levin, 1998; Reinertsen, 2003). Studies show that the decrease in autonomy from managed care continues to negatively impact physician satisfaction (Bottles, Byrnes, & Suarez, 2003; Lee, 2000; Levin, 1998). Burdie (2001) studied 154 physicians practicing in the Sacramento area. Between the years of 1995 and 2000, Burdie found that 116 physicians moved out of the area, because they didn't like how managed care had changed the practice of medicine. It is interesting to note that

Sacramento is one of the nation's top five managed care markets with a 70% market share in 1999 (Burdie, 2001).

Leigh (2002) found similar findings when studying radiologists' perception of autonomy and managed care. Radiologists' perceptions of managed care's effect on their practice had more influence on professional satisfaction than did administrative intrusions or the actual percentage of managed care patients in their practice. According to Leigh, 51% of radiologists would recommend a career in radiology to a college-age adult, which is down from 65% in 1990. Other factors associated with decreased satisfaction were increased administrative duties and government involvement (Leigh, 2002).

Accordingly, Greene (2001) found that for family practice and internal medicine physicians the likelihood is 13% greater that they will retire by age 55 if they practice in markets where managed care penetration is greater than 45%. For specialists, the chances of retirement were 17% greater than in markets with 5% or lower managed care penetration (Greene, 2001).

Another situational factor concerns work attributes... According to Kahn (1990), work role attributes have been the most extensively studied job-related antecedents of job satisfaction. Role conflict is defined by the incompatible demands around work functions and responsibilities; role ambiguity is defined as the degree of uncertainty surrounding job responsibilities and job functions; role overload is defined as excessive demands from the work role; role stress is defined as the misfit between the demands of the job environment and capabilities of the individual; and inter-role conflict represents the conflicts created by incompatible work demands stemming from work and network responsibilities (Kahn, 1990). Empirical studies have consistently indicated that people

with high levels of work life conflict tend to be less satisfied with their jobs (Bice, 1992; Boles, 2001; Frank, Brownstein, Ephgrave, & Neumayer, 1998; Thomas, 1995).

According to Clark (2005), one third of American workers, who work longer hours than their counterparts in any industrialized country, felt overwhelmed by the amount of work they had to do. Balancing one's work and family is more important to American workers than job security, working conditions, and relationships with co-workers and supervisors, according to a national poll of 1,000 adults in the workforce (Clark, 2005).

Studies related to physician work role attributes reflect similar findings (Hojat, 2002; Lowes, 1995; Wetterneck, 2002). The medical culture demands time away from families and minimal time for the individual physician. According to Williams (2001), a great physician strives for perfection, seeks and accepts responsibility, and is willing to make personal sacrifice for his or her career. However, due to self sacrifice, this opens physicians to injuries, depression, and burnout. Physicians work long hours and put great stress on themselves since working long hours isolates them from their own support (Carr, 1998). According to Stewart (2000), one half of 200 female physicians who were polled reported experiencing continual high stress levels because of their multiple roles. Of the 200 physicians, 44% felt mentally tired and 17% took antidepressant medications (Stewart, 2000).

Among physicians, burnout rates of 40%-70% have been documented (Chuck, Nesbitt, & Kwan, 1993). The high-risk groups are primarily those involved with ongoing clinical responsibilities such as emergency departments, infectious disease, medical oncology, and especially internal medicine. Internal medicine residents in one study

reported a burnout rate of 76% (Landon, 2002).

Brunk (2003) states that suicide ranks as the leading cause of premature death among physicians. Female physicians are four times as likely to commit suicide as the general population, and male physicians are twice as likely to commit suicide as compared to the general population (Williams, 2001). Depression rates range from 18% for females and 12% for male physicians. In one study, 73% of 108 responding physicians stated they had experienced symptoms of depression (Gunderson, 2001).

Pay is the third category of situational factors. The correlation between level of pay and job satisfaction tends to be small. Spector (1985) found a mean correlation of only .17 between pay and job satisfaction in three samples representing a heterogeneous collection of jobs. Pay fairness can be very important. Talented workers want to feel they are being paid comparably to what other companies pay for similar work in the industry. They also care about being paid equitably with others in similar positions (Ness, 2001).

Discrepancies in pay are prevalent in the physician community (Croasdale, 2004). Ash (2004) found that physicians who a select surgery as their specialty still earn the most, but they have one of the widest gender gaps in pay. Female surgeons nationwide earned about 63 cents for each dollar earned by male physicians in 1999 (Ash, 2004; McMurray, 2000).

In a recent study of internists in Pennsylvania (Ness, Ukoli, Hunt, Keily, & McNeil, 2000), hourly earnings were significantly higher for men, with salaries being approximately 14% higher. Grandis (2004) found that female physicians made 15-20% less a year than their male peers, and this was after taking into account professional practice hours, hours spent in surgery, type of practice and years since residency. In a

study conducted by Cleaveland, (2002), of the 4,500 female physicians studied 31% indicated that they would not become a physician again or would choose another career if given they choice.

Satisfaction with one's supervisor is the fourth category of situational factors. Research has shown that the leadership style of a supervisor directly relates to the job satisfaction of an employee (Bakke, 2005; Campbell, 1986; Lopopolo, 2002; Rauch, 2005). These studies reflect that the supervisor's ability to influence job satisfaction is highly relevant.

According to Bakke (2005), the most important aspect of leadership is letting others make important decisions. When leaders share power, everyone is in a position of equality; people feel needed and valued, and their job satisfaction is positively impacted. DePree (1997) believes that when a leader acts in a manner that assumes he is the best decision maker, employees feel devalued and not important. Not having the chance to make decisions within an organization is discouraging and leads to significant dissatisfaction.

With physicians, supervisor satisfaction is minimal. Most physicians practice independently; therefore, this facet is not applicable for the majority of physicians (Bodenheimer, 1999).

Personal Factors. Locus of control is the first category of personal factors that may affect job satisfaction. Locus of control is a cognitive variable that represents an individual's generalized belief in his or her ability to control positive and negative reinforcements in life (Spector, 1988). Locus of control has been given extensive attention demonstrating significant correlations with job satisfaction. Locus of control

seems to play a role in the development of job satisfaction (Spector, 1999). Spector (1988) developed the work locus of control scale to assess how people feel concerning control of reinforcements in the work place.

Numerous studies regarding the impact locus of control has on physician satisfaction have been completed (Carr, 1998; Cleaveland, 2002; Levin, 1998; Marr, 1999). The results indicate that physicians have multiple fears: the fear of losing existing patients to competing health plans, of losing future patients for non-participation in a plan, and Medicare's control over pricing. In addition, physician status has suffered from other factors. Scandals within health care have been widely published and episodes of fraud have become more commonly publicized. These few variables illustrate how physicians feel and are causing many physicians to believe practicing medicine is becoming a joyless practice where everyone is taking a swing at them (Marr, 1999).

Age is the second category of personal factors that may impact job satisfaction. To understand the impact age may have on job satisfaction, Zemke, Raines, and Filipczak (2000) categorized the various generations. Generations are categorized based on the period of time the age cohort was born and common influences that occurred within an average of a twenty-year time span. Each generation shares common values and experiences. Each has been influenced by certain events that occurred during their formative years (Zemke, Raines, & Filipczak, 2000). Various levels of generations working together with each bringing a different perception of the value of work, affects the work setting. Since each generation brings a different perception of the value of work, it is beneficial to examine the characteristics of each generation currently in the

work place.

The first generation classification is the Veterans. Members of the veteran generation were born between 1922 and 1943. They account for about 25% of the workforce. They are solid reliable employees who value hard work, dedication, and have a respect for authority (Zemke, Raines, & Filipczak, 2000). They value conformity, consistency, and uniformity in the workplace. This generation expected that their hard work and loyalty to the organization would be rewarded (Weston, 2001).

The second generation classification is the Baby Boomers. Baby Boomers were born between 1943 and 1960. In 2010, the baby-boom cohort will be ages 46 to 64 and are expected to dominate the workforce until 2015 (Zemke, Raines, & Filipczak, 2000). This generation is service oriented, driven, skilled at developing relationships, optimistic, and enjoys teamwork. Most boomers approach life with a great sense of idealism, and associate their work with self esteem, contribution, and fulfillment (Weston, 2001). As they reach the peak of their life stages, they will require more flexibility in their work conditions (Tulgan, 2000).

The third generation classification is the Generation Xers. Generation Xers are individuals who were born between 1965 and 1980. They are perceived as self reliant, appreciate work/life balance, and take a causal approach to authority. They tend to be independent, creative, and adaptable (Bradford, & Raines, 1992). Job hopping is a common method of career advancement for Generation Xers who also are interested in close work relationships and enjoyable work environments (Grantham, 2000).

The last classification of generations is the Generation Y. Generation Yers were born between 1981 and 1999, and the first wave of this generation is starting to enter the

labor market (Mitchell, 1995). These individuals are more affluent, more technology savvy, better educated, and more ethnically diverse than previous generations. Generation Yers are accustomed to exercising collaboration, interdependence, and networking to accomplish their tasks and goals (Bova, & Kroth, 2001). A recent study by a U.S. research firm revealed that Generation Yer's top three job requirements are: meaningful work that makes a difference to the world, working with committed colleagues who share their values, and meeting their personal goals (Tapscott, 1998).

As noted above, the various generations have different values and expectations of their work environments. At no previous time in history have so many and such different generations with such diversity been asked to work together (Zemke, Raines, & Filipczak, 2000). Due to the differences in values and views of the various generations, intergenerational conflict is occurring within organizations (Smith-Trudeau, 2001).

The medical profession is not exempt from this generational phenomenon. Lane (2001) found that diverse generations are occurring regularly in the physician community. Baby Boomer physicians compromise 57% of the total medical community. A break down reveals that specialties with the most physicians under 35 years of age are pediatrics with 24.9%, general surgery 20.3% and internal medicine comprise16.6%. Specialties with the most physicians 65 years and older are: family practice 49.2%, public health 36.5% and occupational medicine 29.8%.

Job satisfaction also varied by generations. Older physicians had higher levels of satisfaction and commitment and reported lower levels of burnout. When chairs of departments of obstetrics and gynecology were surveyed, they reported that burnout decreased with age and the length of service as a chair. This blending of generations

within the medical profession will create both challenges and opportunities in regard to overall job satisfaction (Cox, 2000).

Understanding that job characteristics, work attributes, locus of control and generational values all have an influence on job satisfaction, measuring the impact the various antecedents have on job satisfaction is important (Woods, & Weasmer, 2004). The next section will review the various instruments that measure job satisfaction.

Job Satisfaction Scales

Several hundred job satisfaction questionnaires have been used in place since the early 1960's (Balzer, 1990; Cook, 1981; Hackman & Oldman, 1975; Roznowski, 1989). Measures of job satisfaction have traditionally been either facet-free or facet specific instruments (Quinn & Gonzales, 1979). Facet-free measures are those that intend to measure a worker's overall level of job satisfaction. Facet specific measures of job satisfaction are those representing a worker's satisfaction with respect to specific job facets such as salary or hours of work.

According to Hinkin (1995), facet free measures are all variations of a single question: all in all how satisfied are you with your job? The facet-free questions therefore limit the variation of the question. Therefore, many facet free measurement tools are comprised of only a few questions. Facet free instruments have been used extensively in previous national surveys of job satisfaction. The author of this type of instrumentation reports that the facet free has a good internal consistency and is both easily administered and a valid measure of global job satisfaction.

There are six well-known common facet free job satisfaction scales that are widely utilized: Job Satisfaction survey (JSS), The Job Descriptive Index (JDI), The

Minnesota Satisfaction Questionnaire (MSQ), The Job Diagnostic Survey (JDS), The Job in General Scale (JIG), and the Michigan Organizational Assessment Questionnaire Subscale (Spector, 1997). According to Cook (1981) all of these tools are generally accepted as psychologically sound and could be used by a researcher wishing to measure overall job satisfaction. The following section will highlight the main focus of each of the six instruments.

