A Study of Employee Engagement, Job Satisfaction and Employee Retention of Michigan CRNAs

Capstone Project

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Table of Contents

Appendices

Abstract

Introduction: The business management concept of employee engagement has been around since the early 1990's. Employee engagement is defined as an employee's emotional connection to their organization that motivates the employee to become fully involved and enthusiastic about their work. Gallup reports that within the U.S. workforce there is more than $300 billion per year lost in productivity related to engagement. The benefits that employers receive from having engaged employees are numerous. Such benefits include; stronger customer relationships, longer employee tenure, increased productivity, higher job satisfaction, and increased organizational commitment. Within the last 15 years, hospitals have started to measure employee engagement through the use of surveys. Just like in other industries, healthcare workers, nurses and Certified Registered Nurse Anesthetists (CRNA) are more likely to provide excellent care when they are engaged with their work. Studies have proven that institutions that employ engaged healthcare workers have improved patient safety and satisfaction scores, reduction in medical errors, and lower malpractice claims. To date there have been no published engagement studies involving CRNAs.

Methods: Data was collected between December 2012 and January 2013 via Qualtrics© survey. The response rate was 16.5% (280/1700). The Index of Work Satisfaction (IWS), the Utrecht Work Engagement Scale (UWES) and the Anticipated Turnover Scale (ATS) were tools used to measure work satisfaction, engagement and turnover. Qualitative data was also collected to give insight into the respondent's answers.

Results: The resulting statistics show that CRNAs are engaged in their workplace. Engagement was measured on a continuum (0-6) showing high levels of Vigor (4.87) and Dedication (5.48) and an average score on Absorption (4.37). The paired t-test for all three means were significant with $p<.001$. The IWS for CRNAs was measured at 16.42 (0.9-37.1), showing CRNAs are not satisfied in the workplace. Drivers of satisfaction were measured on a continuum (1-7). The following drivers promoted satisfaction; Professional Status (6.69) and Autonomy (6.04). Organizational Policies (4.27), Pay (4.42) and Task Requirements (4.57) were factors leading to job dissatisfaction of CRNAs. Turnover (1-7) was measured with a mean sum score of 2.94. Analysis of the qualitative data revealed that many CRNAs find their job rewarding, but increased workload, lack of support by management and limited room for advancement has promoted job dissatisfaction of CRNAs.

Conclusion: The UWES survey measured CRNAs as having average to high levels of workplace engagement. However, the IWS survey results showed that Michigan CRNA's experience job dissatisfaction. The IWS survey driver components contributing to CRNA job satisfaction were; Professional Status, Autonomy and Interactions. The IWS driver components that contributed to CRNA job dissatisfaction were; Task Requirements, Pay and Organizational Policy. Despite Michigan CRNA's experiencing job dissatisfaction, it was surprising that the ATS survey results indicated that Michigan CRNAs do not plan to leave their current place of employment.

Keywords: employee engagement, employee satisfaction, job satisfaction

Chapter I Introduction

Individuals spend most of their adult life at work. Unhappiness in the work place can impact an individual's mental and physical health. Contrast two individual's at the extreme ends of a continuum. The first one awakens and feels excited about starting the day, looking forward to going to work. They might wonder about what they will learn that day, what they will see, what will they accomplish and what difference they will make in the life of another. Compare this to the person who dreads the thought of going to work. Repeatedly, they may hit the snooze button, wishing they could just put the covers back over their head. Instead this person may wonder what negative interactions they may encounter that day. This person may experience feelings of futility, helplessness and sadness. They may think this is just going to be another day in a long line of negative experiences. Dale Carnegie states that our fatigue is often caused not by work, but by worry, frustration and resentment. Looking at those two pictures wouldn't you rather be the first than the second? Wouldn't you rather be the individual who is excited about going to work, is motivated to work hard and strives to be the best at what they do? This individual is someone who is truly engaged in their work.

What does it mean to be engaged in ones' work? Psychologist William Kahn first identified the concept of employee engagement in 1990. He defined employee engagement as "the harnessing of organization members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performance (694)."[1] Although a consensus has not been reached on a single definition, most definitions include employee satisfaction, work involvement and enthusiasm for work. Other psychological factors have been identified as related to employee engagement. Factors include a heightened emotional connection that employees have towards their institution and/or a passion for work.[2]

Historically, nursing has been viewed as a calling and is said to be a noble profession. Nurses work selflessly, taking care of patients at all hours of the day and night. Many times they are unfairly blamed by others and take criticism not only from their patients but also from other health care providers. The environments in which they function can be emotionally charged and anxiety producing. Nowhere is this more evident than in the operating room, where Certified Registered Nurse Anesthetists (CRNAs) provide anesthesia care to the most vulnerable patients.

CRNAs are more than a nurse. They have specialized education, training and experience. On a daily basis they may literally hold patient's lives in their hands. The knowledge, understanding, critical thinking and decision making by the CRNA directly affects patient experiences and outcomes. CRNAs monitor every patient from heart beat to heart beat. Every vital sign has to be taken into consideration, and care of the patient can change in a second. The environment in which they work is highly charged and can be emotionally exhausting by the end of the shift. The continual changes in operating room personnel, extraneous demands on the CRNA time and attention and changing patient conditions, require vigilance and continuous attention to detail by the CRNA. This is not a job one can take lightly. CRNAs can't just show up, they have to be physically and mentally engaged to deliver quality safe patient care. CRNAs like other human beings have a finite store of cognitive attention. Multiple external demands on cognitive attention may reduce the amount available for patient care and work performance.

As will be seen in the review of the literature, multiple factors are intertwined with employee engagement and can affect work performance.[3] Such factors are personal engagement, job satisfaction, happiness in the workplace and burnout. Personal engagement is when an employee expresses themselves physically, cognitively and emotionally while working. These employees are usually engaged and emotionally connected to their institution.[1] Job satisfaction and happiness in the workplace are

very closely related. They involve how an employee feels about being at work on a daily basis.[3] Burnout is the opposite of employee engagement. Employees that experience burnout state they feel over loaded, unrewarded, and lack control while working.[3] If you were a business owner, wouldn't you want employee's that were connected to their workplace?

Employee engagement is a business management concept. In 2004 the Gallup Corporation identified that there were critical links between employee engagement, customer loyalty, business growth and profitability.[2] Businesses are embracing this concept because they are trying to achieve more with less, while attempting to improve quality and customer service without increasing costs. Employing an engaged workforce can help put a business ahead of their competitors.[4]

Another important factor that can influence employee engagement is the economy. The U.S. Department of Labor reports that the U.S. economy has lost 3.6 million jobs since the start of the recession in December of 2007.[5] In August 2010, unemployment topped out at 10%, as of August 2013 unemployment was 7.3%. Even though the economy is improving, U.S. international affairs, such as terrorism and prospects of war continue to affect the U.S. economy. Economic conditions of certain states can also affect employee engagement. In 2007 Michigan's unemployment rate doubled and was a full percentage point higher than any other state. In 2008 the state's economy contracted by 6%.[6] Even though the state has shown substantial signs of recovery, as of 2012, it has a long way to go. An unstable economy and high unemployment can influence job satisfaction, employee engagement and turnover of Michigan CRNAs.

In the past hospitals were viewed as charitable guesthouses, but have evolved into centers of scientific excellence. This evolution has been influenced by economics, geographic locations, religion, ethnicity, technological growth, and the perceived needs of populations.[7] With this evolution, hospitals are now being run like corporations. Their main concerns are patient safety, providing quality care and

working within a positive profit margin. To be cost effective, hospitals are looking to measure and improve both their largest asset and expense, which are their employees. Since the turn of the 21st century, hospitals have started to embrace financial performance concepts that have been successful for private businesses. Employee engagement is one of these concepts. A former CEO of General Electric, Jack Welch, stated that employee engagement is the number one measure of a company's health.[8] Hospitals have started to use employee engagement surveys to measure and monitor the engagement of their staff.

One of the largest issues that hospitals face is maintaining and recruiting high quality providers of health care. Turnover is one of the most costly expenditures of hospitals. Healthcare organizations require a stable, highly trained and fully engaged workforce to provide quality patient care. It has been calculated that the financial cost of losing a nurse is equal to twice the nurse's annual salary.[9] Maintaining a staff that is engaged with their work can ultimately reduce unnecessary turnover and promote institutional savings.

Many hospitals employ Certified Registered Nurse Anesthetists. These nurses are highly educated and well compensated. The Bureau of Labor Statistics reported the mean annual wage of CRNAs in May 2012 was $154,390. Hospital employed CRNAs are a big expense in hospital budgets. Many procedures that CRNAs perform can be billed to the patient. Reimbursement to hospitals for CRNA services doesn't necessarily cover the CRNAs salary and benefits. Also, to replace a CRNA due to turnover could cost a hospital over $300,000. An anesthesia department that employs unengaged CRNAs could ultimately affect the bottom line of the anesthesia department or institution.

As the literature review will show, employee engagement can make a positive impact on the financial performance of an institution. Not only is turnover reduced, but there are savings with medical malpractice, improved patient safety and satisfaction and improved utilization of hospital resources. The

review of the literature starts with the history of employee engagement, business concepts of employee engagement, why hospitals embrace this concept, and then finally how employee engagement impacts different levels of nursing, including CRNAs. The literature review will also contrast different studies of job satisfaction of nurses, advanced practice nurses (APNs) and CRNAs. No studies of employee engagement have been listed because there are no published studies measuring employee engagement of APNs and in particular CRNAs.

Purpose of study

The purpose of this study is to determine if Michigan CRNAs are experiencing job satisfaction and are engaged in the workplace. Additionally, this study will identify drivers of CRNA job satisfaction, job dissatisfaction and employee engagement. Finally, this study will determine if employee engagement and job satisfaction effects CRNA job retention.

Studies have been performed on nursing, APN and CRNA job satisfaction. However, there have been few studies done measuring nursing employee engagement and none measuring CRNA employee engagement. More studies need to be performed on employee engagement and drivers of engagement of CRNAs. With changing practice environments, such as recent legislative introduction of physician-opt out of supervision, the effects of the economy, and changes related to the Patient and Protection and Affordable Care Act, these economical and legal factors impact how CRNAs and APNs personally feel about their working environment. These factors can also change the environment in which CRNA's practice, especially those individuals that are medically directed by anesthesiologists. Differences in opinions between the CRNAs and anesthesiologists about supervision and scope of practice can negatively impact the psychological atmosphere of the CRNAs work environment, and possibly be highly destructive. Conflict between the CRNAs and anesthesiologists brings the element of a turf war into the operating room.[10] Due to the changing legal, political and economic factors that affect the work

environment of CRNAs these factors can promote employee disengagement, low job satisfaction and turnover of CRNAs. This study is intended to answer the following research questions and hypotheses.

Research Questions

1. What are drivers of employee engagement and/or job satisfaction in CRNA's employed in Michigan?
2. Are Michigan CRNA's satisfied and engaged with their current employment?
3. Are Michigan CRNA's planning on leaving their current jobs related to these drivers?

Hypotheses

1. Hypothesis-Michigan CRNA's are satisfied with their current employment.

   Job satisfaction involving CRNAs has been studied in the past. These studies have shown that multiple factors promote this satisfaction. In Michigan, CRNAs remain well compensated despite poor economic conditions and cuts within the state's healthcare budget.[11] The Bureau of Labor Statistics states that the 10 year growth in all job markets in the U.S. is projected to be 23% from 2006-2016. Michigan CRNAs have choices on the type of environment in which to practice. The areas are diverse, from rural to urban or private practice to a hospital setting. The individual CRNA can choose the environment which is best suited for their lifestyle. Pay, job opportunities and job diversity help promote job satisfaction of Michigan CRNAs.