The Job Satisfaction Survey (JSS). The Job Satisfaction Survey (JSS) assesses nine facets of job satisfaction, as well as overall satisfaction. The nine facets are: pay, promotion, supervision, fringe benefits, contingent rewards, operating condition-satisfaction with rules and procedures, coworkers, nature of work-satisfaction with the type of work done, and communication (Spector, 1985). The scale contains 36 items and uses a summate rating scale format. This format is the most popular for job satisfaction scales (Spector, 1985). Reliability of the JSS ranged from .85 to .91 (Sluiter, 2003).

The Job Descriptive Index (JDI). According to Cook (1981), the JDI may be the most carefully developed and validated job satisfaction scale, and there are over 100 published studies that used the JDI. This also may be the most popular facet scale among organizational researchers (Spector, 1985). The scale assesses five facets: Work, pay, promotion, supervision and coworkers. The entire scale contains 72 items with nine to 18 items per subscale. The only criticism is that items might not apply to all employee groups (Buffum & Konick, 1982). Reliability ranged from .70-.80 (Sluiter, 2003).

The Minnesota Satisfaction Questionnaire (MSQ). The Minnesota Satisfaction Questionnaire (MSQ) is another satisfaction scale popular among researchers. The MSQ comes in two forms, a 100 item long version and a 20 item short form. It covers 20

facets: Activity, independence, variety, social status, supervision-human resources, supervision-technical, moral values, security, social service, authority, ability utilization, company policy and procedures, compensation, advancement, responsibility, creativity, working conditions, coworkers, recognition, and achievement (Minnesota Satisfaction Questionnaire, 2005). The long form contains five items per facet; the short form contains only one.

The Job Diagnostic Survey (JDS). The JDS is an instrument developed to study the effects of job characteristics on people. It contains subscales to measure the nature of the job and the job tasks. These include: motivation, personality, psychological states, and reactions to the job (Hackman & Oldman, 1975). The individual subscales contain from two to five items each. Reliability ranged from .56-.88 (Sluiter, 2003).

The Job in General Scale (JIG). The JIG was designed to assess overall job satisfaction rather than facets. It contains 18 items. Each item is an adjective or short phrase about general aspects of the job. The total score is a combination of all items. The JIG uses three response choices. For each item the respondents are asked if they agree, aren't sure, or disagree. Negatively worded items are reverse scored, and the total score is the sum of the responses. Internal consistency coefficients ranged from .91 to .95 across several samples (Ironson, 1989).

Michigan Organizational Assessment Questionnaire Subscale. The Michigan Organizational Assessment Questionnaire contains a three item overall satisfaction subscale. These include: "All in all I am satisfied with my job;" "In general, I don't like my job;" and "In general, I like working here." For each item there are seven response choices. The items are totaled to obtain an overall job satisfaction score. Reliability

ranged from .77-.87 (Jex & Gudunowski, 1992).

In summary, the six scales have distinct areas of measurement to quantify job satisfaction. In reviewing these six scales, the measurement items focus on overall satisfaction, supervisory relationships and work facets, such as company policy and procedures, compensation, advancement, responsibility, creativity, and working conditions, but none of them measure meaningfulness or love of work (Sluiter, 2003). According to Henderson (2000) when the current literature begins suggesting deeper meaning in work, the traditional studies and assessment techniques regarding job satisfaction begin to have less value. With the emerging theoretical constructs that focus on intrinsic satisfiers, it is becoming apparent that new job satisfaction instruments need to be developed. The following section will review the elements that are necessary in the development of psychometric instrumentation: types of measurement scales, scaling techniques, establishing validity and reliability within an instrument.

Development of Psychometric Instrumentation

Measurement scales are commonly utilized in psychometric instruments. From the low to high levels, the scales of measurement fall into four major classes: nominal, ordinal, interval and ratio. Nominal scales define whether or not two objects are equivalent to one another with respect to a critical attribute. In ordinal scales, numbers are assigned to objects according to rank order on a particular attribute. In interval scales, equal numerical distances on the scale represent equal amounts with respect to the attribute of the object. Ratio-level scales give all information that is provided by interval-level scale, but in addition they have absolute zero points, where zero represents an absolute absence of the relevant attribute (Nunnally & Berstein, 1994).

Frequently used scaling techniques of measuring attitudes are Thurstone's Equal-Appearing Interval technique, Likert's Summated Rating technique, Osgood's Sematic Differential technique, and the Guttman Scaling Technique (DeVellis, 1991). The major purpose of Thurstone scaling is to specify the location of each item on the evaluative dimension by assigning a scale value to the item. A Guttman scale includes a series of items identifying progressively higher levels of an attribute. A semantic differential scale consists of bipolar or unipolar adjectives such as good-bad, extremely likely-extremely unlikely, important-unimportant, and strong-weak (Polit & Beck, 2004). A Likert scale consists of several declarative items that express a viewpoint on a topic followed by response options that indicate varying degrees of agreement (Anderson 1988).

Several differences exist among the four scaling techniques. First, the semantic differential scale can be differentiated from the other three types in terms of format. A semantic differential scale consists of a set of bipolar (e.g., good-bad, nice-awful) or unipolar evaluative adjectives (e.g. clean-unclean). Thurstone, Likert and Guttman scales contain simple sentences or statements, but usually eliminate adjectives. (Nunnelly & Berstein, 1994). Other differences among Thurstone, Likert, and Guttman scales can be seen by viewing attitude as existing along an underlying continuum. The placement of the statements along the continuum differentiates Likert scales from Thurstone and Guttman scales. The statement is indicated above the continuum, and the midpoint of the continuum indicates change in direction. The distance from the midpoint in either direction indicates intensity. Statements included in Likert scales are written at the two ends of the continuum. (Anderson, 1988). In contrast, statements included on Thurstone and Guttman scales are written to represent points all along the continuum.

Guttman scales are distinguished from Thurstone scales in the extent to which the scale is cumulative. Since Guttman scales are cumulative, a positive response to a statement positioned somewhere along the continuum implies a positive response to all statements to the left of that statement on the continuum. In contrast, Thurstone scales are noncummulative (Anderson 1988). Both the Thurstone and Guttman scales measure attitudes, but their applicability is rather limited. According to Nunnally (1978) developing a true Thorstone scale is considerably harder than describing one. Finding items that consistently "resonate" to specific levels of the phenomenon is difficult. The practical problems associated with the method often outweigh its advantages unless the researcher has a compelling reason for wanting the type of calibration that it provides (DeVellis, 1991).

For Guttman scales, some experts (DeVellis, 1991; Nunnally & Bernstein, 1994) caution against using this scaling approach for measuring attitudes. According to Devellis (1991) Guttman scales do not work well when the phenomenon of interest is not concrete. Nunnally & Bernstein (1994) also suggested that the scaling model underlying the Guttman scale is not very applicable to psychological measurement. Sine the applicability of the two scales seems rather limited, with both the Thurstone and the Guttman scales, the disadvantages and difficulties often outweigh the advantages.

Of the four scales, the Likert scale is the most commonly used scaling technique in psychological and health care research (Streiner & Norman, 1995). The Likert scale allows a representative wide range of opinions and attitudes about specific subject matter (Gliner & Morgan, 2000). The first step in constructing a Likert scale is to establish a large pool of items. Thurstone and Likert have suggested various informal criteria for

writing and editing statements to be used in the construction of attitude scales.

The next step is to select items for constructing the Likert scale from the item pool. For each item, the investigator first decides whether it indicates a favorable or unfavorable attitude toward the object in question (Nieswiadomy, 2001). If an item appears to indicate a neutral attitude, it should be eliminated. The statements that are fairly strong are often useful and should be kept in the scale since those items usually can accurately reflect true differences of opinion (DeVillis, 1991).

A good Likert scale item should state the opinion, attitude, belief or other constructs under study clearly (Gabbe & Wolf, 1993). The number of items that are included on the instrument is critical. Since each item by itself is an imperfect indicator of its underlying construct, more than two items should be developed to measure the construct. The use of multi-item measures improves the accuracy and reliability of the measurement and reduces measurement error (Pet, Lackey, & Sullivan, 2003). Ideally, an instrument should have between 10-15 items per component to be considered sufficient for measurement (Pett et al., 2003). Once the researcher has identified the appropriate items that will be placed on the instrument, the quality of the scale can be evaluated by its psychometric properties.

Scale development is important in developing a psychometric instrument, however, a newly developed instrument must be reliable to make sure the scores are trustworthy and provide validity to gather the information the researcher intends to discover (Oberst, 1994). Reliability is a fundamental issue in psychological measurement and scale reliability (DeVillis, 1991).

According to Gliner and Morgan (2000), internal consistency reliability is the

most frequently used measure of reliability in scale development situations. Cronbach's alpha is the most common measure of this type of reliability (Gliner & Morgan, 2000). Coefficient alpha assesses the extent to which the items on a test correlate with one another. The higher the intercorrelations between pairs of items, the higher the item-to-item internal consistency of the instrument. The value of Cronbach's alpha is affected by both the number of items and their average correlation.

After reliability has been established, a newly developed instrument must be shown to be valid. Validity is a matter of degree rather than an all-or-none property, and validation is an unending process. There are three major types of validity that have been commonly used to evaluate instruments in psychometric literature: content, criterion-related, and construct validity (Nunnally & Bernstein, 1994).

Content validity includes examining whether the operationalization of a construct adequately represents the domain of coverage of the construct (Cook & Campbell, 1979; Agarwal & Venkatesh, 2002). In order to ensure content validity, the construct and its domain should be well defined. A panel of experts in the content area is asked to evaluate individual items on the new measure as well as the entire instrument. Two key important issues in the evaluation are whether individual items are relevant and appropriate for the construct, and whether the items adequately measure all dimensions of the construct (Polit & Beck, 2004). If instrument items are derived from a comprehensive analysis of relevant literature and are evaluated by expert judgment, content validity can be ensured (Emory and Cooper, 1991).

Criterion related validity refers to validating the instrument against some form of external criteria. There are two types of criterion validity: predictive evidence and

concurrent evidence (Gliner & Morgan, 2000). Predictive evidence assesses the instrument's ability to predict something it should theoretically be able to predict. For example, one might theorize that a measure of math ability should be able to predict how well a person will do in an engineering-based profession. If there is a high correlation between the math scores and their salaries as engineers, this high correlation would provide evidence for predictive validity (Trochim, 2006). A challenge with predictive evidence is the time delay in obtaining results. Concurrent evidence is a second type of criterion validity that allows a researcher to simultaneously compare the instrument with external criteria. To assess the concurrent validity of a new measure of empowerment, one might give the measure to both migrant farm workers and to the farm owners, theorizing that the measure should show that the farm owners are higher in empowerment (Trochim, 2006). The challenge with both concurrent and predictive evidence is finding an external scale that measures the appropriate criterion.

Lastly, construct validity is the degree to which a test measures what it claims to be measuring (Brown, 1996). When applying construct validity to an instrument, there is a requirement that the construct the instrument is measuring is guided by an underlying theory. Construct validity of an instrument can be achieved by three processes: convergent evidence, discriminant evidence, and factorial evidence (Gliner & Morgan, 2000).

Trochim(2006) defines convergent and discriminant evidence as two inter-locking propositions: measures of constructs that theoretically should be related to each other are, in fact, observed to be related to each other (convergent) and measures of constructs that theoretically should not be related to each other are, in fact, observed to not be

related to each other(discriminant). Factorial evidence is determined when a construct is complex, and several factors of it are measured. If the clustering of items supports the theory-based grouping of items, factorial evidence is provided. Factor analysis is one of the methods of demonstrating factoral evidence (Gliner & Morgan, 2000).

Factor analysis is widely used in psychology and the social sciences. According to Nunnally and Berstein (1994), factor analysis can be used for theory and instrument development. In some branches of psychology, especially those in which tests or questionnaires are being developed it is a necessity (Kline, 2000). Factor analysis essentially consists of methods for finding clusters (or factors) from related variables (or items). Each cluster consists of a group of items that correlate more highly among themselves than they do with items outside the cluster.

Summary

In summary, job satisfaction theory evolved from a scientific management orientation around the turn of the 20th century, moving toward charismatic leadership and passion in the workplace in the 21st century. According to Boverie and Kroth (2000), theoretical evolution regarding job satisfaction reflects an emerging focus on intrinsic components: passion for one's work, finding meaning, and working in a supportive environment. In order to develop a theoretical framework into a substantial construct and theory, an instrument needs to be developed, empirically tested, and validated (Henderson, 2000; Sedjaya, 2002). Without an empirically tested instrument, the emerging concept of Occupational Intimacy will not be substantiated.

Therefore the focus of this research study will be to develop an instrument to measure the three component of Occupational Intimacy: meaningful work, love of work

and nurturing environment. In addition, the researcher will evaluate the findings from the study to see if the results differ across age, gender and specialties of the physician sample.

CHAPTER 3: METHOD

This chapter will present a comprehensive review of the methods and procedures used in this study. The research design and instrument development will be discussed. In addition, sampling, data collection methods, and data analysis for the four research questions will be reviewed.

Research Design and Rationale

A survey design was utilized to develop and validate the components of Occupational Intimacy. According to Creswell (2003), a survey design approach provides a quantitative description of patterns or perceptions of a population by studying a selected group of that population. Similarly, Kline (2000) notes that a survey research approach is the best method available for collecting original data for describing a group's perception, attitude, and behavior. The survey design approach is used to describe and examine social phenomena and is appropriate for research about self-report beliefs and practices (Kline, 2000).

Instrument Development and Content Validity

There are various measurement techniques that can be utilized when developing an instrument. Some of the popular scaling approaches include: Thurstone scaling, Guttman scaling, graphic rating scales, visual analog scales, and the Likert scale. The Likert scale is the most commonly used scaling technique in psychological and health care research (Streiner & Norman, 1995). A five point Likert scale was utilized in this study.

The researcher followed a three step process in establishing content validity, as outlined by Gliner and Morgan (2000). The first step was to define the concept that the researcher was attempting to measure. The concept that the researcher was to measure was Occupational Intimacy. The two theorists, Boverie and Kroth, discussed with the researcher that there had not been a quantitative instrument developed to measure their concept of Occupational Intimacy.

The second step was to complete a literature search to see how this concept was represented in literature. The researcher found various articles and books that were conceptually written about each component: love of work, (Apps, 1996; Bakke, 2005; Cooper, 2003; Whyte, 1992) meaningful work (Block, 1997; Horowitz, 1996; Wheatley, 2006), and nurturing environment (Chang, 1977; Konrad, & Pathman, 2001; Roznowski, 1989). In addition, the researcher reviewed Boverie and Kroth, the theorists' website, www.LeadingWithPassion.com and the "Personal Occupational Intimacy Inventory" on their web site, the inventory provided questions related to their theory. Boverie and Kroth also wrote a book *Transforming Work* that describes their concept of Occupational Intimacy, which the researcher reviewed in detail.

Lastly, the researcher then reviewed the six job satisfaction surveys to identify if the tools had questions representing Occupational Intimacy: Job Satisfaction survey (JSS), Job Descriptive Index (JDI), Minnesota Satisfaction Questionnaire (MSQ), Job Diagnostic Survey (JDS), Job in General Scale (JIG), and the Michigan Organizational Assessment Questionnaire Subscale. No single source contained adequate questions to measure Occupational Intimacy. Since the researcher did not find an appropriate instrument, the third step was to develop items that would measure the three components

of Occupational Intimacy: love of work, meaningful work and a nurturing environment.

The researcher developed the initial instrument by integrating the questions and statements from the theorists work, the literature review and then modified questions that appeared to be applicable from the preexisting instruments: Job Satisfaction Survey (JSS), Minnesota Satisfaction Questionnaire (MSQ), and Job Diagnostic Survey (JDS). The researcher attempted to develop items that would be specific to the physician sample, and also relate to the three components of Occupational Intimacy (see Appendix A). The final step was to take the list of items and have Boverie and Kroth review the items for representativeness of the concept.

The researcher randomly ordered the items and sent the instrument independently to Boverie and Kroth (see Appendix B). They were asked to place each item under the appropriate component. The experts independently returned their questionnaires to the researcher. The researcher then identified which items were to be placed with each component and the theorists were also asked to comment on any format changes that should be made to the instrument.

If consensus was not reached between the content experts, the researcher resubmitted the questionnaire until consensus was reached. The researcher made format changes based on the feedback from the theorists. Both Boverie and Kroth identified that the researcher had duplicated the question "I am able to make a difference everyday." The theorists' also recommended that twelve questions be deleted due to repetition or lack of clarity (see Appendix C).

The theorists' identified that the researcher had not labeled the components correctly, in the revised instrument; therefore, the component passion was relabeled love.

Through the consensus of the theorists' the final instrument consisted of 37 items. Eleven items measured the component love of work. Examples of these items are the following: "I enjoy my work;" I find my work is interesting;" and "I love what I do." Fourteen items measured the component of meaningful work. Examples of these items are the following: "My work contribution is special;" "I believe my job is important;" and "Most of the work I do seems useless or trivial." Twelve items measured nurturing environment. Examples of these items are the following: "I feel valued at work;" "I feel supported in my work environment;" and "the clinic/office or hospital is a pleasant place to be" (see Appendix D). When Likert scale items are used, 10-15 items per component is considered to be sufficient (Pett et al., 2003). Since each component had over ten items, once consensus was reached, a pilot test was completed.

Pilot Testing

Research reflects that pilot testing a new instrument is imperative (DeVillis, 1991; Kirchoff, 1999; Nieswiadomy, 2001; Rosenthal & Rosnow, 1991). Pilot testing can determine the amount of time it takes to complete the instrument. It also tests the clarity of the instructions and identifies if the participants found anything objectionable about the instrument (Wilson, 1985).

A pilot test was completed utilizing a subset of the physician community from Fort Collins, Colorado. The physicians were asked to complete the instrument and identify readability of the questionnaire and state if they found anything objectionable about the instrument. Feedback consisted of reducing the font so that the questionnaire would be on one page and allowing the physicians to return the survey via self addressed envelope, email and/or fax. These changes were included prior to distribution of the

questionnaire. The final instrument and instructions are found in Appendix E.

Sampling

A convenience sample, which is a nonprobability sampling technique, was utilized in this study. The environments in which physicians practice and the mechanisms for reimbursement vary across the county (Zugar, 2004). Since reimbursement varies across the country, limiting the sample to Colorado allowed the physician sample to have similar reimbursement challenges. In addition, the researcher selected independent practitioners, not employed physicians. The reason the researcher wanted to minimize variation was to have similar physicians complete the questionnaire to limit variation on the interpretation of the instrument.

The 1,250 potential participants for the study were physicians who practiced independently in Colorado. Subjects were recruited by mailing postcards to a random sample of physicians who were listed on the Blue Cross web site. A total of 383 surveys were returned for an overall response rate of 31%. Two of the questionnaires were disqualified due to incomplete data, leaving 380 completed surveys for data analysis. The final response rate for data collection of usable instruments was 30%.

Procedure

The researcher followed a four-phase administration process as recommended by Salant and Dillman (1994). The first mailing contained a post card or e-mail informing members of the sample of the upcoming survey. The second mailing contained the instrument, a demographics information sheet, cover letter and a self addressed envelope. The demographics information sheet was used to provide descriptive data on the actual sample. The third mailing consisted of a follow up postcard mailed to the subjects who

did not return their questionnaire. The final mailing contained a demographic sheet, a second copy of the cover letter, the questionnaire, and a self addressed envelope to subjects who had not returned any materials. The final mailing was two weeks after the follow up postcard mailing.

Construct Validity

For research question two, *" Is there evidence to support the construct validity of the Occupational Intimacy instrument?"* Factor analysis was completed. The factor analysis examined the degree to which the items within the instrument measured the three components of Occupational Intimacy: love of work, meaningful work and a nurturing environment.

Data Analysis

According to Nunnally and Berstein (1994), factor analysis can be used for theory and instrument development. Factor analysis will be utilized to validate the Occupational Intimacy instrument. Specifically, the analysis addressed the three components of Occupational Intimacy: nurturing environment, meaningful work and love of work.

Factor analysis computes a factor loading for each item. Factor loadings are computed as Pearson correlation coefficients between the survey item and the estimated factors or components (Kline, 1994). Factor loadings are measures of how well a particular item loads on a specific factor or component (Child, 1990). This analysis enables the researcher to assess whether the suggested three components of the Occupational Intimacy instrument indeed emerge. The higher the factor loading, the greater the contribution of an item to a given factor. Weak loadings are those that are less than .30. Pett (2003) suggest dropping items that do not load reasonably on any factor.

Thus, items that had a factor loading of less then .30 were dropped from the questionnaire. Factor analysis computes eigenvalues the amount of variance explained for each component. Only components with eigenvalues equal or greater than 1.0 should be included (DeVellis, 1991). For this study, three components that had eigenvalues greater than 1.0 were retained.

It is at this point that the researcher's job is to list and evaluate the clustered items to identify their shared common meaning in relationship to themselves. The description and naming of the factors is then performed. Ideally, the factors empirically discovered should correspond with the derived domains or areas of interest that were analyzed during the expert content evaluation phase (Gable & Wolf, 1993).

Reliability

Reliability is a fundamental issue in psychological measurement and scale reliability (DeVillis, 1991).When testing a new instrument, reliability focuses on internal consistency. According to Gliner and Morgan (2000), internal consistency reliability is the most frequently used measure of reliability in scale development situations. For research question three, *"What is the internal consistency of the alphas for each of the three scales (meaningful work, love of work and nurturing environment) within the Occupational Intimacy instrument?"* Cronbach's alpha is the most common measure of this type of reliability. The study adopted the commonly accepted threshold of .80. Repeated calculations of Cronbach's coefficients using SPSS's *alpha if item delete* were performed to achieve the optimal number of items per factor with the highest alpha.

In addition, a comparison of the Cronbach coefficients was completed to identify if there was significant difference between the theorist's placement of the items and the

factor analysis sorting of each construct. A Pearson correlation was completed to compare the theorists' items for each component: love of work, meaningful work, and nurturing environment compared to the outcome of the factor analysis. The Pearson correlation is widely used to measure the reliability and validity. The researcher utilized the Peason correlation to test the relationship between the two versions of the instrument. Pearson r values that are close to +1 are considered to be strong positive relationships between the two variables. The higher the correlation, the higher the likelihood the final instrument constructed through the factor analysis measured the same components that the theorists' instrument had identified.

To address the fourth research question, *"How will the findings differ across age, gender and specialties of the physician sample?"* Nine one-way ANOVA's were completed to determine if there were statistically significant relationships between the independent variables of age, gender and specialty, and the three dependent variables: love of work, meaningful work and nurturing environment.

A demographic questionnaire was used to collect data concerning each participants age, gender, and type of specialty. This enabled the researcher to summarize the demographic data and identify frequency distribution, percentages, means, and standard deviations for the sample studied.

Summary

This chapter reviewed the methods and procedures utilized in the development and testing of the Occupational Intimacy instrument. The research design, sampling, collection, and analysis of data were discussed. The next chapter will discuss the findings of the study.

CHAPTER 4: RESULTS

Introduction

This chapter presents the results of this study which developed and validated an instrument that measured the concept of Occupational Intimacy. A demographic profile of the participants in the study is offered. This study addressed four research questions designed to evaluate the reliability and validity of the Occupational Intimacy instrument. The four research questions were:

1. Is there evidence to support the content validity of the Occupational Intimacy instrument?
2. Is there evidence to support the construct validity of the Occupational Intimacy instrument?
3. What is the internal consistency of the alphas for each of the three scales (meaningful work, love of work and nurturing environment) within the Occupational Intimacy instrument?
4. How will these findings differ across age, gender and specialties of the physician sample?