2. Hypothesis-Michigan CRNA's are engaged in their current workplace.

   CRNAs go into the profession for many reasons other than economics. Terry Wicks who was AANA President from 2006-2007 wrote that he became a CRNA because of the autonomous practice, clinical decision-making, professional respect and because every CRNA he interviewed loved their work. He spoke about how he had a true love of the CRNA profession, placed value and joy on the life-long learning required by CRNA's and he felt it was a privilege to care for patients at

their most vulnerable moments and is grateful for the opportunity to make a difference in his patients' lives every day.[12] Many CRNAs have these same values. This feeling of doing more for patients and taking pride in a job well done helps promote CRNA employee engagement in the workforce.

3. Hypothesis-Michigan CRNA's do not plan to change employment.

If CRNAs are engaged and satisfied in the workplace, this will lead to higher employee retention. Institutions that have leadership that promote engagement will see improved employee health, job satisfaction and retention.[13]

Chapter II Review of the Literature

History of Employee Engagement

Historically, employee engagement has been studied for the last 80 years. However, Kahn coined the term "employee engagement", the first individual to actually study this concept was Dr. George Gallup.[14] In 1935 Gallup was determined to seek the truth about public opinions and attitudes. He was publicly responsible for measuring and tracking public's attitudes about sensitive and controversial subjects. He studied the basic methodologies and technical procedures for polling which are still in use today.[6] Gallup's most famous poll was when he predicted that Franklin Roosevelt would win the U.S. presidency. He is most notable for his polling of individuals who watched specific movies and television programs. Workplace engagement became highly studied due to Dr. Gallup's early work.[6] In 1988, Dr. Donald Clifton, a researcher in the causes of success in education and business, merged his company with Gallup. His research focused mainly on workplace environments. He discovered that one cannot simply measure employee satisfaction to make change. Satisfaction needs of the employees had to be measured and reported in a way so that managers could create changes in the workplace.[6] By the late 1990's the Gallup Corporation was the corporate leader in measuring workplace morale and overall productivity. Gallup researchers developed Gallup Workplace Audit to measure the primary needs of people in the workplace.

Many psychologists, sociologists, economists, anthropologists and psychologists are interested in workplace engagement. This is due to the high percentage of waking hours employees spend in the work environment. The more hours an employee spends at work the greater the need for that employee to experience work engagement. Engagement is multifaceted, and there are different levels of engagement.

Levels of Engagement

Kahn used personal engagement and personal disengagement to represent each end of the spectrum related to employee engagement. Personal engagement describes employees as those individuals who have fully occupied themselves physically, intellectually and emotionally at work. At the other end of the spectrum, personal disengagement is described as employees that who have uncoupled themselves, or withdrawn from their role in the workplace.[3] Gallup studied employees' perceptions of their happiness and well-being and how it affects their job performance.[15] He stated that there are three levels of engagement of employees; engaged, not-engaged, and actively disengaged. Engaged employees work with a passion and have a profound connection to their workplace. These individuals usually drive innovation and move the organization forward. Not-engaged employees are individuals that are productive, but not psychologically connected to their job. Actively disengaged employees are physically present, but psychologically absent.[16] These individuals are unhappy with any situation at work and they tend to share their unhappiness with coworkers.[7] In the extreme, they may interfere with coworker's ability to perform their duties. In addition to levels of engagement there are specific elements of employee engagement that have been identified.

Drivers of Employee Engagement

The literature on employee engagement identifies multiple drivers that impact employee engagement. These drivers are classified in two major categories, functional and emotional. As seen in table one, functional drivers include such things as bonuses and benefits. Emotional drivers include psychosocial aspects that impact how individuals react. Functional drivers, while concrete and easily measureable, have a limited impact on employee engagement. Emotional drivers, while less concrete and more difficult to measure, have a far greater impact on employee engagement. This is due to the emotional drivers influence on how people feel about their work.

Table 1: Employee Engagement Drivers

Functional	Emotional
Resources	Purpose
Rewards	Trust
	Growth
	Fun
	Customer Focus
	Recognition

Every day, employees make decisions that can affect their work performance based on their emotions. An institution that focuses on improving the emotional drivers will see a greater improvement in employee engagement compared to an institution that focuses only on functional drivers.[17]

In addition to the listed emotional drivers in Table 1; other psychological factors can influence employee engagement. Examples include the employee's: pride in the company, influence on coworker's, feeling part of a team, and the direct relationship with their manager.[18] Engaged employees want to have clarification of their work expectations, feel that they are contributing to their organization and possess a sense of belonging to something beyond themselves.[19] All of these factors are emotional in nature. Identifying drivers alone is not sufficient, measurement is necessary to determine changes in employee engagement.

Measurement of Employee Engagement

In 1998, Gallup developed a questionnaire, the Gallup Workplace Audit, based on more than 30 years of research and used to assess more than 17 million employees. This tool was developed to help provide reliability and validity to the psychometric data of engagement questionnaires. Gallup's

Workplace Audit linked 12 core elements to critical business outcomes that could best predict employee performance, and measure employee perceptions of workplace characteristics. This workplace audit has undergone revisions with the current version know as Gallup Q12.

Gallup scientists used the questionnaire to study the relationships of employee engagement and employee satisfaction and their effects on business, work profitability, productivity, employee retention, merchandise shrinkage, accidents, absenteeism and customer satisfaction.[3,12,13] The Workplace Audit can be used in any company's engagement questionnaire. In addition to the standard questions listed in table two, questions specific to an individual organization may be added. Gallup researchers recommend adding questions that address any unique culture or issue that organization is facing.[20]

Table 2: Gallup Q12 Questions[21]

Gallup Q12

Question	Identifier
1. Do you know what is expected of you at work?	Role Clarity
2. Do you have the materials and equipment you need to do your work right?	Material Resources
3. At work, do you have the opportunity to do what you do best every day?	Opportunity for Skill Development
4. In the last seven days, have you received recognition or praise for doing good work?	Social Support, Positive Feedback
5. Does your supervisor, or someone at work, seem to care about you as a person?	Supervisor Support
6. Is there someone at work who encourages your development?	Coaching
7. At work, do your opinions seem to count?	Voice
8. Does the mission/purpose of your company make you feel your job is important?	Meaningfulness
9. Are your associates committed to doing quality work?	Quality Culture
10. Do you have a best friend at work?	Social Support
11. In the past six months, has someone at work talked to you about your progress?	Feedback
12. In the last year, have you had opportunities at work to learn and grow?	Learning Opportunities

Employee Engagement Statistics

Logically, once a concept is measured it can be analyzed statistically. Gallup reports annual losses of 300 billion dollars on actively disengaged employees.[22] Management plays a key role in employee engagement. It is reported that less than 50% of Chief Financial Officers (CFO) understand the impact that employee engagement plays on their return on investments in human capital. Even though these CFO's know engagement impacts their business success, only 25% of these CFO's have an engagement plan in place.[13] When employees are engaged, 70% indicate that they have the understanding and motivation to meet customer needs, 86% say they often feel happy at work, 45% report that they get a great deal of their life happiness from work and 100% will recommend their company's product and/or services.[14] In contrast, only 17% of non-engaged employees say that they have the knowledge or motivation to meet customer needs. Disengaged employees reported that only 13% would recommend their company and only 8% get any life happiness from their work.[14] Clearly, the next step in employee engagement goes from measuring it to improving it.

Employee Innovation, Management Relations and Workplace Satisfaction

Corporations that promote creativity on the job have increased engagement among their staff. According to PeopleMetrics, 59% of engaged employees say that their jobs bring out their most creative ideas whereas, only 3% of disengaged employees say the same statement about their job.[7] Management is responsible for the relationship between the employer and the employees. A study by Kingston Business School states that only 40% of employees are satisfied with the relations between the employees and managers in their organization.[14] A United Kingdom study done by Towers and Watson reported that 39% of employees feel that senior management exhibits attitudes and behaviors that indicate they don't care about the wellbeing of their employees.[14] In 2011, the National Household Survey found that only 51% of employees felt that they were involved or consulted on decisions that

could affect their work. This survey also reported that only 27% of senior managers involved their staff in important decisions.[14] Roger Herman, a strategic business futurist, and CFO of the Herman group stated that 75% of people who voluntarily leave their jobs, really don't quit their jobs, they quit their bosses.[23]

A study published by the Conference Board in 2010 found that only 45% of Americans are satisfied with their jobs.[24] This is the lowest percentage since 1987. Worldwide, fewer than 1 in 3 employees (31%) are engaged and nearly 1 in 5 (17%) are disengaged. In 2011, despite being in the midst of the economic recession, more employees were looking for employment outside their current organization than they were in 2008. This could be due to the lack of trust that employees have for their managers. Employee trust in executives can have more than two times the impact on engagement than trust in their immediate manager.[14] Employees who know their managers on a personable level are more likely to be engaged. Also, individuals that have positions of power and authority are more engaged.[14] A study by the Sloan Center on Aging and Work showed that engagement levels are higher among older employees and increases with organization tenure.[25]

While measuring employee workplace satisfaction can be beneficial, if there is no visable follow up, just the opposite result can occur.[14] Employees' morale is adversely impacted if they perceive that the organization is utilizing resources to measure engagement without committing resource to implement the employee's recommendations. Year after year of completing job satisfaction surveys, with no evidence of change, diminishes the employee's trust in the organization. Lack of trust in in an organization can lead to an employee leaving their position.

Satisfaction, Turnover, Job Security

Earlier it was noted that more than 50% of all Americans were not satisfied in their jobs, with 25% intending to quit their job within a year.[14] One explanation of this high percentage is related to the

economic downturn in the economy.[14] Gallup researchers found a direct relationship between dissatisfied workers, absenteeism and productivity. Companies with large numbers of dissatisfied workers experienced more absenteeism and lower work productivity.[26] Employee turnover was 51% higher in such organizations as compared to other similar organizations. Turnover may be impacted by negative feelings of job security.

In 2011, more than 50% of the workers in the U.S. felt that their jobs were less secure than they were the previous year.[14] There is a relationship between an employee's sense of job security and reported happiness in their work life balance.[17] Among employees feeling secure in their jobs, approximately 70% reported they were happy with their work life balance. Conversely, among employees feeling insecure in their jobs, 50% reported that they were dissatisfied at work.[14] It is noteworthy that 72% of U.S. workers are not engaged at work. One source defined them as "sleep walking" through the day.[14] Institutions need to be concerned about disengaged employees as 18% of these disengaged employees attempt to undermine their coworkers success, impacting productivity.[14]

Productivity

Prior to the 1980's, before the concept of employee engagement, employee loyalty was the norm and fully expected. In exchange for that loyalty, employees received lifetime employment. It was not uncommon for employees to have 30, 40, 50 or more years with the same company. In the late 1970's there was a major shift with plant closings, out sourcing and employee layoffs. Employees learned a painful lesson that loyalty was no longer rewarded. Students graduating from college could not expect lifetime employment. Career advancement was viewed as a spiral rather than a ladder. This resulted in high quality employees leaving organizations. Extra time and effort of the remaining employees could not fill the gap. Employers noted that productivity slowdown was more prevalent.[27] Faced with employee turnover and decreasing productivity, employers started to look at factors that

affect job satisfaction and impact employee engagement. Employee-manager relationships were a factor that came under scrutiny.

Managers have a significant impact on factors related to productivity. If a manager is motivated at work, the individuals that they manage experience work productivity that was measured at over 90%.[14] If the manager demonstrated low motivation, the employees' productivity dropped to less than 70%.[14] Productivity impacts the operating income of an organization. Workforces that experienced low engagement scores saw operating income drop by 32.7% in one year, but in those highly engaged employees saw their operating income increase by 19.2% per year.[14] Actively disengaged employees erode the bottom line of organizations. This under engagement ultimately affects productivity.[28]

Employee engagement can impact other financial aspects of an organization. Businesses that had higher employee engagement results had a decrease in 50% of reportable accidents. Decreasing injury in the workplace results in monetary saving to the organization. Paying employee replacement costs plus sick benefits results in increased expenditures by the organization and decreased employee productivity. In the UK, engaged employees take an average of 2.69 sick days per year, as compared to the unengaged employees that use 6.19 sick days per year.[14] It is estimated that $300 billion is lost by employers in the U.S. due to employee unengagement in the workplace.