The data were collected over a four month period from February to May 2006. All data were analyzed using the Statistical Package for the Social Sciences (SPSS).

Sample Characteristics

The 380 participants of this study's convenience sample were physicians who actively practiced medicine in Colorado. Frequency and descriptive data were used to

create a demographic profile of the participants compared with the general population of practicing physicians is presented in Table 2.

Table 2

Final sample characteristics

Characteristic	Sample *N*	%	General Population*	%
Age	380		902,100	
25-45	157	41	207,483	23
46-55	130	34	216,504	24
56-85	93	25	478,113	53
Sex				
Male	289	76	657,150	73
Female	91	24	244,950	27
Specialty				
Medicine	133	35	333,617	37
Surgical	126	33	207,483	23
Other	121	32	361,000	40

**General population data source: American Medical Association, 2005.*

The researcher collapsed the ages so that they closely reflected the definition of the various generational groupings (Zemke, Raines, & Filipczak 2000). The first age group was categorized as Generation X: (25-45, n=157, 41% of the sample), the second age group was Baby Boomers: (46-55, n=130, 34% of the sample), and the last age group was Veterans: (56-85, n =93, 25% of the sample). According to the American Medical Association, in 2005, approximated 23% of the practicing physicians in the United States fell in the age range of 25-45, 25% were classified in the age group between 46-55, and 53% of the practicing physicians were in the 56-85 ages grouping. Thus, the present sample was younger than the general population. The sample was 24% female and 76% male; this is similar to the general population that reflects 73% male and 27% female.

Due to the small sample size for various specialties, the researcher collapsed the specialty groups into three categories. The medical category included internal medicine,

neurology, family practice, cardiology, nephrology, gastroenterology, and oncology. This group represented 35% of participating physicians in the sample. According to the American Medical Association, in 2005, approximately 37% of the practicing physicians in the United States comprised this specialty grouping. The surgical category included thoracic, cardiovascular, orthopedic, neurological, anesthesia, plastics, and urology. This group represented 33% of participating physicians. According to the American Medical Association, in 2005, approximated 23% of the practicing physicians in the United States comprised this specialty grouping. The third category was labeled "other," which included obstetrics and gynecology, dermatology, allergy, ophthalmology, optometry, podiatry, psychiatry, emergency medicine, rehabilitation, pain, pediatrics, ears, nose and throat, infectious disease, and radiology. This group represented 32% of the sample. According to the American Medical Association, in 2005, approximately 40% of the practicing physicians in the United States comprised this specialty grouping. Thus the sample had a slightly larger surgical specialty than the general population, and slightly smaller "other" physician group than the general population.

Content Validity

Research Question 1: "Is there evidence to support the content validity of the Occupational Intimacy instrument?" The content validity of the Occupational Intimacy instrument was assessed by Boverie and Kroth, two theorists who developed the concept of Occupational Intimacy. They were asked to assess independently the items of the instrument for clarity of writing and relevance to each of the constructs within their theoretical concept. The original questionnaire had 49 items to measure the concept of Occupational Intimacy. Through the consensus of the theorists, 12 items were

eliminated. The final instrument consisted of 37 items; 11 items measured love of work, 14 items measured meaningful work, and 12 items measured nurturing environment.

In summary, the results of the expert review produced a 37 item Occupational Intimacy instrument. The two theorists independently agreed that the items did comprehensively address the construct of Occupational Intimacy.

Construct Validity

Research Question 2: "Is there evidence to support the construct validity of the Occupational Intimacy instrument?" Factor analysis was performed to assess the internal structure of the Occupational Intimacy instrument. The data was evaluated for multivariate normality and sampling adequacy, using Kaiser-Meyer-Oklin (KMO) Measure of Sampling Adequacy and the Barlett's Test of Spericity. The KMO for the Occupational Intimacy instrument was .945 which is considered adequate, and the Bartlett's Test demonstrated multivariate normality ($p < .001$).

Factor Analysis

A principal components analysis with varimax rotation was conducted to assess the underlying structure for the 37 items of the Occupational Intimacy instrument. Three factors were requested, based on the fact that the items were designed to index three components: love of work, meaningful work and nurturing environment. After rotation, the first factor accounted for 21.3% of the variance, the second factor accounted for 17.3%, and the third factor accounted for 15.1%. The three factor solution explained 54% of the cumulative variance. Table 3 summarizes the three components with the respective eigenvalues, the percent of variance, and the cumulative percent.

Table 3

Eigenvalues, % of variance, cumulative %

Component	Eigenvalue	% of Variance	Cumulative %
1	7.87	21.27	21.27
2	6.39	17.28	38.55
3	5.59	15.11	53.66

Factor Interpretation

To name the cluster of items within each component from the factor analysis, the researcher took a three step approach. First, the researcher sorted each item by its highest loading. Second, the researcher listed each of the items Boverie and Kroth identified with each component: love of work, meaningful work, and nurturing environment. Finally, the researcher labeled each factor with items that closely replicated the theorists' original mapping with the items that had the highest loading (see Table 4).

Component one was labeled "meaningful work." Of the original questionnaire items, nine of the fourteen were consistently mapped between the theorists' and the researcher's factor analysis. The factor loadings ranged from .503-.762.

Component two was labeled "love of work." Of the original questionnaire items, nine of the eleven were consistently mapped between the theorists' and the researcher's factor analysis. The factor loadings ranged from .568-.728.

Component three was labeled "nurturing environment." Of the original questionnaire items, nine of the twelve consistently mapped between the theorists' and the researcher's factor analysis. The factor loadings ranged from .440-.742.

The following question was eliminated due to low factor loading of .382: I have the training and resources I need to deliver care to my patients.

Table 4

Labeling of each exploratory factor

	Meaningful Work	Love of work	Nurturing Environment	Theorist
Meaningful Work:				
I believe the result of my work significantly affect the lives or well being of people	.762			Meaningful
I feel that most of the things I do on my job gives me a sense of accomplishment	.754			Meaningful
My work contribution is special	.746			Meaningful
I believe my job is important	.743			Meaningful
I am using my talents to add value to people's lives	.696			Meaningful
I feel that I am useful and needed	.668			Meaningful
I am able to make a difference every day	.658			Meaningful
I feel a sense of pride and/or accomplishment as a result of the type of work that I do	.609	.407		Meaningful
I find my work creates learning opportunities for me	.588			Love
I find my work is interesting	.583	.419		Love
I feel that I am accomplishing something worthwhile at work	.531			Meaningful
I find my work challenging	.503			Love
Love of Work:				
I can not imagine another career making me as happy as being a physician		.728		Love
The major satisfaction in my life comes from my job		.722		Love
I would rather be a physician than anything else		.719		Love
I love what I do	.460	.684		Love
Because of my commitment to patients I would not choose another career.		.683		Meaningful
I experience true joy at work	.409	.678		Love
My work is my most rewarding experience		.674		Love
I find joy in my work	.425	.651		Love
Practicing medicine makes me happy	.397	.646		Love
My job is fulfilling	.540	.572		Meaningful
I enjoy my work	.467	.568		Love
Nurturing Environment:				
I feel supported in my work environment			.742	Nurturing
The clinic/office or hospital is a pleasant place to be			.660	Nurturing
Caring and flexible			.657	Nurturing
The policies and procedures that I deal with are annoying			.643	Nurturing
I find that every time I try to do something at work I run into obstacles			.605	Love
Where I work the people are competent			.605	Nurturing
I feel valued at work	.437		.602	Nurturing
The physical surroundings where I work are pleasant			.517	Nurturing
I find some of the people I deal with are not competent			.506	Nurturing
I often have to waste time doing administrative tasks at work			.498	Nurturing
I feel respected for what I do	.426		.480	Love
Most of the work I do seems useless or trivial	.413		.456	Meaningful
I work collaboratively with my colleagues			.440	Nurturing
I have the training and resources I need to deliver care to my patients			.382	Nurturing

In summary, three factors emerged that accounted for 54% of the variance. The

factor analysis revealed 36 items that loaded from .440 to .762 on three factors with Eigenvalues greater than 1.0.

The final instrument had 36 total items to measure the concept of Occupational Intimacy. For the subscales, eleven items measured love of work; twelve items measured meaningful work; thirteen items measured nurturing environment. The results of the factor analysis provided evidence to support the construct validity of the Occupational Intimacy instrument.

Reliability

Research Question 3: *"What is the internal consistency of the alphas for each of the three scales (meaningful work, love of work and nurturing environment) within the Occupational Intimacy instrument?"* Cronbach's alpha was used to assess the internal consistency of the data obtained from the Occupational Intimacy instrument. Each subscale was analyzed for scale-level reliability with the SPSS syntax command of "alpha if item deleted." Items that contributed a large amount of variance if deleted had corrected item-total correlations of less than .40 or showed significant improvement in alpha if item deleted were reviewed. Table 5 shows the scale level reliability analysis for the subscales. All of the Cronbach alpha values supported combining the items into their respective scales. No factors or factor combinations exhibited items that needed to be considered for deletion based on the scale-level reliability analysis.

Table 5

Reliability Analyses of Occupational Intimacy Subscales

	Alpha	Item Total correlation	Cronbach's alpha if item is deleted
Meaningful Work:	.918		
I believe my work significantly affect the lives of people		.709	.911
Most of the things I do on my job gives me a sense of accomplishment		.626	.913
My work contribution is special		.730	.908
I believe my job is important		.690	.911
I am using my talents to add value		.689	.910
I feel that I am useful and needed		.668	.911
Make a difference every day		.700	.910
I feel a sense of pride/accomplishment as a result of the type of work that I do		.712	.910
work creates learning opportunities		.552	.915
I find my work is interesting		.678	.910
I feel that I am accomplishing something worthwhile at work		.791	.906
I find my work challenging		.503	.917
Love of Work:	.938		
I can not imagine another career making me as happy as being a physician		.748	.933
Major satisfaction in life comes from my job		.598	.939
Rather be a physician than anything else		.762	.932
I love what I do		.840	.928
My commitment to patients I would not choose another career.		.776	.931
I experience true joy at work		.810	.929
My work is rewarding experience		.582	.940
I find joy in my work		.801	.930
Medicine makes me happy		.791	.931
My job is fulfilling		.765	.933
I enjoy my work		.762	.932
Nurturing Environment:	.863		
I feel supported in my environment		.730	.843
The clinic/office is a pleasant place		.609	.849
Caring and flexible		.555	.851
Policies/ procedures are annoying		.529	.853
I run into obstacles		.555	.851
Where I work people competent		.552	.852
I feel valued at work		.677	.845
Physical surroundings are pleasant		.437	.857
The people are not competent		.413	.862
I waste time doing admin.tasks at work		.439	.859
I feel respected for what I do		.575	.850
Work I do seems useless or trivial		.502	.854
Work collaboratively with colleagues		.401	.859
I have the training and resources I need to deliver care to my patients		.373	.860

In addition, the researcher completed a reliability test on the original items that were identified by the theorists. Reliability tests were also completed for each of the subscales derived through the factor analysis. The alpha coefficients ranged from .55-.94 on all of the subscales within the measurement tool (see Table 6).

Table 6

Reliability of Items

Scale	Cronbach Alpha Boverie/Kroth	Cronbach alpha Factor analysis
Meaningful work	.85	.92
Love of Work	.87	.94
Nurturing	.55	.86

A Pearson correlation was completed to compare the items that the theorists' had identified would measure each component of love of work, meaningful work, and nurturing environment, compared to the outcome of the factor analysis. Pearson *r* values that are close to +1 are considered to be strong positive relationships between two variables. The higher the correlation, the higher the likelihood the final instrument constructed through the exploratory factor analysis measured the same components that the theorists' instrument had identified. The Pearson *r* values ranged from .970 to .985 (see Table 7).

Table 7

Pearson Correlations Between Boverie/Kroth's Original Instrument and Final Instrument (n=380)

Boverie/Kroth	FactorAnalysis-Love of work	Factor Analysis-Meaningful work	Factor analysis-Nurturing
Love of Work	**.980**	.798	.635
Meaningful work	.798	**.970**	.606
Nurturing	.579	.544	**.985**

*$p<.001$

Comparison of Subgroup Participant Results

Research Question 4: "How will the findings differ across age, gender and specialties of the physician sample?" Nine one-way ANOVA's were completed to determine if there were statistically significant relationships between the independent variables of age, gender and specialty, and the three dependent variables: love of work, meaningful work and nurturing environment. Tables 8-10 present the descriptive information. Table 8 reflects the mean scores and standard deviations for the two genders on the three components of Occupational Intimacy: meaningful work, love of work, and nurturing environment.

Table 8

Mean Importance Ratings for Each Gender

Variable	Males (n=289)	Females (n=91)
Meaningful Work		
Mean	1.65	1.52
Standard Deviation	.54	.44
Love of Work		
Mean	2.23	2.09
Standard Deviation	.82	.77
Nurturing Environment		
Mean	2.26	2.27
Standard Deviation	.53	.52

The mean scores for male and female satisfaction with the three components of meaningful work, love of work and nurturing environment were measured on a scale of 1-5, with 1=strongly agreed, and 5=strongly disagreed. The mean score on the extent to which males perceived their work as being meaningful was 1.65, compared to females with a mean score of 1.52. The males' mean score on perceived love of work was 2.23, compared to females' mean score of 2.09. Lastly the males mean score on perceived

work environment as being nurturing was 2.26, compared to the females' mean score of 2.27. It appears that the mean gender scores were very similar.

Table 9 reflects the mean scores and standard deviation for the three age groups and the three components of Occupational Intimacy: meaningful work, love of work, and nurturing environment. In Table 9 with the mean scores on a scale of 1-5, with 1=strongly agreed, and 5=strongly disagreed. The mean score on how 25-45 year olds perceived their work as being meaningful was 1.68, compared to 46-55 year with a mean score of 1.67 and 1.62 mean score for the 56-85 age group. The mean score on how 25-45 year olds perceived their love of work was 2.34, compared to 46-55 year olds' mean score of 2.28 and a 2.13 mean score for the 56-85 age groups. Lastly, the mean score on how 25-45 year olds perceived their environment as being nurturing was 2.33, compared to 46-55 year olds with a mean score of 2.28 and a 2.15 mean score for the 56-85 age groups. The mean scores for the three age groups were very similar to each other.

Table 9

Mean Importance Ratings for Three age Groups

Variable	25-45 (n=157)	46-55 (n=130)	56-85 (n=93)
Meaningful Work			
Mean	1.68	1.67	1.62
Standard Deviation	.50	.47	.60
Love of Work			
Mean	2.34	2.28	2.13
Standard Deviation	.79	.80	.85
Nurturing Environment			
Mean	2.33	2.28	2.15
Standard Deviation	.53	.50	.55

Table 10 reflects the mean scores and standard deviation for the three specialties and the three components of Occupational Intimacy: meaningful work, love of work, and

nurturing environment. In Table 10 the mean scores were measured on a scale of 1-5, with 1=strongly agreed, and 5=strongly disagreed. The mean score on the extent to which medical physicians perceived their work as being meaningful was 1.45, compared to surgical physicians with a mean score of 1.63 and a 1.68 mean score for the physicians in the "other" group. The mean scores in this category had the widest spread 1.45-1.68. The mean score on the extent to which medical physicians perceived their love of work was 2.02, compared to surgical physicians' mean score of 1.63 and a 1.68 mean score for the physicians in the "other" group. Lastly, the mean score on the extent to which medical physicians perceived the environment as nurturing was 2.16, compared to surgical physicians with a mean score of 2.38 and a 2.28 mean score for the physicians in the "other" group.

Table 10

Mean Importance Ratings for the Three Groups of Specialties

Variable	Medical (n=133)	Surgical (n=127)	Other (n=120)
Meaningful Work			
Mean	1.45	1.63	1.68
Standard Deviation	.51	.42	.47
Love of Work			
Mean	2.02	2.28	2.19
Standard Deviation	.81	.82	.81
Nurturing Environment			
Mean	2.16	2.38	2.28
Standard Deviation	.52	.54	.52

Tables 11-13 present the summary source tables. Table 11 reflects that there were no main effects for gender on the three components: meaningful work, love of work, and nurturing environment. In Table 11, when comparing male and female physicians on meaningful work, $F(1, 378) = 1.24$, $p = .27$, no significant difference was found. When

comparing love of work, F (1, 378) =.58, p=.45, no significant difference was found. Lastly, when comparing nurturing environment, F (1,378) =.002, p=.96, no significant difference was found.

Table 11

One-way Analysis of Variance Summary Table Comparing Gender on Meaningful Work, Love of Work and Nurturing Environment

Group and Source	*df*	*F*	*p*
Meaningful Work	1,378	1.24	.27
Love of Work	1,378	.58	.45
Nurturing Environment	1,378	.002	.96

*$p<.05$

Table 12 reflects that there were no main effects for age and the three components: meaningful work, love of work, and nurturing environment. In Table 12, when comparing meaningful work, F (1,378) =1.3, p=.27, no significant difference was found. When comparing love of work, F (1,378) =.2.1, p=.12, no significant difference was found. Lastly, when comparing nurturing environment, F (1,378) =.71, p=.49, no significant difference was found.

Table 12

One-way Analysis of Variance Summary Table Comparing Age on Meaningful Work, Love of Work and Nurturing Environment

Group and Source	*df*	*F*	*P*
Meaningful Work	1,378	1.3	.27
Love of Work	1,378	2.1	.12
Nurturing Environment	1,378	.71	.49

*$p<.05$

Table 13 reflects that there were no main effects for specialty on love of work and nurturing environment. When comparing meaningful work, F (2,377) =4.3, p=.01, a significant difference was found. When comparing love of work, F (2,377) =2.2, p=.11, no significant difference was found. Lastly, when comparing nurturing environment, F (2,377) =2.5, p=.08, no significant difference was found.

Table 13

One-way Analysis of Variance Summary Table Comparing Gender on Meaningful Work, Love of Work and Nurturing Environment

Group and Source	*df*	*F*	*p*
Meaningful Work	2,377	4.3	.01
Love of Work	2,377	2.2	.11
Nurturing Environment	2,377	2.5	.08

*$p<.05$

As seen in Table 13 one of the three ANOVA's produced a statistically significant effect for meaningful work by specialty. Least significant difference (LSD) pairwise multiple comparison tests were completed. There was a difference between the medical

physicians, which included internal medicine, neurology, family practice, cardiology, nephrology, gastroenterology, and oncology on the degree to which they perceived their job as meaningful compared to the "other" group which included, obstetrics, gynecology, dermatology, allergy, ophthalmology, optometry, podiatry, psychiatry, emergency medicine, rehabilitation, pain, pediatrics, ear, nose and throat, infectious disease, and radiology. Medicine physicians agreed more than the "others" that work was meaningful with a p value of .006.

Summary

This chapter presented the results of the methodological study that explored the psychometric properties of the Occupational Intimacy instrument. The 380 participants' demographic profiles were presented and results concerning the four research questions were described.

"Is there evidence to support the content validity of the Occupational Intimacy instrument?" Here was the first research question. The two theorists, Boverie and Kroth, independently agreed that the items comprehensively addressed the construct of Occupational Intimacy. The results of the expert review produced a 37 item Occupational Intimacy instrument.

The second research question was, "Is there evidence to support the construct validity of the Occupational Intimacy instrument?" Here was evidence to support the construct validity of the Occupational Intimacy instrument. Three factors emerged that accounted for 54% of the variance. The final instrument had 36 total items to measure the concept of Occupational Intimacy. For the subscales, eleven items measured love of

work; twelve items measured meaningful work; thirteen items measured nurturing environment.

The third research question," What is the internal consistency of the alphas for each of the three scales (meaningful work, love of work and nurturing environment) within the Occupational Intimacy instrument? Here the internal consistency alphas for the Occupational Intimacy scales confirmed that the Occupational Intimacy instrument was reliable. The alpha coefficients ranged from .86-.95 on the final three subscales within the measurement tool.

The last question was, "How will the findings differ across ages, genders and specialties of the physician sample?" There were no main effects for age or gender on the three components: meaningful work, love of work, and nurturing environment. There were no main effects for specialty on love of work and nurturing environment. However, there was a difference between the medicine physicians and "others" on how meaningful they perceived their job. The medical physicians, which include internal medicine, neurology, family practice, cardiology, nephrology, gastroenterology, and oncology perceived their job was more meaningful than the subgroup "others" which included: obstetrics and gynecology, dermatology, allergy, ophthalmology, optometry, podiatry, psychiatry, emergency medicine, rehabilitation, pain, pediatrics, ears, nose and throat, infectious disease, and radiology. It appears from the ANOVA's that the instrument can be utilized across gender, age and specialty.

CHAPTER 5: DISCUSSION

The key findings of this study are discussed in this chapter. Data from the primary and supplemental analyses are used to frame the following sections: conclusions, interpretations, limitations and recommendations.

Conclusions

The purpose of this study was to develop and validate an instrument that measured the concept of Occupational Intimacy. This study addressed four research questions designed to evaluate the reliability and validity of the Occupational Intimacy instrument. The four research questions were:

1. Is there evidence to support the content validity of the Occupational Intimacy instrument?
2. Is there evidence to support the construct validity of the Occupational Intimacy instrument?
3. What is the internal consistency of the alphas for each of the three scales (meaningful work, love of work and nurturing environment) within the Occupational Intimacy instrument?
4. How will these findings differ across age, gender and specialties of the physician sample?

The present study was the first of its kind to develop an empirical tool to measure the emerging concept of Occupational Intimacy. This study simultaneously investigated the three components of Occupational Intimacy using factor analytic techniques.

This study was also noteworthy because it utilized the two theorists' Boverie and

Kroth, who as the content experts created the concept of Occupational Intimacy. The initial instrument development occurred through a comprehensive process. The researcher developed the initial instrument by integrating the questions and statements from the theorists' work, the literature review, and modified questions that appeared to be applicable from preexisting job satisfaction instruments. Then through an iterative process between the researcher and the two theorists separately, Boverie and Kroth agreed that the newly developed 37 item instrument, adequately measured their Occupational Intimacy concept.

In addition to creating the concept of Occupational Intimacy, Boverie and Kroth have over 40 cumulative years of experience in organizational development, consulting, training, teaching, communication, and human resources. Their varied backgrounds served to ensure that the instrument review process reflected current organizational development practices and job satisfaction principles.

After content validity was established, the researcher utilized factor analysis to assess the construct validity of the Occupational Intimacy instrument. The theoretical concept has three components: love of work, meaningful work and nurturing environment. The resulting factors corresponded quite closely with the three components: love of work, meaningful work and nurturing environment that were proposed during the expert content evaluation phase. The factor analysis revealed that these three factors explained 54% of the cumulative variance.

Once construct validity was established, evidence for reliability was sought. Cronbach's alpha was used to assess the internal consistency of the data obtained from the Occupational Intimacy instrument study. The alpha coefficients ranged from .86-.93

on all subscales within the newly created measurement tool. Each subscale was analyzed for scale level reliability. No items needed to be considered for deletion. The alpha for nurturing environment was .86, which indicates that the items form a scale that has good internal consistency. Similarly, the .92 alpha for the meaningful work scale, and the .94 alpha for the love of work scale indicated very good internal consistency.

In addition, Pearson correlations showed how the items that the theorists had identified would measure each component, (love of work, meaningful work, and nurturing environment), compared to the outcome of the factor analysis. The Pearson *r* values ranged from .970 to .985. These numbers reflect strong positive relationships between the initial instrument based on Boverie and Kroth's advice and the instrument that was constructed through the principal components factor analysis. These very high correlations indicate that the instrument constructed through the factor analysis measured the same components that the theorists' instrument had identified.