Benefits and Compensation

Benefits and compensation may result in both positive and negative effects on employee engagement. The Hay group reported that base pay and benefits have a weak relationship in regards to employee engagement.[14] Gallup reported in 2011 that 68% of employees said that their benefits are good or very good, down from 76% in 2005.[19] In 2011 employees said that 59% were satisfied with their health benefits, down from 66% reported in 2006. In 2011, 53% of American workers were satisfied with their base pay, a decrease from the 58% reported in 2005. [14] Multiple studies have shown that

work-life balance, quality of work environment, career development and an organization's climate has a greater impact on employee engagement than benefits and compensation.[29] Rewards and recognition are a factor in the work environment.

Rewards and Recognition

Rewards and recognition offered by employers don't have to affect the company's bottom line. Organizations that provide nonmonetary rewards and employee recognition promote employee job satisfaction and improve productivity. Psychic income is generated by nonmonetary recognition though such things as employee picnics, longevity awards, employee appreciation certificates, etc. Organizations use psychic income to improve morale and motivate employees on the job.[30] In the U.S, 78% of all workers said that being recognized in the workplace motivates them at work. Sixty nine percent of all employees reported that they would work harder for their organizations if they were recognized on the job. Forty nine percent of employees stated they would change jobs if they recognized by the new company for all of their efforts and contributions.[14] In a survey by Workforce Mood Tracker, only 24% of all workers were satisfied with the level of recognition they received in the workplace. In contrast, employees reporting no plans of leaving their current organization, 63% were satisfied with their current level of recognition. A company benefits by recognizing employees for their efforts in the workplace.

Profitability

A company needs to be profitable to remain in business; organizations want to yield advantageous returns. Employee engagement can affect profitability. A report by Towers Watson noted that organizations with higher levels of employee engagement have improved operating income (19.2%), whereas companies with lower engagement scores have a decline in operating income (32.7%).[14] Organizations that promote engagement by instituting good workplace practices and see

engagement scores increased by 10% can see profits increase by $2400 per employee per year.[14] Research shows that institutions with engaged employees see their profits grow as much as 3 times faster than their competitors.[31] Increasing employee engagement has also shown to increase customer satisfaction by 12%.[14,22] Turnover of staff also directly affects profitability. Employers that have highly engaged employees have the potential to reduce staff turnover by 87% and improve staff performance by 20%.[14] An increase in employee commitment to the organization by 1% can lead to an increase in sales by 9% per month.[14]

Human Resource Management of Employee Engagement

Gallup reports that managers, in most instances, are 100% responsible for employee engagement. Despite this fact 84% of managers don't know how to accurately measure employee engagement. Employees also complain that they don't see enough of their managers (24%).[14] An important aspect of employee engagement is ensuring that management educates the employee about the goals and missions of the institution. Studies show that 32% of all employees don't know the goals or missions of their corporation.[14]

Human resource departments are concerned about turnover of employees. Costs of educating and training new employees can vary based on their job responsibilities. Workforce Engage reports that it costs businesses 50-100% of an hourly employee's annual wage, plus the costs of taxes and benefits to replace an employee. Salaried employees can cost 100-200% of their annual earning and benefits when replaced.[32] On average 46% of all new hires leave their jobs within the first year. If employees do not feel they are treated with respect, 68% leave within two years. Most employers (89%) believe that employees leave because of money, when in truth, 88% leave for things other than money as shown in Table 3.[14]

Table 3: Reasons Employees Leave their Current Position

Limited Career Opportunities	16%
Lack of Respect or Lack of Support from Supervisor	13%
Money	12%
Lack of Interesting or Challenging Job Duties	11%
Lack of Leadership	9%
Bad Work Hours	6%
Unavoidable Reasons	5%
Bad Employee Relations	4%
Favoritism by Supervisor	4%
Lack of Recognition for Contributions	4%

Source: Pit-Catsouphes M, Matz-Costa C. Engaging the 21st Century Multi-Generational Workforce; Findings from the Age and Generations Study.

Economic Issues in Healthcare

Employees of hospitals engage in the delivery of health care. Health care has become a competitive business.[33] In the U.S., 17% of the Gross Domestic Product (GDP) is spent on health care.[34] Seniors spend up to 40% of their income directly on their health[35] Competition means that today's hospitals must focus on being the provider of choice, and providing superior services.

One way to provide superior services is to ensure that employees are treated as partners in the health care delivery process.[24] Historically, health care administrators have not always considered employee satisfaction when it has assessed the organization's competitive edge. Only since 2008 have health care administrators worried about how employee satisfaction can impact the satisfaction of

patients.[36] To be a provider of choice patients must be satisfied with services received. Patient satisfaction is impacted by employee satisfaction.

Another competition issue that hospitals face is being able to recruit top talent for meeting the demand for quality patient care.[37] There are an insufficient number of new health care graduates entering the medical workforce to meet the demands for hospitals. Not only do hospitals need to recruit this talent, but they need to retain these individuals for the long term.

In addition to the inadequate supply, health administrators also need to worry about employee retention or turnover. Personnel costs are a major expense in any hospital budget, with nurses as the largest percent of employees. The nursing turnover rate is 21.3% ,with even higher rates in the critical care areas.[23] Although the nursing shortage has slowed over the past few years related to the recent recession, it is anticipated that the nursing shortage will reach a significant level in the U. S. in 2020.[38]

Turnover in personnel is expensive. [23] A 2004 study by Press Ganey Associates, Inc. showed that between 3.4% and 5.6% of a hospital's operating budget can be spent on employee turnover. When hospital employees leave an institution, 21% of the turnover costs are related to separation expenses, temporary replacement costs, and expenses related to recruiting, hiring and employee orientation. The remaining 79% of the cost related to turnover is due to loss in productivity.[23] In 2010 it was reported that the national operating margin was 5.5% and in Michigan the average is 2.8%. Employee turnover can have a marked impact on that thin margin.[39]

The physical environment of a hospital can have an impact on employee turnover. In 2000, the Center of Health Design implemented the Pebble Project. Using an evidenced based design this project helped hospitals address turnover, improve quality and promote patient safety. They studied the clinical and financial advantages of designing a building that "embraces the environment of healing on improving patient outcome, reducing staff turnover, improving community relations and increasing

contributions". [40] Two Hospitals in Michigan participated in the Pebble Project. Both Bronson Methodist Hospital and Karmanos Cancer Institute had design features and policies that improved patient satisfaction, decreased turnover, reduced medical errors and decreased costs.[29]

Some hospitals are looking to improve their financial outcome by not only improving the patient and staff environment, but also by looking at alternative ways to deliver higher quality patient care. Forum for People Performance states, "While some improvements in care quality can be reached through investments in technology and infrastructure, the most dramatic improvements are achieved through people (2)."[24] Hospitals have also found that employee engagement and satisfaction does relate to patient satisfaction. Health care employees that are not satisfied in the workplace can negatively impact the quality of care and adversely affect patient satisfaction.[23] Engaged hospital employees create a positive patient experience and disengaged hospital employees tend to create a negative patient experience.[25] A dissatisfied patient talks to more friends and family about the negative experience, as compared to a person with a positive patient experience.

Patient Satisfaction

Press Ganey Associates is a company committed to improving the patient experience and providing insights to hospitals. Information in their database compares patient satisfaction to employee satisfaction. Press Ganey researchers identified the top three factors that influenced patient satisfaction; sensitivity to patient needs, cheerfulness of practice and care received during a visit. The results confirmed that patients were just as concerned about employee attitudes as they were about their medical care. The researchers also reported that dissatisfied hospital workers tended to complain not only to the patients, but also to their visitors about the problems the employee's experienced in their hospital. This negative type of communication resulted in lower patient satisfaction scores. The results of this study showed that patient and employee satisfaction are interconnected. Hospitals that

use inpatient and employee satisfaction surveys see a correlation between the two satisfaction scores. Hospitals that have good inpatient satisfaction scores will also have good employee satisfaction results. Employee satisfaction not only impacts patient satisfaction but can impact patient health outcomes.

Employee Engagements Effects on Patient Satisfaction and Health Outcomes

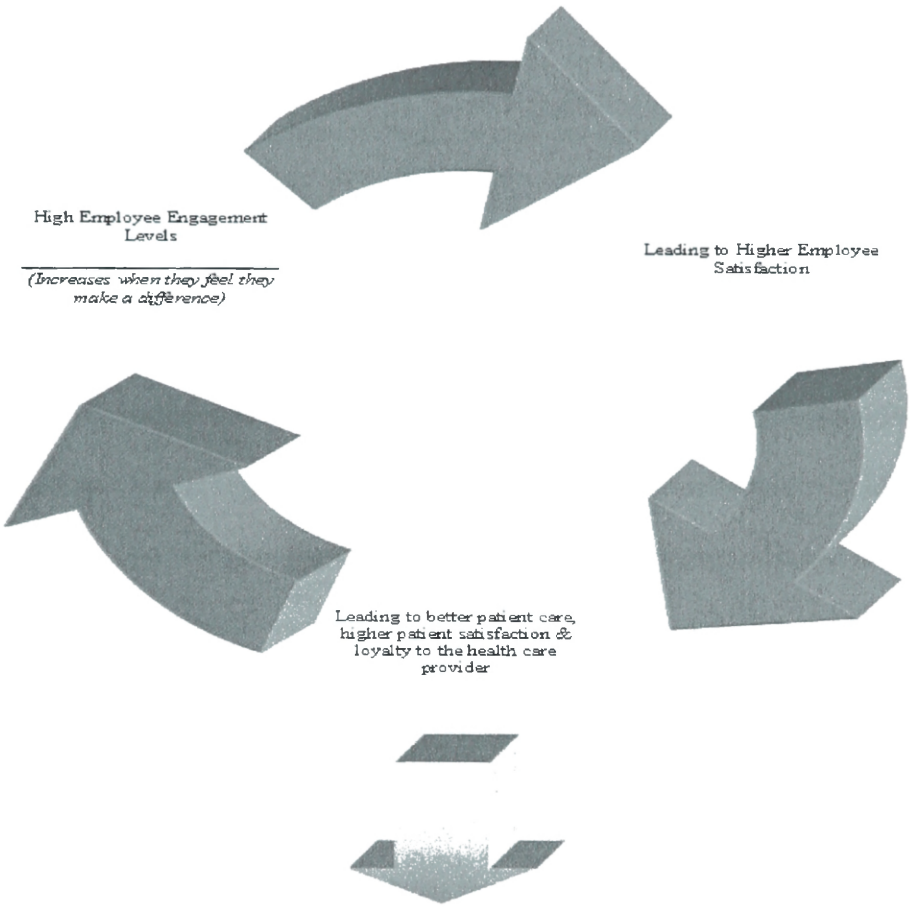
A 1996-1997 Rand study looked at admissions for 2300 acute myocardial infarctions involving 23 New Hampshire hospitals. They found that patients who perceived they received poor care in the hospital had lower ratings of overall mental and physical health. Also, those patients that held this perception were more likely to have chest pain 12 months after their myocardial infarction, as compared to the other patients.