After the construct and content validity and reliability were completed, the researcher conducted nine one-way ANOVA's to determine if there were statistically significant relationships between the independent variables: of age, gender, and specialty and the three dependent variables: love of work, meaningful work, and nurturing environment. There were no age, gender or specialty difference between love of work and nurturing environment. One of the ANOVA's produced a statistically significant effect for meaningful work by specialty, so a post hoc test was then completed.

However, there was a difference between the medical physicians in specialties which included: internal medicine, neurology, family practice, cardiology, nephrology, gastroenterology, and oncology and how they perceived their job as meaningful

compared to "others" which specialties included: obstetrics and gynecology, dermatology, allergy, ophthalmology, optometry, podiatry, psychiatry, emergency medicine, rehabilitation, pain, pediatrics, ears, nose and throat, infectious disease, and radiology . The medical physicians perceived that their job was more meaningful than the subgroup "others".

Definitive conclusions are difficult to make because this was the first study to establish the reliability and validity of the Occupational Intimacy instrument. Oberst (1994) suggests that results should be replicated twice before an instrument is considered to be valid.

Interpretation

The present study proposed a new instrument to measure the emerging concept of Occupational Intimacy. The most common currently available instruments that measure job satisfaction were created over decades ago. The two most common scales: Job Diagnostic Survey and the Job Descriptive Index were developed in the late 1960's. Theoretical evolution regarding job satisfaction reflects an emerging focus on intrinsic components: passion for one's work, finding meaning in one's job, and working in a supportive environment (Boverie and Kroth, 2001; Henderson, 2000; Wheatley, 1994).

However, the most common instruments that currently are being utilized to measure job satisfaction do not capture these components. The Job Satisfaction Survey and the Job Descriptive Index measure the following: pay, promotion, supervision, coworkers, fringe benefits, rewards, communication and overall satisfaction with the type of work done. Although these tools were pertinent for the era in which they were developed, generational and gender diversity today is now causing various professions to re-evaluate

how they measure job satisfaction.

New tools are needed to measure this new focus, especially in the medical profession. The professional landscape is changing for physicians. Not only is the type of physician becoming more diverse in regard to age and gender, but the environment for practicing medicine is constantly changing. Thus, new instruments are needed to assist not only in recruitment but also retention of the current practicing physicians. An instrument must measure not only the environmental challenges but also capture the meaningful work and love of work that occurs in medicine. For this reason, the researcher completed subsequent supplemental analyses to determine if there was a difference between genders, ages and specialties in regard to the three components of Occupational Intimacy: love of work, meaningful work, nurturing environment. Through this analysis, the researcher tested the new instrument to identify if results were similar across genders, three age groups and the three groups of specialties

Gender. In regard to meaningful work, love of work, and nurturing environment, there were no significant differences between male and female physicians. These findings were in contrast to the findings in the current literature. Several studies indicated that female physicians typically have a greater level of dissatisfaction as compared to their male counterparts (Carr, 1998; Frank, Brownstein, Ephgrave, & Neumayer, 1998; Frank, McMurray, Linzer, & Elon, 1999 and Croasdale, 2004). One reason that the findings were in contrast to the current literature may be due to the type of questions that were asked on the instrument. The questions did not focus on the number of hours physicians worked, or the level of stress they experience. According to Stewart (2000), one half of 200 female physicians who were polled reported experiencing

continual high stress levels because of their multiple roles and number of hours worked. In contrast, the primary focus of previous studies for female physicians focused on the level of stress they experienced because of their multiple roles, their dissatisfaction with the number of hours they were required to work and also perceived inequity of pay. (Stewart, 2000; Leigh 2002). In future studies, asking specific questions regarding overall satisfaction with hours worked and equity in pay might provide additional insight between the different satisfaction levels of male and female physicians. In addition, gathering specific demographic data concerning a physician's other role, such as; parent, spouse, etc. may enable researchers to gain more specific information between the gender satisfaction rates.

Age. In regard to meaningful work, love of work and nurturing environment, there were no significant differences between the three age groupings (25-45, 46-55 and 56-85). One reason that the findings may not reflect any generational differences is that the researcher did not ask specific questions regarding work/life balance. According to past studies, various generations have differing expectations on how much time they want to put into a given work day. The younger generation is seeking a balance between work and personal life (Salsberg, 2001; Smola, 2002). Future studies could ask a specific question like: do you feel as if your career allows you to adequately work and personal life? This type of question may yield a difference between the generations.

In addition, approximately one third of family practice physicians practicing today are between the ages of 50 and 65. Sixty four percent of the family practice physicians between the ages of 50-65 view younger physicians as less dedicated and not as hardworking as their generation (Association of American Family Practice, 2004). As

the veterans retire, and Generation's X and Y influence the medical profession, the generational values may have an impact on overall job satisfaction among this profession. Specific questions in future studies that inquire into generational values may provide valuable insight between the age groupings. For example, Generation Yer's top three job requirements are: meaningful work that makes a difference to the world, working with committed colleagues who share their values, and meeting their personal goals (Tapscott, 1998). Tailoring questions around each generation's values would be helpful.

Specialty. In regard to love of work and nurturing environment there were no significant differences that appeared between the three types of specialties. Past studies have not specifically studied if there is a difference between how various specialties perceive their love of work compared to others. However, in regard to nurturing environment the findings didn't reflect a difference between specialties possibly because of the general nature of how the questions were stated. There were no specific questions regarding the impact of reimbursement. In past studies this is one element that might have had a different impact on the various specifies (Zyzanski, 1998; Cole 2003). If future studies are to identify if there are differences between specialties, specifically asking how reimbursement impacts overall job satisfaction would be beneficial. However, in regard to meaningful work, the medicine group of physicians felt that work was more meaningful than the "other" physician group.

Specialties that were labeled in the "other" category were: Obstetrics, gynecology, dermatology, allergy, ophthalmologist, optometrist, podiatry, psychiatry, emergency medicine, rehabilitation, pain medicine, pediatrics, ear, nose and throat, infectious disease and radiology. A difference here may be explained by the type of patient relationships

physicians develop. A growing body of research shows that the patient-physician relationship is the most consistently reported and powerful determinant for physician satisfaction (Chuck, Nesbitt, & Kwan, 1993; Horowitz, 1996; Hueston, 2004). Typically family practice and internal medicine physicians, establish long term relationships with their patients. Because of these relationships, they may find their jobs more meaningful compared to "other" type of specialties since these specialties typically have short and infrequent patient encounters. Therefore, they may not form the type of relationships that medical physicians form with their patients. These results support earlier studies by (Andrew, 2006; Blumenthal, Landon, & Reschovshy, 2003; Brunk, 2003). These specific studies reflect that job satisfaction is decreasing for: obstetrics, gynecology and emergency room physicians.

Emergency medicine and radiology primarily are dependent on the hospital to provide care to their patients. These two specialties typically either work in the hospital 24/7. Although they are independent, hospitals typically contract for their service, the contract that is created ensures coverage for the hospital. Depending on the hospital, these groups may be reimbursed for their services or not. Administrators can at any time decide to send out a request to another group to provide radiology or emergency coverage, thus forcing an entire group to leave the hospital setting.

Future studies focusing on these specific specialties and how their overall job satisfaction compares to the medicine physicians would be interesting. In addition, physicians who practice in obstetrics pay the highest malpractice insurance due to the liability of delivering a baby. From my experience many physicians discontinue obstetrics when they reach a certain age due not only the liability but the call coverage.

Typically an obstetric physician will sleep at the hospital, in order to be paged urgently for a pending delivery. Given the malpractice and the disruption to their home life, it is the researcher's perception that these two variables may be the cause of a lower job satisfaction for this specialty. Segmenting data into specific subcategories may also provide additional information that would be reflective of previous studies. For example, comparing obstetric physicians to the total physician population would be interesting. The researcher was unable to do this due inadequate sample size for just obstetrics. However, since obstetric physicians have the highest malpractice insurance, and literature cites malpractice as an element of dissatisfaction, segmenting them into their own group may be beneficial. This is only speculation from the researcher, but further studies should be conducted to validate this perception.

In conclusion, the researcher also recommends that in future studies a specific question should be added to measure overall satisfaction levels, which may identify differences between all three groupings: age, gender and specialty. Lastly, specific questions regarding autonomy and impact of reimbursement should be included. These two areas were cited in the literature as elements of dissatisfaction, and the researcher did not account for these in the instrument.

Limitations of study

According to Gliner and Morgan (2000), if the sample selection is carried out as a simple random sample, each individual in the population of interest had equal probability of being selected. A convenience sample, which is a nonprobability sampling technique, was utilized in this study. After the data is collected, researchers often examine the demographic characteristics of their convenience sample and conclude the participants

are similar to those in the larger population (Gliner & Morgan, 2000). Table 14 reflects the demographic characteristics of the convenience sample compared to the larger population of physicians who practice in the United States.

Table 14

Final sample Characteristics

Characteristic	Sample n	%	General Population	%
Age	380		902,100	
25-45	157	41	207,483	23
46-55	130	34	216,504	24
56-85	93	25	478,113	53
Sex				
Male	289	76	657,150	73
Female	91	24	244,950	27
Specialty				
Medicine	133	35	333,617	37
Surgical	126	33	207,483	23
Other	121	32	361,000	40

Although the gender sample closely resembled the general population, the segmented age and the specialty sample differed from the general population. In addition, convenience sampling limits the generalizability of the findings to the population of interest. For these reasons the researcher recommends that a sample that is more nearly representative would be helpful to determine reliability of the finding in relation to the general population of practicing physicians.

The final limitation to be discussed is that of the measurement tool used to measure occupational intimacy. According to Pett, Lackey, and Sullivan (2003), a researcher can not assume that all of the items that define a factor have been delineated in a single study. Although factor analysis provides the researcher with methods to evaluate the goodness of fit of items within an instrument's subscales, it does not enable the

researcher to assess the goodness of the instrument as a whole except in terms of establishing beginning construct validity. Replicating this study is needed to confirm construct validity.

Recommendations

This is the first study to establish an empirical tool to measure Occupational Intimacy. Construct validity is an on-going process that is determined over a series of studies. For this study, principle components factor analysis helped to define the internal structure for the set of items and grouped the items into the three factors. In subsequent phases of instrument development, confirmatory factor analysis (CFA) needs to be used to further enhance construct validity. The researcher had one handwritten comment stated that the questions seemed redundant. The researcher agrees with this comment, since the initial instrument that was mailed to the sample had multiple questions measuring each component. Eleven items measured love of work, fourteen items measured meaningful work, and twelve items measured nurturing environment. Although the researcher condensed the final instrument to 36 items, with future research, further consolidation of items may occur. From a practical perspective, having fewer items may improve the participation rate. Table 15 reflects the recommended consolidation of items, and the refinement of the Occupational Intimacy instrument.

Table 15

Recommended Instrument for Future Studies

	Meaningful Work	Love of work	Nurturing Environment	Theorist
Meaningful Work:				
I believe the result of my work significantly affect the lives or well being of people	.762			Meaningful
I feel that most of the things I do on my job gives me a sense of accomplishment	.754			Meaningful
My work contribution is special	.746			Meaningful
I believe my job is important	.743			Meaningful
I am using my talents to add value to people's lives	.696			Meaningful
I feel that I am useful and needed	.668			Meaningful
I am able to make a difference every day	.658			Meaningful
I find my work creates learning opportunities for me	.588			Love
I feel that I am accomplishing something worthwhile at work	.531			Meaningful
I find my work challenging	.503			Love
Love of Work:				
I can not imagine another career making me as happy as being a physician		.728		Love
The major satisfaction in my life comes from my job		.722		Love
I would rather be a physician than anything else		.719		Love
I love what I do	.460	.684		Love
Because of my commitment to patients I would not choose another career.		.683		Meaningful
I experience true joy at work	.409	.678		Love
My work is my most rewarding experience		.674		Love
I find joy in my work	.425	.651		Love
Practicing medicine makes me happy	.397	.646		Love
I enjoy my work	.467	.568		Love
Nurturing Environment:				
I feel supported in my work environment			.742	Nurturing
The clinic/office or hospital is a pleasant place to be			.660	Nurturing
Caring and flexible			.657	Nurturing
The policies and procedures that I deal with are annoying			.643	Nurturing
I find that every time I try to do something at work I run into obstacles			.605	Love
Where I work the people are competent			.605	Nurturing
I feel valued at work	.437		.602	Nurturing
The physical surroundings where I work are pleasant			.517	Nurturing
I find some of the people I deal with are not competent			.506	Nurturing
I often have to waste time doing administrative tasks at work			.498	Nurturing

In addition, the researcher recommends for future use of the instrument, to change the Likert scale so that 1=strongly disagree, and 5=strongly agree.

High correlations between the factor analysis instrument and the initial instrument were obtained. In addition, the factor analysis established a high reliability with the initial instrument and the subscales. Additional research to verify the use of the factors to understand job satisfaction and the impact each factor has on job satisfaction is recommended. According to the theorists, Boverie and Kroth, each component (love of work, meaningful work and nurturing environment) is considered to have equal influence on a person's job satisfaction. In my experience as I work with various physicians, it is my perception, although subjective, that it is the environment that causes the most distress. For example, if physicians love their work, find meaning in their work but the hospital where they provide care is not a nurturing environment, what impact would this one component have on their overall satisfaction rate. Therefore future studies could weight the various components: love of work, meaningful work and nurturing environment and evaluate if each component does add equal value to overall job satisfaction.

The researcher also collected four additional written comments from the survey which reflected the following themes: the physicians believed the researcher should have had specific questions on the instrument which included: managed care, reimbursement, and dealing with the government. As stated previously, the following studies indicate that physicians are experiencing frustration and dissatisfaction with the negative aspects of their environment due to the impact of managed care, increased paperwork, and regulatory duties, (Hedley & Mitchell, 1997; Keer, 2000; Levin, 1998; Schultz, 1992). Therefore future development of instruments that specifically focus on physician satisfaction, should consider adding specific questions regarding reimbursement,

government restrictions and the regulatory challenges found in the healthcare environment.

Additional analysis also should be explored evaluating age, gender and specialty and the interaction with meaningful work, love of work, and nurturing environment. In addition, there are new factors that bear watching that include new age cohorts, increasing numbers of women enter the medical profession, and decreases in the new members into various specialties, for example, neurosurgery. All of these elements will likely affect the overall satisfaction for physicians. Given the changing landscape of the demographic characteristics for the medical profession, future studies that focus on overall physician job satisfaction specific to these variables is warranted.

In addition, the sample for this study only included independent practicing physicians. There is another large subgroup of physicians who are employed by organizations such as hospitals or separate companies. Kaiser Permanente, for example, employs over 3000 physicians in California alone. To replicate this study and include employed physicians and compare their overall satisfaction with independent physicians would be interesting. I have had the experience to work with both independent and employed physicians. The Kaiser Permanente physicians appear to take less on -call, which equates to more time at home and they seem to appreciate having a set schedule. This is only a perception, and further research should be completed to validate which group has a higher level of job satisfaction.

Lastly, expanding the sample to include other professions outside of healthcare would be beneficial. The Occupational Intimacy instrument could provide insight into job satisfaction in a variety of professions. Since this tool does not measure the impact of

the supervisory role, professionals who work independently may find this instrument beneficial since it measures elements that directly affect them. Some examples of these professions would include: dentists, attorneys, accountants, acupuncturists, chiropractors, veterinarians and independent consultants.

In conclusion, each research study allows us to have a closer and more comprehensive understanding of job satisfaction. Specifically related to healthcare, physicians' dissatisfaction with the practice of medicine may have public health implication over and above the obvious problems of recruiting new members into a troubled profession. Studies suggest that dissatisfaction on the part of the physicians breeds poor clinical management, as well as dissatisfaction and non compliance among patients. These factors, coupled with the rapid turnover of unhappy doctors in offices and hospitals, may lead to discontinuous, substandard medical care. Occupational Intimacy appears to be the newly emerging concept that will provide new knowledge for the medical profession and many others.

This knowledge will guide human resource specialists and formal leaders, to develop organizational cultures that may improve the underlying causes of low job satisfaction. Through this knowledge we may be able to effectively recruit and retain employees throughout various organizations and into various professional careers.

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APPENDIX A: ITEMS DEVELOPED FOR EACH COMPONENT

Original statement and noted reference	Modified item
"To what extent is your work meaningful? "(Boverie & Kroth, 2001).	I feel that most of the things I do on my job are meaningful.
The outcomes of my work can affect other people in important ways" (Griffith, 2001)	I believe the result of my work significantly affect the lives or well being of people.
"Many companies believe that employee work for money not job satisfaction. "(Boverie& Kroth, 2001).	Your career is something you have to do to earn a living.
"Employees experience true joy when their interests are centered within their career." (Boverie & Kroth, 2001).	Most of your real interests are centered outside of your career.
"People seek work that is fulfilling." (Boverie & Kroth, 2001).	My job is fulfilling.
"Are you doing important work?" (Boverie & Kroth, 2001).	I believe my job is important.
"Being able to do something worthwhile." (Weiss, 1967).	I feel that I am accomplishing something worthwhile at work.
Meaningful work is defined as knowing you are an essential part of the work, you make a difference, and you feel that your contribution is special, (Boverie & Kroth, 2001).	My work contribution is special.
Physicians found meaning in their work due to their perception that they were making a difference in someone else's life. (Horowitz, 1996).	I am able to make a difference every day.
The gratitude displayed by my patients keeps me going." (Linzer, 2000).	Because of my commitment to patients I would not choose another career.
All and all I am satisfied with my job. (Weiss, 1967).	The major satisfaction in my life comes from my job.
Meaningful work is defined as knowing you are an essential part of the work, you make a difference, and you feel that your contribution is special. (Boverie & Kroth, 2001).	I feel that I am useful and needed.
"To what extent is your work exciting and not mundane?"(Boverie & Kroth, 2001).	Most of the work I do seem useless or trivial.
"I know how to make my work important even when there are obstacles". (Boverie & Kroth, 2001).	I find that every time I try to do something at work I run into obstacles.
"The pleasantness of the working conditions." (Weiss, 1967).	The clinic/office or hospital is a pleasant

	place to be.
"I have too much administrative work to do." (Linzer, 2001)	I often have to waste time doing administrative tasks at work.
Nonphysicians in my practice are not accommodating." (Linzer, 2001)	I find some of the people I have to deal with are not competent.
The physical conditions of the job are pleasant" (Weiss, 1967).	The physical surroundings where I work are pleasant.
A person could love what they do and find it meaningful but would not feel intimate or close to their workplace if the organization did not care about them or their work (Boverie & Kroth, 2001).	I work in a caring, understanding and flexible workplace.
A nurturing environment is defined as a place where employees feel nurtured and cared for; there is respect and compassion for the employees (Boverie & Kroth, 2001).	I feel respected for what I do.
Employees feel valued with in the organization. (Boverie& Kroth, 2001)	I feel valued at work.
"Many of our rules and procedures make doing a good job difficult ."(Griffith, 2001).	The policies and procedures that I deal with are annoying.
"I have developed strong and supportive relationships at work" (Boverie & Kroth, 2001).	I feel supported in my work environment.
The spirit of cooperation among my coworkers. (Weiss, 1967).	I work collaboratively with my colleagues.
I make sure that I have developmental and training opportunities at work" (Boverie & Kroth, 2001).	I have the training and resources I need to deliver care to my patients.
"Do you enjoy your work?" (Boverie & Kroth, 2001).	I enjoy where I work.
" I have too much paperwork." (Weiss, 1967).	I find it very bureaucratic where I work.
"The friendliness of my coworkers."(Weiss, 1967)	Where I work the people are helpful.
"Competence of my supervisor." (Weiss, 1967)	The people I work with are competent.
"Can your job be more interesting?" (Boverie & Kroth, 2001).	I find my work is interesting.
"Would you wake up most mornings eager and delighted to do your work?" (Boverie & Kroth, 2001).	I wake up most mornings eager to go to work.
"People seek work that is fulfilling" (Boverie & Kroth, 2001).	I am fulfilled in my job.
"Will you experience true joy in your work?" (Boverie & Kroth, 2001).	I experience true joy in my work.
"Will I feel free to speak my mind at work?" (Boverie & Kroth, 2001).	I feel free to speak my mind at work.

"Occupational Intimacy is loving your job" (Boverie & Kroth, 2001).	I love what I do.
"Will I be using my talents to add real value to peoples' lives?"(Boverie & Kroth, 2001).	I am using my talents to add value to people's lives.
"Do you enjoy your work?"(Boverie & Kroth, 2001).	I enjoy my work.
"Will you experience true job at work?" (Boverie &Kroth, 2001).	I find joy in my work.
" Stimulating and challenging work." (Griffeth, 2001)	I find my work challenging.
"Learning organizations create continuous learning opportunities." (Boverie & Kroth, 2001).	I find my work creates learning opportunities for me.
"I make a living doing what I love to do." (Boverie & Kroth, 2001).	I can not imagine another career making me as happy as being a physician.
"If I were to choose over again, I would not become a physician." (Linzer, 2001).	I would rather be a physician than anything else.
"All things considered, I am satisfied with my career as a physician." (Linzer, 2001).	Practicing medicine makes me happy.
Terry (1995) stated that 21% of physicians over 50 years of age stated they wanted to retire or sell their practices within a year. Terry (1995) stated that 21% of physicians over 50 years of age stated they wanted to retire or sell their practices within a year.	I expect to stay in medicine until I retire.
Horowitz (1996) found that 43% of mental health practitioners were considering leaving the field. A nationwide survey by the Henry J. Kaiser Family Foundation (Hobson, 2005) found that 87% of physicians said the overall morale of the profession has decreased and 60% said their own morale had declined.	Even when medicine is hard to deal with, I remain committed to my profession.
"When we do the work we love, we have a sense of accomplishment" (Boverie & Kroth, 2001).	I feel a sense of pride and/or accomplishment as a result of the type of work that I do.
"I find my present clinical work personally rewarding" (Linzer, 2001).	My work is my most rewarding experience.