Multiple studies by Press Ganey Associates showed that there was a direct correlation between patient satisfaction levels, the quality of care received and the patient's overall health status. They found that satisfied patients responded more positively to medical management and had better clinical outcomes. This ultimately resulted in better financial outcomes for the hospital.[25] Improvement in patient outcomes can result in a reduction in the patient's length of stay in the hospital, which is beneficial to hospitals that receive prospective reimbursement, rather than fee for service.[25]

Peltier, Dahl and Mulhem studied employee satisfaction in relation to patient satisfaction at a New York hospital. They found that patients who have higher levels of satisfaction are more likely to recommend the hospital to others when they are treated by departments that employ individuals that are highly satisfied in the workplace.[26] The key conclusion of their study was that an emphasis needs to be placed on how the employees feel about what they do. If not, there will be negative patient experiences.[25] Gallup also looked at employee engagement and patient satisfaction. Gallup found that employee engagement influenced patient satisfaction over time, but the reverse did not apply, that is, an institution having high patient satisfaction scores did not improve employee engagement.[41] The

following diagram shows the link between employee engagement, patient satisfaction, employee satisfaction and the hospitals financial performance.[24]

Figure 1: Key Performance Measures of Engagement



Source: Love D, Revere L, Black K. A current look at the key performance measures considered critical by health care leaders. *Journal of Health Care Finance*. 2008:34(3):19-33

Hospital Employee Engagement

Many hospitals have identified the importance of measuring employee engagement.[24] These evaluations are often conducted annually, but can be done every few years. The surveys can reveal

what issues are important to the employees. The results of the survey also help management prepare for the future. This allows the employees' interests to be incorporated into the institution's strategic plan.[42] Employees look to leadership to take responsibility in strategic planning and addressing problems.

A study by Gallup of their 2005 employee engagement database showed healthcare employees in the U.S. are more engaged at work than workers in other industries.[43] Their employee engagement is not based on functional drivers, such as pay and benefits. Tom Atchison, a president of a health care management firm, stated "benefits and pay cannot be the only thing to improve engagement."[44] Hospital leaders need to focus on professional development. Managers in healthcare need to understand that employee's need to be challenged to help them have a feeling of connection at work. The three biggest factors that affect engagement for healthcare employees are management culture, organization culture, and the ability to empower employees.[34]

Financial Aspects of Hospital Employee Engagement

Why should hospitals encourage employee engagement of their staff? Studies have shown that having engaged employees' leads to employee retention, increases patient safety, lowers malpractice claims, improves quality of care and increases patient satisfaction.[45] The Institute of Medicine (IOM) published a statement that "human error is the greatest contributor to accidents in the workplace."[26] The IOM recommends that hospitals, in order to prevent errors, should develop a working culture in which communication freely flows regardless of authority gradient, that there is improved auditory communication, and that hospitals promote effective team functioning.[26]

A study done involving anesthesia found that 82% of preventable incidents were due to human error.[26] Preventable drug adverse events occur in almost 2% of all hospital admissions. These adverse events on average increase hospital costs by $4700 per admission. This is approximately $2.4 million

annually for a 700 bed hospital.[26] Employee engagement not only decreases medical errors, but also can ultimately contribute to a reduction in medical malpractice premiums. If a hospital can reduce medical errors by 5%, there is noticed reduction in medical malpractice premiums by 4%.[26] A Gallup business impact analysis demonstrated that hospitals with the lowest levels of employee engagement (bottom 25%) had an average of $1,120,000 more in malpractice claims per year than hospitals with the highest engagement scores (top 25%).[46] Patient safety is also affected by employee engagement. A study looking at hospital acquired blood stream infections found that these types of infections were 18 times higher in less-engaged patient units.[37]

Nonclinical factors can affect the financial performance of a hospital. Workers who are not happy in the workplace have increased absenteeism. A Health and Productivity Management Benchmarking Study performed in 1999 showed that unscheduled absences cost U.S. hospitals $810 per employee per year.[26] Lower recruitment costs and higher patient loyalty contribute to an institution's bottom line.[47] A Gallup 2012 report noted that hospitals that improved their mean engagement score by 0.2 or more also earned $172 more per patient admission.[48] Top performing hospitals know that having an employee engagement strategy can help achieve corporate goals.[26] This could make them the provider of choice.

Nursing Engagement

Job satisfaction and employee engagement vary between the different levels of job classifications in health care. Gallup found that support personnel, those that work in dietary or housekeeping had the highest levels of satisfaction and engagement. Professionals such as pharmacists and physical therapists come next on the engagement ladder, followed by administrative and clerical workers, and then licensed technical employees and coming in last are Registered Nurses (RN).[49] Why is there such a difference between hospital employees? It is due to the different drivers of workers'

satisfaction in the various job classifications. Each job classification has its own specific workplace challenges.[39]

A Gallup 2004 hospital employee engagement data base measured RN's engagement scores 0.12 points below all other hospital employees. In this data base, Gallup notes that many nurses reported not having the materials or equipment they need to do their job. Most of this related to staffing shortages and lack of equipment needed by nurses to perform patient care. The nurses also scored low in relation to the recognition item. Nurses felt that no one cared whether they did a good job or not. Lastly, they didn't feel that their opinions counted in the workplace.[39] Nurses are caring individuals committed to quality. Many perceive their job as one of the most difficult in healthcare. Nurses don't feel they are getting the support they need to accomplish their jobs.

Gallup reports that for hospitals to be successful they should have a nursing ratio of engaged to actively disengaged of 4:1. Currently the ratio for nurses in the U.S. is 0.75 to 1.[50] Peltier, Kah and Mulhern in their literature review found that nursing shortages and a lack of loyalty by hospitals has helped produce some of nursing's disengagement.[26] This lack of loyalty is related to the cost cutting strategies employed by hospitals in the 1990's. Hospitals cut costs like many other industries, and this took away their focus on quality of care to patients. This resulted in broken relationships between hospitals and nursing personnel. Not only is there this broken relationship, but some surveys indicate that nurses only have loyalty to their patients and not to their employers. Some nurses don't feel loyal to their employers because they feel hospital executives are not in touch with the demands of patient care.[26] Gallup research reports that nurses have lower employee engagement scores due to a nurses' perceived decreased quality of patient care, increased nursing turnover and increased safety concerns.[41]

A study by Rivera, Fitzpatrick and Boyle identified the 9 most important workplace attributes that influence nursing engagement.[51] These attributes are indicated in Table 4 and there is no ranking associated with the attributes.

Table 4: Workplace Attributes Influencing Engagement

1	My manager is an effective advocate for staff nurses
2	I believe in my hospital's mission
3	My hospital effectively selects and implements new technologies to support nursing
4	I have experienced significant professional growth over the past year
5	My hospital's administration acts in accordance with its stated mission and values
6	I receive positive recognition for providing excellent care
7	I am proud to be a nurse
8	I typically have enough time to spend with my patients
9	Hospital administration respects the contribution of nursing

Rivera R, Fitzpatrick J, Boyle S. Closing the RN Engagement Gap; Which Drivers of Engagement Matter? *Journal of Nursing Administration.*2011;41(6):265-272.

There are specific elements that account for differences in empowerment and job satisfaction in nursing. Nurses have improved job satisfaction if they have accessibility and support of their nursing leaders, and are allowed to make clinical autonomous evidence based nursing decisions. Nursing empowerment improves when nurses have access to opportunities, information and resources.[52]

There are certain factors common in hospitals that have high nursing satisfaction scores. These hospitals have accessible nursing leadership, frequent communication from nursing managers to their staff, and employees that are empowered to satisfy patients.[26] A 2006 study by Wager determined that

the primary factor in nursing satisfaction was the relationship that the nurse had with their immediate supervisor. This study states that employee trust in their immediate supervisor is the most important factor in initiating change in regard to employee engagement.[26]

Another important factor impacting nursing engagement is related to the age of the nurse. Due to the downturn in the economy, nurses just like other employees, have remained in the workplace and have delayed retiring.[17] This can actually be good for nursing engagement. Older nurses tend to be more engaged in the workforce than younger nurses (age<35).[17]

When addressing nursing employee engagement, the expense of turnover must be addressed. Nursing turnover is one of the biggest budget concerns of nursing and hospital management, as it can financially impact the bottom line of the hospital's nursing budget. A 2000 survey of turnover in acute care facilities found that replacement costs for nursing positions are equal to or greater than two times the nurse's salary.[53] Nurses in specialties, such as a critical care, could cost up to $145,000 to replace. In nursing, replacement costs include the use of traveling nurses, temporary replacement costs for per diem nurses, overtime, lost productivity, training of new staff and terminal payouts.[44]

Improving nursing employee engagement

There are initiatives that hospitals can institute to improve employee engagement among nurses. The nurse manager plays a critical role in promoting nursing engagement and building a culture of engagement. The nurse manager also needs to understand the hospital's goals and mission in order to communicate them to staff. Additionally, they need to recognize that their own contribution to employee engagement can impact patient care. When nursing management builds an atmosphere that supports professional development, individual employee growth, nursing teamwork, and the nurse-physician collaboration, they promote an atmosphere that encourages nursing employee engagement.[26] Hospitals need to ensure that nurse managers have the authority to act appropriately to ensure

continued nursing excellence and patient satisfaction. They need to ensure that there is an appropriate feedback mechanism for all managers to address issues and that all units or departments are uniformly aligned to the mission and goals of the hospital. Communication is vital in engaging the nursing workforce. This communication can be implemented by having regularly scheduled meeting and management rounds in the clinical units with the nursing staff. Implementation of a shared governance model in nursing offers more opportunities for nurses to be involved in organizational issues and their solutions. This leads not only to improved engagement in the hospitals nursing workforce, but helps the nurses build relationships within and outside the organization.[26,43,44]

Nursing Studies of Employee Engagement and Job Satisfaction

Very few studies have been performed on nursing employee engagement, but multiple studies have been performed on nursing satisfaction. Carter and Tourangeau studied nurses in England from September 2009 to December 2009.[54] The aim was to test a model of eight thematic determinants as to whether nurses intended to remain in their nursing roles. This is part of a survey that is conducted annually in England since 2003. Questionnaires were distributed to 288,435 employees at 390 National Health Service organizations with a 54% response rate. This paper based questionnaire had 31 questions which measured 8 main thematic dimensions, using a 5 point Likert scale. The dimensions and alpha scores are listed in table 5.

This study also looked at nursing characteristics such as age, years of service, hours working and location, type and size of organization. Descriptive statistics, Cronbach's alpha and correlations between study variables were calculated using SPSS. This study found that nurses who reported being psychologically engaged were less likely to leave their current position. Factors that influenced turnover rates were a good work-life-balance, perceived availability of developmental opportunities, and nurse's encountered work pressures. The authors noted that relationships formed with colleagues and patients

actually had little effects on the turnover rate of nurses.[45] They concluded that hospitals need to focus on promoting employee engagement by offering nursing staff both physical and monetary resources, allowing more control to nursing in regard to organization control of nursing procedures and patient care.[45]

Table 5: Alpha Scale Scores of Thematic Dimensions

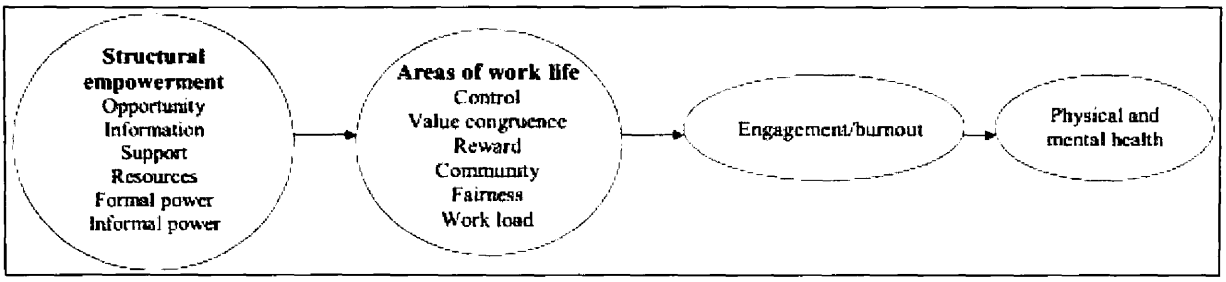
Thematic dimensions	Cronbach's Alpha Scale
Nurses intention to leave	0.92
Relationships with co-workers	0.78
Conditions of the work environment	0.70
Relationship with and support from manager	0.92
Work Rewards	-
Organizational support and practices/Organizational support in promoting a healthy work-life balance.	0.85/0.83
Physical and psychological response to work	0.76
Patient relationships and job content	0.83

Carter M, Tourangeau A. Staying in nursing: what factors determine whether nurses intend to remain employed. *Journal of Advanced Nursing. 2012;68(7):1589-1600.*

Laschinger and Finegan tested a model linking structural empowerment to the 6 areas of work-life-balance that are thought to be important precursors of work engagement and nurses physical and mental health. Their model shows that if nurses are not given opportunity, information, support, resources and power in the workplace, it can impact how nurses feel about their work environment. If the structural empowerment impacts negatively on areas of the nurses work life, this can lead to burnout and impact not only their mental health but their physical health. If structural empowerment

impacts positively on areas of the nurses work life, the nurse will be engaged and have improved physical and mental health. Figure 2 is the model tested in this study.

Figure 2: Structural empowerment effects on work life balance



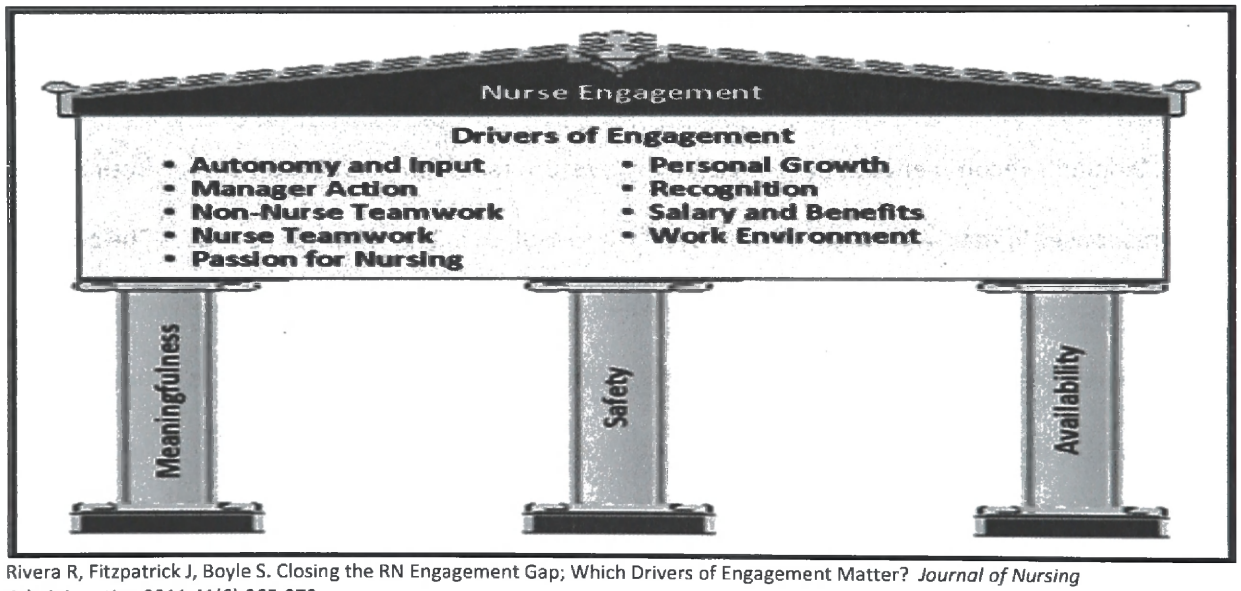
Laschinger H, Finegan J. Empowering Nurses for Work Engagement and Health in Hospital Settings. *Journal of Nursing Administration*.2005;35(10):439-449.

A nursing study by Herzberg, The Conditions of Work Effectiveness Questionnaire II, a 19 item scale, was mailed to 500 randomly selected nurses listed in the College of Nurses of Ontario registry list. They used Dillman's recommendations to maximize the return rate.[55] Dillman's total design method improves responses in mail and telephone surveys.[45] This resulted in a 57% response rate.[46] The authors used several instruments to measure the study variables. All items were rated using the Likert scale. These items were then summed and averaged to create the study's theoretical constructs. Their scales had an acceptable internal consistency with reliabilities ranging from 0.72-0.97. This study also measured demographic variables. Data collected was analyzed using AMOS statistical package in SPSS-PC. Nurses in this study stated that their environment at work was only somewhat empowering. The nurses felt that the greatest area of mismatch in the work-life areas was related to workload, reward and community. They felt the most control over their work by having a good fit between their personal values and those of their employer. Only moderate levels of burnout were reported. They exhibited few physical symptoms, moderate energy levels, and moderate levels of depression. [43]

A study by Rivera, Fitzpatrick and Boyle studied the relationship between RNs' perceptions of drivers of engagement and their workplace engagement. This study noted that there was limited

research on nursing work engagement in the literature. The authors' independent variables were the nurse's perceptions of the presence of the 9 drivers of nurse engagement. RN engagement was the dependent variable. These drivers of nursing engagement were operationally defined as the subscale index scores in the nurse engagement survey (NES). There was not a total score for the instrument, instead, item scores for each subscale were added and an item mean was calculated to create a subscale index score. RN engagement was defined as the average index score of the NES. A conceptual framework of the 9 drivers of nurse engagement is listed in figure 3.

Figure 3: Nine Drivers of Nursing Engagement



Rivera R, Fitzpatrick J, Boyle S. Closing the RN Engagement Gap; Which Drivers of Engagement Matter? *Journal of Nursing Administration.*2011;41(6):265-272.

The NES was an electronic questionnaire with 64 questions administered to 1,592 RN's in a large urban academic university center. The response rate was 32%. There were 3 sections; demographic questions, questions regarding the presence of nurse engagement drivers in the workplace, and questions regarding RN engagement. Their first research question was, "What are the RN's levels of Engagement?"[40] They found that 31% were engaged, 46% were content, 17% were ambivalent and 6% were disengaged.

The next NES research question looked at the relationship between each driver of engagement and RN engagement. Correlation analysis was used to describe the strength of the relationships between drivers of engagement. Pearsons product moment correlation coefficients were computed from the data. The results showed that each of the drivers of engagement were significantly positively correlated to the engagement index with P<.001, using a 2-tailed test. To test for significance between the individual drivers of the different types of engagement, t tests for independent samples were calculated. The largest index was seen between the engaged and not engaged in relation to manager action (1.12). The lowest difference between these two categories was in relation to salaries and benefits (0.57). Additional analysis was performed on the data using X^2 tests. This was used to determine significant differences between engaged and not-engaged RN's and the different demographic variables measured. The authors found that there was a significant difference between age and engagement (X^2=25.12, p=.001). Nurses older than 36 were proportionally more engaged than those younger than age 36.

The RN's studied were found to be a highly engaged group of nurses. They had higher average engagement scores, as compared with the respondents from the NEC Advisory Board benchmark study. This study also supports research done by Herzberg. Herzberg stated that factors such as "good pay and benefits do not motivate employees; rather, their lack causes dissatisfaction.[56] He stated that motivational factors such as recognition by one's manager and a sense of achievement are drivers of satisfaction with the employee's overall job experience.

Laschinger and Finegan identified areas that needed to be researched. They said that nursing engagement is linked to patient satisfaction, but more studies needed to be performed. FORUM for People Performance Management and Measurement studied the relationship between employee satisfaction and hospital patient experiences. Peltier, Dahl and Mulhern performed this research for

FORUM. Their study involved a major New York Hospital. They reviewed the current literature on health care performance, performed a primary data collection though an online forum and had interviews with key hospital staff. They also performed empirical analysis of employee and patient satisfaction data.[24] The goal of this analysis was to determine if there was a link between the way employees feel about their jobs, and the quality that the patient experienced as measured by their patient satisfaction survey. Employee and patient satisfaction data was aggregated at the department level (individual employee and satisfaction data was not available for this study). Employee satisfaction was studied using a 6 point agreement scale. Patient satisfaction was measured using a 100 point satisfaction scale, using a wide variety of dimensions representing multiple aspects of the patient experience.

To test the hypothesis, greater satisfaction/engagement leads to higher patient satisfaction or service quality; they used a one-tailed t-test that compared the mean patient satisfaction scores for the employee satisfaction group. Of the five employee satisfaction measures they used, the authors found that there was a significant difference for the two most important measures of employee engagement. Those measures are 1) would you recommend employment here, and 2) overall satisfaction with one's job.[24] The authors found that departments with a higher employment referral likelihood score had significantly higher patient satisfaction scores (82.5 vs. 78.2, $p<.05$). The patients overall rating of care provided was 83.4 vs. 80, $p<.06$. The overall summed patient rating for all questions was 78.6 vs.76.8, $p<.05$.

The authors noted that the primary contribution of this study was determining that hospital departments that have higher levels of employee satisfaction provide better experiences for the patients that they serve. Patients that received care in the departments that had higher levels of employee satisfaction said they would recommend that hospital to others. Those same patients also

rated the quality of the care they received as higher. The authors concluded that the patient either consciously or unconsciously infers that the care they received is better because of the environment that results from having satisfied employees.[24]

The final two nursing studies included in this literature review were performed by the Idaho Nursing Workforce Center[57] and AMN Healthcare[58]. These two surveys looked at job satisfaction. The Idaho study also studied nursing retention, whereas the AMN study looked at the career plans of nurses. The following table is a summary of common characteristics of the two studies.

Table 6: RN Job Satisfaction Survey Results

Characteristics	Idaho RN Job Satisfaction 9000 Participants	2011 Survey of RN's 5000 Participants
Education	11% Diplomas, 13% LPN, 29% BSN, 47% AD, 32 individual PhD	12% Diploma, 30% AD, 40% BSN, 12% masters, 0.5%PhD
Age	Average age was 47.6 years. Range 20-86. 45% over age 50	20% 19-31 years, 44% 40-54 years, 36% >55 years
Employment in hospitals	57 %	64%
Job satisfaction	47% very satisfied, 37% somewhat satisfied, 8% neutral, 6% somewhat dissatisfied, 2% very unsatisfied	58% satisfied
Satisfied with careers	47%	74%
Plan to retire	18%	6%
Plan to not work in nursing in the next 3 years or reduce the volume of clinical work	10%	45%
Job negatively impacts health	16%	48%

Lind B. Idaho Nursing Workforce Center; Idaho RN Job Satisfaction and Retention: Results of a Survey of Idaho Nurses, Spring 2007. Idaho Alliance of Leaders in Nursing. http://www.nurseleaders.org. Published 2007. Accessed 5/31/2012.
2011 Survey of Registered Nurses; Job Satisfaction and Career Plans. AMN Healthcare. http://www.amnhealthcare.com. Published 2011. Accessed July 3,2012.

The nurses' education, age, and place of employment were similar between the two studies. The Idaho job satisfaction survey divided satisfaction into multiple categories, whereas the 2011 survey

measured satisfaction as one category, but the results were similar. When asked if they were satisfied with their careers, the Idaho nurses were less satisfied than the 2011 survey participants. More nurses surveyed in 2011 planned to decrease their hours or leave nursing as compared to the Idaho study. The nurses studied in 2011 felt that their job negatively impacted their health more than the nurses in the Idaho study.