APPENDIX B: RESEARCHER'S INSTRUMENT

ITEM	N	P	M
I feel that most of the things I do on my job are meaningful			
I believe the result of my work significantly affect the lives or well being of people			
Your career is something you have to do to earn a living			
Most of your real interests are centered outside of your career			
My job is fulfilling			
I believe my job is important			
I feel that I am accomplishing something worthwhile at work.			
My work contribution is special			
I am able to make a difference every day			
I am able to make a difference every day			
Because of my commitment to patients I would not choose another career.			
The major satisfaction in my life comes from my job			
I feel that I am useful and needed			
Most of the work I do seem useless or trivial			
I find that every time I try to do something at work I run into obstacles			
The clinic/office or hospital is a pleasant place to be			
I often have to waste time doing administrative tasks at work			
I find some of the people I have to deal with are not competent			
The physical surroundings where I work are pleasant			
I work in a caring, understanding and flexible workplace			
I feel respected for what I do			
I feel valued at work			
The policies and procedures that I deal with are annoying			
I feel supported in my work environment			
I work collaboratively with my colleagues			
I have the training and resources I need to deliver care to my patients			
I enjoy where I work			
I find it very bureaucratic where I work			
Where I work the people are helpful			
The people I work with are competent			
I find my work is interesting			
I wake up most mornings eager to go to work			
I am fulfilled in my job			
I experience true joy in my work			
I feel free to speak my mind at work			
I love what I do			
I am using my talents to add value to people's lives			
I enjoy my work			
I find joy in my work			
I find my work challenging			
I find my work creates learning opportunities for me			

I can not imagine another career making me as happy as being a physician			
I would rather be a physician than anything else.			
Practicing medicine makes me happy			
I expect to stay in medicine until I retire			
Even when medicine is hard to deal with, I remain committed to my profession.			
I feel a sense of pride and/or accomplishment as a result of the type of work that I do			
My work is my most rewarding experience			

APPENDIX C: DELETED ITEMS FROM INSTRUMENT

Deleted Items from the Occupational Intimacy Instrument

1. I feel that most of the things I do on my job are meaningful.

2. Your career is something you have to do to earn a living.

3. Most of your real interests are centered outside of your career.

4. I am able to make a difference every day.

5. I enjoy where I work.

6. I find it very bureaucratic where I work.

7. Where I work the people are helpful.

8. I am able to make a difference everyday (duplicate).

9. I wake up most mornings eager to go to work.

10. I am fulfilled in my job.

11. I expect to stay in medicine until I retire.

12. Even when medicine is hard to deal with, I remain committed to my profession.

APPENDIX D: FINAL INSTRUMENT WITH COMPONENTS

Item	Component	SA	A	N	DA	SDA
I feel that most of the things I do on my job gives me a sense of accomplishment	Meaningful work					
I believe the result of my work significantly affect the lives or well being of people	Meaningful work					
I believe my job is important	Meaningful work					
I feel that I am accomplishing something worthwhile at work	Meaningful work					
My work contribution is special	Meaningful work					
I am able to make a difference every day	Meaningful work					
I find my work creates learning opportunities for me	Meaningful work					
I feel a sense of pride and/or accomplishment as a result of the type of work that I do	Meaningful work					
I feel that I am useful and needed	Meaningful work					
Most of the work I do seems useless or trivial	Meaningful work					
I find my work interesting	Meaningful work					
I am using my talents to add value to people's lives	Meaningful work					
I would rather be a physician than anything else	Love of work					
I enjoy my work	Love of work					
Practicing medicine makes me happy	Love of work					
I find my work is interesting	Love of work					
I experience true joy at work	Love of work					
I love what I do	Love of work					
The major satisfaction in my life comes from my job	Love of work					
I find joy in my work	Love of work					
My job is fulfilling	Love of work					
I can not imagine another career making me as happy as being a physician	Love of work					
Because of my commitment to patients I would not choose another career.	Love of work					
I have the training and resources I need to deliver care to my patients	Nurturing environment					
The physical surroundings where I work are	Nurturing					

pleasant	environment					
The clinic/office or hospital is a pleasant place to be	Nurturing environment					
I feel respected for what I do	Nurturing environment					
I feel valued at work	Nurturing environment					
Where I work the people are competent	Nurturing environment					
I feel supported in my work environment	Nurturing environment					
I work collaboratively with my colleagues	Nurturing environment					
I find some of the people I deal with are not competent	Nurturing environment					
I often have to waste time doing administrative tasks at work	Nurturing environment					
The policies and procedures that I deal with are annoying	Nurturing environment					
I find that every time I try to do something at work I run into obstacles	Nurturing environment					
I work in a caring and flexible work environment	Nurturing environment					
I feel that I am useful and needed	Nurturing environment					

APPENDIX E: INSTRUCTIONS AND FINAL INSTRUMENT

Survey Instructions:

Please check the following demographic information:

____Female____Male Type of Specialty_____
(Internal Medicine, Family Practice, Surgery, Pediatrics etc):

Age: 25-35 _____36-45_____46-55_____56-65_____66-75_____75-85_____

Please think about your current job and the environment you work in and fill out this survey. Read each question and respond by circling the number on the 5-point scale or if you are completing the survey electronically, bold the response which best represents your view. Please return this survey and consent form directly to margok52262@yahoo.com.

Legend:
SA=Strongly Agree A=Agree N=Neutral DA=Disagree SDA=Strongly disagree

Item	SA	A	N	DA	SDA
I feel that most of the things I do on my job gives me a sense of accomplishment	1	2	3	4	5
I believe the result of my work significantly affect the lives or well being of people	1	2	3	4	5
My job is fulfilling	1	2	3	4	5
I believe my job is important	1	2	3	4	5
I feel that I am accomplishing something worthwhile at work	1	2	3	4	5
My work contribution is special	1	2	3	4	5
I am able to make a difference every day	1	2	3	4	5
Because of my commitment to patients I would not choose another career.	1	2	3	4	5
I would rather be a physician than anything else	1	2	3	4	5
I enjoy my work	1	2	3	4	5
I feel that I am useful and needed	1	2	3	4	5
Most of the work I do seems useless or trivial	1	2	3	4	5
I find that every time I try to do something at work I run into obstacles	1	2	3	4	5
The clinic/office or hospital is a pleasant place to be	1	2	3	4	5
I often have to waste time doing administrative tasks at work	1	2	3	4	5
I find some of the people I deal with are not competent	1	2	3	4	5
The physical surroundings where I work are pleasant	1	2	3	4	5
Practicing medicine makes me happy	1	2	3	4	5
I feel respected for what I do	1	2	3	4	5
I feel valued at work	1	2	3	4	5
Where I work the people are competent	1	2	3	4	5
I find my work is interesting	1	2	3	4	5
I experience true joy at work	1	2	3	4	5
I love what I do	1	2	3	4	5
I am using my talents to add value to people's lives	1	2	3	4	5
The major satisfaction in my life comes from my job	1	2	3	4	5
I find joy in my work	1	2	3	4	5
I find my work challenging	1	2	3	4	5
I find my work creates learning opportunities for me	1	2	3	4	5
I can not imagine another career making me as happy as being a physician	1	2	3	4	5
I work in a caring, understanding and flexible workplace	1	2	3	4	5
The policies and procedures that I deal with are annoying	1	2	3	4	5
I feel a sense of pride and/or accomplishment as a result of the type of work that I do	1	2	3	4	5
I have the training and resources I need to deliver care to my patients	1	2	3	4	5
I work collaboratively with my colleagues	1	2	3	4	5
I feel supported in my work environment	1	2	3	4	5
My work is my most rewarding experience	1	2	3	4	5
Comments:					

APPENDIX F: CONSENT LETTER

Consent to Participate in a Research Study
Colorado State University

Title of Study: Development and validation of occupational intimacy scale
Principal Investigator: Dr. Jerry Gilley **Jerry.Gilley@CAHS.Colostate.edu; 970-491-2918**
Co-Principal Investigator: Margo Karsten, **margok52262@yahoo.com 970.674.1588, 1268**

Due to the impending shortage of physicians, and increasing demand for healthcare services, the researcher is focusing her study on physician job satisfaction. Since you are a practicing physician, we believe that your participation in this research project would be helpful.

Margo Karsten, is a PhD student at Colorado State University, and will be the person that will oversee the entire study. The purpose of the study is to develop and validate an instrument that measures an emerging theory called occupational intimacy.

Participation in the study is voluntary, if you do not want to complete the questionnaire you do not need to return the questionnaire. The questionnaire will take approximately five minutes to complete. If you decide to participate in the study you may withdraw your consent and stop participation at any time. If a questionnaire is not returned a postcard reminder will be sent out, again, if you do not want to participate in the study, disregard the postcard.

Physicians that are employed within a health system will not be included in this study. There are no known risks in completing the questionnaire. The benefits in taking part in the study will allow the researcher to obtain information that will give insight into constructing a tool for physician job satisfaction. There will be no cost for participation.

Your information will be combined with information from other physicians taking part in the study. When we write about the study to share it with other researchers, we will write about the combined information we have gathered. Individual physician responses, and/or physician group practice results will not be published. The researcher will only report aggregate data. If you would like a copy of the completed research study, please email Margo Karsten at **margok52262@yahoo.com**

Questionnaires that are not 100% completed will be removed from the study. There will be no compensation for taking the questionnaire. The Colorado Governmental Immunity Act determines and may limit Colorado state University's legal responsibility if an injury happens because of this study. Claims against the University must be filed within 180 days of the injury.

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions about the study, you can contact the investigator, Dr. Jerry Gilley at**Jerry.Gilley@CAHS.Colostate.edu; 970-491-2918** or co-investigator: **Margo Karsten** at **970.674.1588**. Your signature acknowledges that you have read the information stated and willingly sign this consent form. Your signature also acknowledges that you have received, on the date signed a copy of this document containing 1 page.

Signature of person agreeing to take part in the study	Date	Printed name of person agreeing to take part in the study.
Margo A. Karsten		Feb. 13, 2006
Name of person providing information to participant		Date

APPENDIX G: COVER LETTER

I am a graduate student conducting research on physician job satisfaction. I am collecting data for my dissertation which I am completing for my PhD at Colorado State University.

If you part of an office practice, the results will be returned for the entire group of respondents, not specific groups of physicians or individual physicians. Office practices will not receive their office results. Only aggregate data will be reported. If you would like the aggregate results of this study, please send me an email at margok52262@yahoo.com Again, you will not be able to receive you or your office practice results, just the aggregate summary of all of the physicians that have participated in the study. I need 400 physicians to complete the survey, so I would greatly appreciate you participating, it takes approximately five minutes to complete.

If you decide to participate, this is voluntary and you may withdraw at any time you feel you do not want to continue participation. You can simply just not turn in your form. For further information about this study or issues of confidentiality or anonymity, please feel free to call. 970.674.1588 or email margok52262@yahoo.com

Thank you for participating.
Margo Karsten

APPENDIX H: HUMAN SUBJECTS APPROVAL

Colorado State University

Office of Regulatory Compliance
Office of Vice President for Research
and Information Technology
Fort Collins, CO 80523-2011
(970) 491-1553
FAX: (970) 491-2293

Notice of Approval for Human Research

Principal Investigator: Jerry Gilley, Education, 1588
Co-Principal Investigator: Margo Karsten, Education
Title: Development and Validation of Occupational Intimacy
Protocol #: 06-012H **Funding Source:** N/A

Number of Participants/Records: 600 participants
Committee Action: **Approved on:** February 10, 2006 **Expires:** January 25, 2007

HRC Administrator: Janell Meldrem Janell Meldrem

Consent Process:
The above-referenced project was approved by the Human Research Committee with the condition that the attached consent form is signed by the subjects and each subject is given a copy of the form. *NO changes may be made to this document without first obtaining the approval of the Committee.*

Investigator Responsibilities:

- It is the PI's responsibility to obtain this consent form from all subjects.
- It is the responsibility of the PI to immediately inform the Committee of any serious complications, unexpected risks, or injuries resulting from this research.
- It is also the PI's responsibility to notify the Committee of any changes in experimental design, participant population, consent procedures or documents. This can be done with a memo describing the changes and submitting any altered documents.
- Students serving as Co-Principal Investigators must obtain PI approval for any changes prior to submitting the proposed changes to the HRC for review and approval.
- The PI is ultimately responsible for the conduct of the project.
- A status report of this project will be required within a 12-month period from the date of review. Renewal is the PI's responsibility, but as a courtesy, a reminder will be sent approximately two months before the protocol expires. The PI will be asked to report on the numbers of subjects who have participated this year and project-to-date, problems encountered, and provide a verifying copy of the consent form or cover letter used. The necessary continuation form (H-101) is available from the RCO web page www.research.colostate.edu/rcoweb/.
- Upon completion of the project, an H-101 should be submitted as a close-out report.
- If approval did not accompany a proposal when it was submitted to a sponsor, it is the PI's responsibility to provide the sponsor with the approval notice.
- **Should the protocol not be renewed before expiration, all activities must cease until the protocol has been re-reviewed.**

This approval is issued under Colorado State University's OHRP Federal Wide Assurance 00000647.

Please direct any questions about the Committee's action on this project to me for routing to the Committee.

Attachment to PI & Co-PI

Date of Correspondence: 2/13/06