The Idaho study also addressed retention. A series of two questions asked for the nurses' opinions about their current work environment and how strongly these opinions influenced their desire to stay or leave their current position. The author noted that it is important to measure both satisfaction and retention, because job satisfaction is not necessarily the same thing as the intent for an employee to stay in their current position. The nurses reported that their highest satisfaction is related to their ability to make appropriate decisions about patient care. They also report high satisfaction regarding relationships with physicians. The factors that are related to the lowest levels of job satisfaction are job stress, salary, career advancement and workload. The most frequently cited factors that contribute to nurses wanting to leave their job are salary, job stress, nursing workload, and career advancement. The author noted that with both retention and job satisfaction ranking, the overall environment, and the relationship with the supervisor ranked near the middle. Factors that were ranked as the lowest to influence nurses on leaving their current positions were, autonomy and teamwork or cohesiveness with coworkers.

The study by AMN looked at the future of nursing career plans. They noted that 24% of nurses plan to seek a new place of employment as the economy recovers. Also, 8% of RN's said they returned to the workforce due to economic reasons, up from 3% in 2010. Responses to their survey indicated that 74% of nurses were satisfied with their career choice, but 47% were not satisfied in their current job. If the economy continued to improve, 45% of the nurses stated they would alter their career path by either changing jobs, reducing the number of hours in which they work, or leaving the patient care

setting. The authors stated that, "the 2011 survey results continue to send a strong signal to healthcare facilities regarding the importance of nurse retention and nurse job satisfaction, particularly as the economy begins to improve (8)."[46]

The authors of the AMN healthcare 2011 survey concluded that nursing job satisfaction is declining and a significant number of nurses plan on either retiring or reducing their hours at work. Their study supports the theory that more nurses are working due to economic reasons. One statement in their conclusion is probably the most important for hospitals, which was that one in four nurses plan on changing employers.

Job satisfaction is only a parameter of employee engagement and is not a direct measurement. Only drivers of engagement can be identified by performing a job satisfaction survey. There have several nursing studies that have measured job satisfaction since 2010. Since congressional passage of the Patient Protection and Affordability Care Act, health care providers have seen laws enacted that could impact job satisfaction. The AMN study mentioned earlier, noted that their survey was a snapshot of current job satisfaction levels across the country. They discussed the impact of the new health care law and the recent economic downturn of the global economy. The authors of this study found that 8% of RN's returned to the workforce for economic reasons, but 45% said that if the economy were to improve they would alter their career plans, change employers, or reduce hours.[46]

Nursing Survey Tool/Nursing Turnover Survey Tool/Nursing Engagement Tool

There are very few valid nursing survey tools available to researchers that are economical to use. However, the Index of Work Satisfaction is readily available and the author Dr. Paula Stamps encourages other nursing researchers to use her tool. Dr. Stamps notes that her tool is the best know and the most widely used. Using this tool has allowed others to redesign processes in relation to the work that nurses perform and improve patient care. Multiple nursing studies have used the Index of

Work Satisfaction Questionnaire. This instrument is used to assess work satisfaction of nurses. The scale consists of 12 components based on employee satisfaction. The survey itself is divided into two parts, each part containing 6 components. This tool also uses two scales, intrinsic and extrinsic. The intrinsic scale addresses autonomy, professional status and interaction. The extrinsic scale looks at task requirements, pay and organizational policies.[55] Part A of the questionnaire measures the importance and expectations of nurses in 6 identified job components. Part B of the questionnaire measures job satisfaction with another job component.[55]

The IWS was revised by Stamps and Piedmonte in 1986.[55] These researchers then conducted factor analysis to assess the validity of the attitude section of the questionnaire. The measure of the internal reliability was determined by using Cronbach's coefficient alpha. A Cronbach's alpha of 0.912 shows that this questionnaire has an acceptable reliable level.[55]

The Anticipated Turnover Scale (ATS) was developed by Hinshaw and Atwood in 1978, to study turnover intention among nursing staff. The ATS is an instrument to index the employees' perception about possibly voluntarily terminating their position at their present job.[51] The ATS instrument consists of 12 self-reported Likert format items. There are 7 response options that range from agree strongly to disagree strongly.[51] There are 4 purposes for the ATS study, they are; identify the impact of individual staff characteristics and organizations factors on turnover, provide a profile of characteristics of employees that leave versus those that stay, estimate the degree of predicted actual turnover and, describe the relationship between any nursing characteristics and individual or organizational variables.[57]

The reliability of the 12 item ATS instrument was measured after extensive reliability and validity testing by the original authors. They used coefficient alpha to determine an estimate of internal

consistency, the standardized alpha was 0.84. The authors used principal components factor analysis and predictive modeling techniques to estimate validity.

Work engagement has been measured in nurses working in Europe using the Utrecht Work Engagement Scale (UWES-17). This particular tool has been used in multiple countries in Europe. The UWES measures employee's vigor, dedication and absorption. Vigor for the purpose of this tool refers to the employee's high levels of energy and resilience, the willingness to invest effort, employee's not be easily fatigued, and the employee's persistence in the face of workplace difficulties. There are 6 questions in this tool that measure vigor. Dedication is defined as a deriving a sense of significance from the employee's work, having a feeling of enthusiasm during work, being proud of the work accomplished, and the employee's feelings of being inspired and challenged by work. The UWES-17 has 5 questions that measure dedication. Absorption is measured using 6 questions. Absorption refers to the employee being totally and happily immersed in their work. It also relates to the employee having difficulties detaching oneself from their work so that time passes quickly, and forgets everything else that is around.[59] Studies have been performed using the UWES since 1999. They show that the UWES is a valid tool that can be used to measure work engagement. Wilmar Schaufeli gives permission on his website to use the UWES scale. To comply with the rules on his website, data from this survey must be forwarded to him at the completion of this study.

Job Satisfaction and/or Retention of Nurse Practitioners

There have been a few studies that have measured job satisfaction utilizing Advanced Practice Nurses (APN) and no studies on APN employee engagement. None of the job satisfaction studies of APN's have included CRNA's, even though they are considered APN's in most states. APN's provide primary and specialized care in both rural and urban settings.[60] APN's make significant measurable contributions, and their services have been shown to reduce the frequency of follow-up clinic visits.

They also have similar patient satisfaction scores and health outcomes as compared to physicians working in the same area.[47] It can be very difficult to make a generalized statement concerning job satisfaction with APN's. Because issues such as their practice environment, state laws and economic factors vary widely by state. Hospitals should be concerned about the job satisfaction of APN's. Job satisfaction can be highly correlated to an institutions recruitment and retention of staff.[61] Having a stable staff of APN's is important to hospital administrators. APN's balance the provision of high quality patient care within the cost restraints imposed on hospitals.[62]

For this literature review, two separate studies of APN's were analyzed. Both studies measured job satisfaction in APN's using the Misener Nurse Practitioner Job Satisfaction Survey. Their literature reviews also utilize Herzberg's dual factor theory of job satisfaction to explain job satisfaction. This theory identifies both intrinsic and extrinsic factors that affect job satisfaction. Intrinsic factors (motivators) are those things that affect job satisfaction such as: achievement, recognition, responsibility and advancement. Extrinsic factors (hygiene) are factors of dissatisfaction, such as the working conditions for employees, salary, security, interpersonal relationships and relationships with hospital administration or an immediate supervisor.[63]

Today's changing healthcare environment is responsible for many of the challenges facing ANP's. Forty years ago, the major concern was initiating the role of the APN. Today, APN's are faced with the challenges of expanding and maintaining their scope of practice, all while providing quality, cost effective patient care.[64] It is important for hospital administration to understand the issues that affect the job satisfaction of ANP's. Turnover of these highly trained and specialized nurses can be expensive, and it can also be difficult to replace them. APN turnover is not only expensive monetarily but can also cause patient dissatisfaction.

Table 7 summarizes that the APNs and the NP experienced job satisfaction. The results of both studies are similar. Both groups were satisfied with their pay and benefits. Each study noted that the respondents were dissatisfied with their professional growth, intrapractice parternishiip and collegiality. Table 7 compares these two studies, noting the respective findings.[47,51]

The article by De Milt stated that there were significant differences in job satisfaction based on the APN's intent to leave their current position. Also, there were higher job satisfaction scores in relation to the APN's intent not to leave their current position. This authors found that there was a significant negative relationship between job satisfaction and the APN's anticipated job turnover.

Faris, Douglan, Maples et al. reported that APN's in the Veterans Health Administration scored lower than APN's in the private sector in relation to total job satisfaction and all subscales except benefits, when compared to other studies done on APN job satisfaction. This study found that clinical nurse specialists had greater job satisfaction than the APN's. They also noted that the most common barriers to practice were: too many non-APN job tasks, lack of administration support, and inadequate time for performing research activities.

Table 7: Job Satisfaction of APNs in the VA health system vs. NPs who attended the 2008 American Academy of NPs.

Study:	Job Satisfaction of APN's in the Veterans Health Administration Author: Faris	Nurse Practitioners Job Satisfaction and Intent to Leave Current Position Author: DeMilt
Participants:	n=1983 APN's/CNS	n=254 APN's
Instruments:	Two instruments: MNPJSS* and investigator developed instrument	MNPJSS* ATS**
Chronbach's Alpha:	0.73-0.96	0.75-0.94(MNPJSS) 0.68 (ATS)
Findings:	Respondents were minimally satisfied with their job overall, most satisfied with their benefits, and least satisfied with professional growth and intrapractice collegiality.	APN's were satisfied with benefits, challenge and autonomy. They were minimally satisfied with professional growth, intrapractice partnership and collegiality. 27% planned to leave current position, 5.5% planned to leave nursing, 5.5% planned to leave APN role as direct provider

*Misener Nurse Practitioner Job Satisfaction Survey

**The Anticipated Turnover Scale

Certified Registered Nurse Anesthetists (CRNA)

CRNA's were the first nurse practitioners to administer anesthesia, thus making them the oldest APN group.[65] They are recognized as a specialty within the nursing profession. In every U.S. state, CRNA's are recognized by designated state licensing, regulatory bodies and boards of nursing. CRNA's like other APN's have seen their scope of practice increase over past few decades. A study done in 2010 by Health Affairs, show that there are no differences in patient outcomes when their anesthesia is administered by either a CRNA or a physician anesthesiologist.[66] CRNA's are like any other employee, they can be engaged in their work, satisfied with their job or they too can be unengaged and

dissatisfied. However, they may have different drivers related to their job satisfaction and employee engagement.

How can CRNA's have different drivers related to job satisfaction and engagement? Aren't they nurses, and have similar issues? CRNA's combine professional nursing skills with the science of anesthesia, to deliver comprehensive anesthesia care. Even though most CRNA's work under the supervision of a physician, 17 states have opted out of physician supervision. In October 2012 the Michigan Hospital Association supported legislation for removal of physician supervision for CRNA's. Removing physician supervision for CRNA's would allow CRNA's to practice independently. This legislation has become a political battle between the anesthesiologists and CRNA's in the state of Michigan. Nurses will always work under the direction of a physician, but CRNA's in certain states practice independently. This factor alone makes CRNAs different from nurses.

In 2012, the National Board on Certification and Recertification of Nurse Anesthetists (NBCRNA) established new criteria for recertification. Recertification of all CRNAs will be mandatory as of 2024. Also, the NBCRNA raised the passing standard for the National Certification Examination. This was done to reflect how anesthesia today is more complex and requires practitioners to have greater knowledge and skills.[67] These new standards pertain only to CRNA's.

CRNAs are also compensated at a different level than nurses. Nurse Anesthesia is the highest paid nursing profession. Hospitals should be concerned about the satisfaction and engagement of CRNA's. Turnover of CRNAs could be costly to an institution.

CRNA Job Satisfaction Studies

There have been some studies focusing on CRNA job satisfaction. One of the first studies (Cline) looked at CRNA feelings of deprivation or resentments as related to their job satisfaction.[68] This study

uses Faye Crosby's Theory of Relative Deprivation to examine CRNA feelings of deprivation or resentment in their job. This theory explains that there are six psychological preconditions that impact an individual perception as it pertains to their job satisfaction. These six conditions are: wanting, comparison to others, deserving, past expectations, future expectations, and lack of self-blame. The results of this study showed that only the degree of autonomy was found to be significant in explaining the deprivations felt by CRNA's. Using multiple regression analysis, the authors found that deprivation was dramatically increased by psychological variables rather than in background variables. The psychological variables that were the most significant were "wanting" and "deserving".[54] Cline states that CRNA wants (wanting) and CRNA perceived entitlements (deserving) contribute to CRNA job satisfaction.

Since the new millennium there have been three studies measuring job satisfaction with CRNA's. Of the 3 studies, 1 study looked at job satisfaction of CRNA's in the military. Another looked at job satisfaction of CRNA's in West Virginia, and the third studied CRNA's job satisfaction, organizational commitment and turnover in CRNA's in Michigan. Below is a table summarizing the 3 studies.[69] [70] [71]

Table 8: Comparison of 3 CRNA Job Satisfaction Studies

Author	Crews	Cline	Chaaban
population	n=42 Army CRNA, return rate of 30%	n=102 WV CRNA's, return rate of 26.6%	N=162 Michigan CRNA's, 88 urban;35 rural. Return rate 14.7%
Purpose of study	Job satisfaction of Army CRNA's	Job satisfaction of WV CRNA's	Job satisfaction, organizational commitment and turnover of CRNA, urban vs. rural
methods	Email survey: IWS questionnaire	Mailed paper survey: IWS questionnaire	Mailed paper survey: IWS questionnaire, Organizational Commitment Questionnaire, Anticipated turnover scale
statistics	Chronbach Alpha of 6 satisfaction factors: Pay 0.85, professional status 0.68, interaction and cohesion 0.85, administration 0.72, tasks 0.63, overall score 0.85	Mean of Index of Work Scales: Professional status 17.7, autonomy 16.96, pay 15.67, institution 14.57, tasks 13.45, organizational policies 7.57.	t-test of Job satisfaction; urban (3.21), rural (3.41) $p<0.0001$

Crews T. Job Satisfaction of Active Duty Army CRNA's. *Mountain State University.* In press 2009.
Cline M. Certified Registered Nurse Anesthetist Job Satisfaction in West Virgina. *Mountain State University.* In press 2009.
Chaaban H. Job Satisfaction, Organizational Commitment and Turnover intent Among Nurse Anesthetists in Michigan. *Capella University.*In press 2006.

Crews found that there was high job satisfaction in CRNA's employed in the Army. However, the largest dissatisfaction reported was related to pay and reward. She also noted that 4.86 out of 5 Army CRNA's would choose to serve in the military again if they had to make that choice.[55] Cline found that pay, autonomy and interactions were rated high for CRNA job satisfaction. Professional status, task requirements and organizational policies were rated low in regards to CRNA employee job satisfaction.[56] Chaaban studied the differences between rural and urban CRNA job satisfaction. He found that rural

CRNA's were more committed to their organizations, they were also more satisfied than their urban counterparts, and that urban CRNA's are more likely to change jobs than rural CRNA's.[57]

Michigan CRNA Economy

Something that impacts both the rural and urban CRNAs is the Michigan economy. The job market in Michigan for CRNA's has vacillated with the economy. Since 2006, there has been a negative appreciation in the Michigan housing market.[59] Since that time experienced CRNAs have had difficulties finding full time employment. Students graduating from Michigan anesthesia schools have had to look for either part-time employment or jobs outside the state. Many Michigan CRNAs are afraid to change jobs. Fears of relocation and the inability to sell their home, has hampered some CRNAs from changing employers. According to Corelogic Negative Equity report in March 2012, Michigan had 34.7% of their homes underwater. They also reported that there was a 30.1% drop in the median home value and 6.5% of homes in foreclosure.[72] Employees can be dissatisfied at their job, but when economic factors, such as job security and housing are affected, employees are more willing to stay in a job where they are not satisfied.[38]

CRNA's like any other employee can experience job dissatisfaction and employee disengagement in the workplace. Employees that are not satisfied or engaged in their job can affect the bottom line of their institution not only because they are dissatisfied, but because they may leave their job. CRNA job dissatisfaction could also affect hospitals malpractice rates and patient and employee satisfaction scores. Additionally, productivity and cost containment could be affected. Unengaged CRNAs could have a higher utilization of expensive drugs, even when there is a better economical choice for that anesthetic. Also, CRNAs contribute to turnover times of the operating room and these times could be negatively impacted. Finally, CRNA excessive sick time usage and replacement of that individual can affect an anesthesia departments' bottom line.

Chapter III Methods

Tools

This study utilized a survey methodology. The literature was reviewed searching for appropriate pre-existing valid and reliable instruments. The use of such instruments in a different population can impact validity and reliability. Three instruments, the Index of Work Satisfaction (IWS), the Utrecht Work Engagement Scale (UWES) and the Anticipated Turnover Scale (ATS), were combined with demographic and open ended questions to form one survey. Doctorally prepared faculty, experience in survey research reviewed the selected instruments for face validity in light of the not-previously-studied population.

Approval and Survey Distribution

Once the surveys were approved by the faculty, the next step was getting approval from the IRB at the University of Michigan-Flint. Approval was also obtained from the three instrument developers, and the MANA Board of Directors. After everything was approved by the disciplines involved, an introductory email that contained a link to this survey was sent to the Michigan CRNA email data base. The link directed respondents to the University of Michigan-Flint Qualtric survey website where all three tools were downloaded into their data base. (This software program is commonly used by many universities for survey research.)

This survey was sent to all CRNA's who live and were employed in Michigan, and in good standing with the American Association of Nurse Anesthetists (AANA). The MANA association office receives the Michigan CRNA email data base from the AANA. There were approximately 1700 Michigan CRNAs with emails listed in this data base.

Prior to distribution of the survey, the study was publicized in both the Connector, an online Michigan CRNA newsletter, and at the 2012 MANA Fall conference. On December 4, 2012 the survey

was delivered by blast email to all MANA members. A reminder email was sent to the same data base on December 18, 2012. The survey remained open to all Michigan CRNAs until January 8, 2013.

Survey Data Collection and Statistics

Qualtrics software collected the data and calculated the minimum value, maximum value, mean, standard deviation, variance and total responses to each question. The data was then downloaded to SPSS Statistics Version 21. Analysis was performed in consultation with a biostatistician from the Center for Statistical Consult and Research (CSCAR) department at the University of Michigan. Additionally, each survey tool had its' own scoring manual. The instructions for each tool were followed closely and descriptions of the calculations for each tool are listed in Appendices C, D and E. The open ended question responses were divided into negative and positive responses and listed in Appendix F.

Chapter IV Results and Analysis

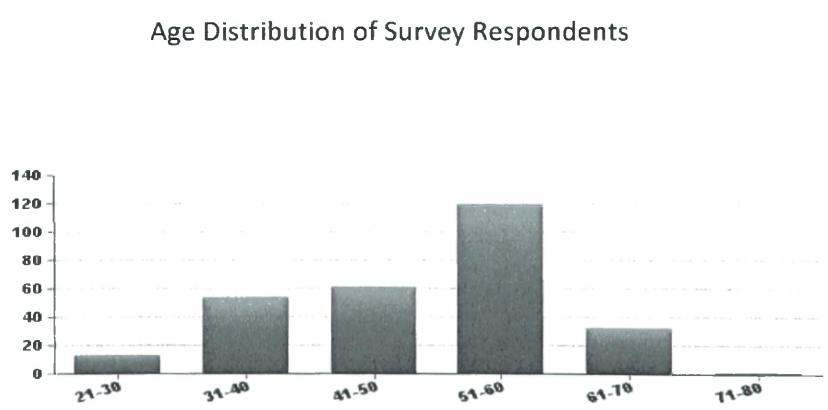
In this chapter the demographic data will be presented first followed by the data related to specific instruments. Demographic data is reported using descriptive statistics, such as counts, means and ranges. Data related to specific instruments is reported in according to directions by the authors of the specific instrument.

Survey Demographics

The 1700 Michigan CRNAs with email address on file were sent a blast email containing a link to the survey. Slightly more recipients (289) opened the survey and 280 recipients filled out and returned the survey. Not every respondent completed every question. Overall, the response rate of 16.5% (280/1700). Historically, between 12-13% of all CRNAs respond to blast emails sent out by MANA. These blast emails are usually related to electing new members for the MANA Board of Directors.

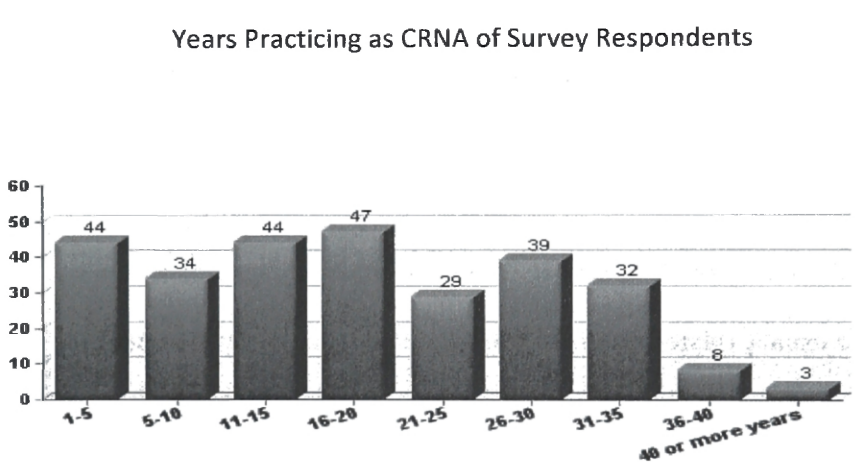
The mean ages of the respondents were 41-50 years, but 43% of the respondents were ages 51-60. Of those that responded 63% were female and 37% were male. Figure 4 below shows that more than 50% of the individuals taking the survey were over the age of 51.

Figure 4: Age Distribution



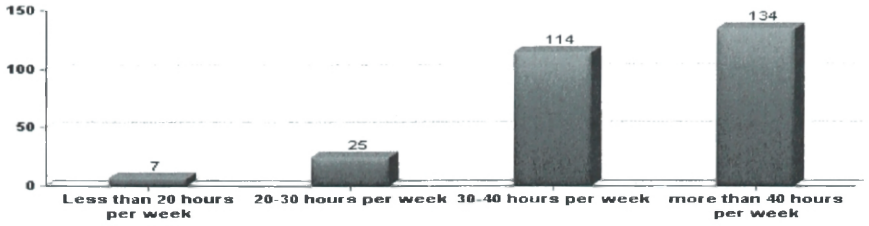
More females answered the survey, 63.6%, as compared to males, 36.4%. On average, the respondents had been employed at their current job from 6 to 10 years. One respondent had been employed at their same position for more than 40 years. Even though more than 50% of the respondents were over the age of 50, only 10% planned on retiring in the next five years. Figure 5 shows the distribution of years practiced by CRNAs.

Figure 5: Years Practicing as CRNA



CRNAs were asked," How many hours are you work per week?" Only 3% work less than 20 hours, 9% work 20-30 hours, 41% work 30-40 hours per week and 48% work more than 40 hours per week. Only a minority work what is considered part time per week. Nearly one half reported that they work greater than 40 hours a week or what is considered more than full time. Based on the employment model this may or may not be considered overtime.

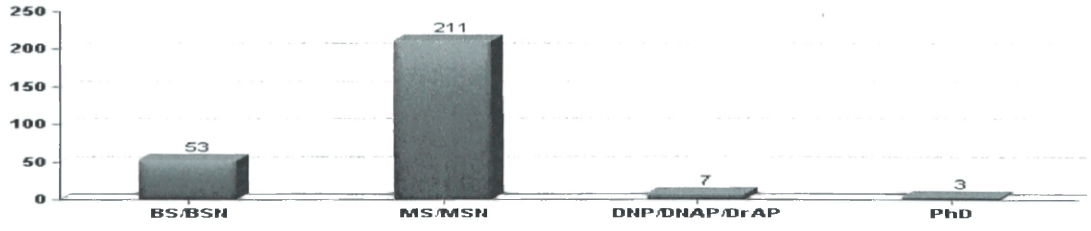
Figure 6: Hours Per Week Worked by Survey Respondents



There are changes within the profession with respect to the education level for entry-to-practice. These changes will mandate the clinical doctorate as the degree for entry into nurse anesthesia practice. In light of these changes data regarding the highest educational level of respondents was gathered. The highest percentage of respondents was MS/MSN at 77% and the lowest were the DNP/DNAP/DrAP at 3% and PhD at 1%. Michigan CRNAs have a slightly higher percentage at the master's level compared to national data. This may be reflective of the length of time Michigan CRNA educational programs have been offered at the graduate level.

Figure 7: Highest Educational Level

Highest Education Level of CRNA Survey Respondents

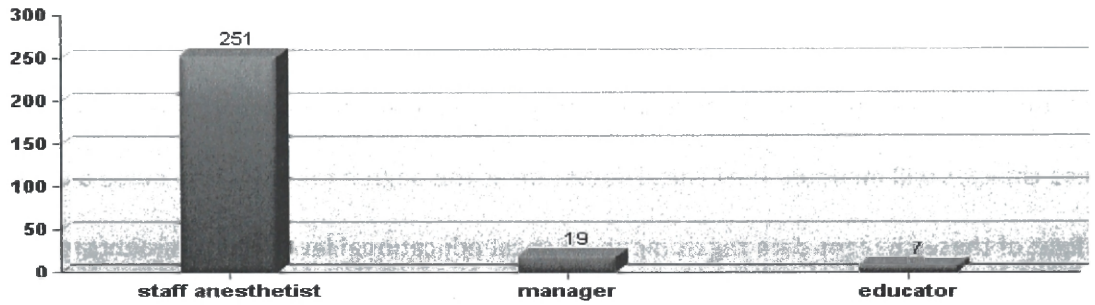


The next demographic question asked the respondent what was their position at work. The work place roles reported by respondents included staff anesthetist, manager and educator. Most

respondents, 90%, were employed as staff anesthetists. Only 3% were educators and 7 % were managers.

Figure 8: Employment of CRNAs

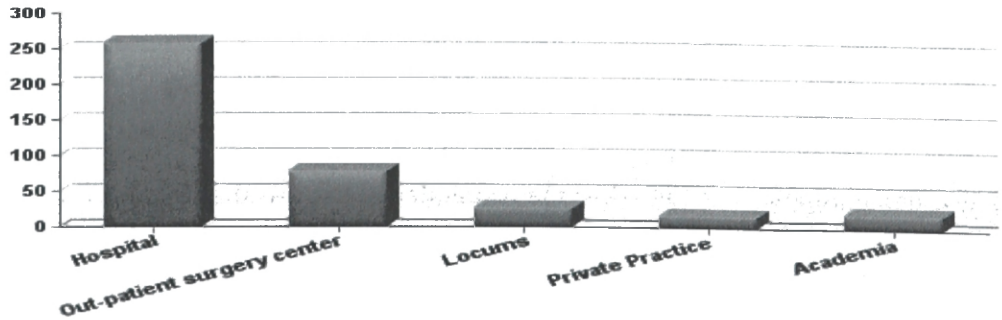
CRNA Employment of Survey Respondents



CRNAs practice in a variety of settings, including hospitals, outpatient surgery centers and physician offices. Most respondents worked at hospitals (93%), 28% worked at out-patient surgery centers, 27% were strictly locums, 17% worked in private practice settings and only 8% worked in academia. Hospitals are the largest employers of CRNAs, this could explain the large response rate from hospital employed CRNAs.

Figure 9: Locations of Practice

Locations of Practice for CRNA Survey Respondents



Comparison Survey Demographic Data to AANA Data

The following table compares demographic data from this survey to that published by the AANA. Demographic data from this survey was limited as compared to data available from the AANA. Sampling data from these two subsets can give an insight to characteristics of the whole population of CRNAs. The response rate, mean age, place of employment, type of practice and years of service were very similar between the AANA demographics and the demographic results of this survey.

Table 9: Survey Demographics

Survey Demographics vs. AANA Published Demographics

Members	1700 MANA members, 280 respondents, response rate 16.5%	35,000 AANA members, 5968 respondents, response rate 16.8%
Average Age	41-50 years	49.2 years
Employed	39% hospitals, 28% outpatient surgery, 27% Locums, 17% Private Practice, Academics 8%	Hospital 39%, Group 35%, Independent 12.2%, Owner 3%, Military 3%, Other setting 8%
Practice	91% Staff Anesthetist, 3% education, 7% administration	96% Staff Anesthetist, 2% education, 2% administration
Years of Practice	1-5 yrs 15%, 5-10 yrs 12%, 11-20 yrs 32%, 21-30 yrs 24%, >30 yrs 15%	<2yrs 7%, 2-5 yrs 20%, 6-10 yrs 15%, 11-20 yrs 23%, 21-30 yrs 20%, >30 yrs 15%

This completes the demographic data compiled from this survey. Next is data is related to specific instruments.

Results of the Index of Work Satisfaction Survey

The IWS is a two part measurement tool used to assess the level of satisfaction of nurses. It does this by measuring six identified components of satisfaction; pay autonomy, task requirements, organizational policies, professional status and interaction. There are four basic steps involved in scoring Part A of the IWS questionnaire. The first step computed the Component Weighting Coefficients; the

second step calculated the Component Scores and the third combined the Component Weighting Coefficients with the Component Scores and calculation of the Index of Work Satisfaction. The following table contains scores for Part A (Component Weighting Coefficient), scores for Part B (Component Scale Score, Component Mean Score), Component Adjusted Scores, Total Scale Score, Mean Scale Score and the IWS for the survey respondents. This table was reproduced using the IWS workbook IWS template and the data from this survey was transposed into this template.

Table 10: IWS Calculation for Michigan Job Satisfaction Survey

III. Calculating the IWS

TABLE 7: Calculating the IWS

Component	I. Component Weighting Coefficient (Part A)	II. Component Scale Score (Part B)	III. Component Mean Score (Part B)	IV. Component Adjusted Scores
Pay	3.34	26.54	4.42	14.76
Autonomy	3.60	36.23	6.04	21.74
Task Requirements	2.94	27.40	4.57	13.44
Organizational Policies	2.45	25.64	4.27	10.46
Professional status	3.31	40.14	6.69	22.14
Interaction*	3.34	47.78	4.79	16.00
Nurse-Nurse	———	24.69	4.94	———
Nurse-Physician	———	23.09	4.62	———
Total Scale Score: 203.73 **(range: 44-308)**		**Mean Scale Score:** 5.04 **(range: 1-7)**		**IWS:** 16.42 **12.0 (range: 0.9-37.1)**

When interpreting the scores there are two categories of numerical scores most commonly used to summarize the results of the IWS questionnaire. The first category includes scores that provide an estimate of the CRNAs total satisfaction. The second includes scores that represent an estimate of satisfaction with each of the separate components of satisfaction. Both of these categories have

weighted and unweighted scores. No matter which score was used, one of the most important issues related to the interpretation of the data is awareness of the context of any specific number. It was important to always consider the possible ranges of the values, rather than relying only on the absolute numerical score itself. Looking at where the value falls within the scale score range can help determine if a variable is more or less favorable in that category.

Data obtained from the IWS was also analyzed based on quartiles. The following chart shows the quartile results for each component in Part A and Part B of the IWS.

Table 11: Quartile integration

Quartiles for Interpreting Data Obtained from the IWS Questionnaire

Component of Part B	Component	Quartile
Pay	26.54	Third Quartile
Autonomy	36.23	Third Quartile
Task Requirements	27.40	Second Quartile
Organizational Policies	25.64	Second Quartile
Professional Status	40.14	Third Quartile
Interaction	47.78	Third Quartile
Nurse-to-Nurse	24.69	Third Quartile
Nurse-to-Physician	23.09	Third Quartile
Total Scale score	203.73	Third Quartile

Quartiles for Part A (Paired Comparisons)

Component Weighting Coefficients	3.16	Second Quartile
Component Adjusted Scores	16.42	Second Quartile
Index of Work Satisfaction	16.42	Second Quartile

Appendix C has a more detailed explanation and discussion of the calculations used to determine the results of this survey. All results were calculated using the IWS workbook and following the explicit instructions of the author.

Results of the Utrecht Work Engagement Scale

The next survey tool incorporated into this survey was the Utrecht Work Engagement Scale. The UWES measures three separate characteristics that affect work engagement. They are Vigor, Dedication and Absorption. Interpretation of the data was based on the calculations of means for all questions in each group, paired t-tests to determine the significance of the difference between the groups, and analysis of the data to determine the scoring percentages for all the variables.

The means of each variable were as follows; Vigor 4.87, Absorption 4.37, and Dedication 5.48. The total mean of the three variables was 4.91. The mean total score had a normal range between zero and six. The paired t-test for all three means were significant with $p<.001$. The UWES also used scoring percentages based on the means of each variable. The percentages were then summed to determine high, medium and low levels of each variable. The following chart shows the UWES scoring distribution in percentages for each variable and question.

Table 12: UWES Scoring Distribution in Percentages

	Vigor	Dedication	Absorption	Total Score
1	4.8	.7	7.2	12.7
2	10.1	1.8	16.5	28.4
3	22.8	13.3	26.2	62.3
4	29.3	21.6	24.3	75.2
5	22.5	30.0	18.8	75.8
6	8.5	15.1	4.5	28.1

The next step in scoring this tool is to rank each variable. Using percentages the variables are assigned either a high, medium or low engagement score. The following chart shows the percentages for each variable and how they rank.

Table 13: Scoring of Engagement

	High Engagement	Medium Engagement	Low Engagement
Vigor	31%	52.1%	14.9%
Dedication	45.1%	34.9%	25%
Absorption	23.3%	50.5%	23.7%

Results of Anticipated Turnover Scale

The final tool used in this survey estimates the degree to which anticipated turnover predicts actual turnover. After correcting the questions for negatively worded questions, the mean scores were summed and a total mean scored calculated. The table below shows the sum of the mean scores and a total mean score.

Table 14: Sum of Mean Scores

Sum of Scores

Question	Mean Scores	Standard Deviation
1	1.95	1.88
2	2.69	1.72
3	2.99	1.97
4	4.45	1.98
5	3.60	1.81
6	2.80	1.70
7	3.16	1.60
8	2.69	1.72
9	2.71	1.55
10	2.31	1.43

Mean score total 29.35/10=2.94 Mean Standard Deviation: 1.74

Retention is based on a continuum with 1 representing the CRNAs intent on staying in their current position. Whereas a score of 7 represents the CRNA desire to leave their current position. This concludes the results of all three separate valid tools used in this job satisfaction/employee engagement/job retention survey.

Open Ended Questions

The author of this survey also included open ended questions, hoping to elicit insight into the respondent's answers. At the end of the survey, the respondent was asked if they had any comments. There was a response rate to the opened ended questions of 17.5%, or 49 responses. The responses were divided into two categories, negative job satisfaction statements or positive job satisfaction statements. Fifteen statements were classified as positive and seventeen were classified as negative. Seventeen responses were statements about the survey or miscellaneous statements about or to the author of the survey. In Appendix F are the responses for the open ended question.

This chapter has reported the results of the IWS, UWES and ATS survey. Also the answers to the open ended questions were identified. The next chapter will discuss the results calculated using each independent survey scoring system and the implications of these results.

Chapter V Discussion

For many years employees have always wondered why their employer would spend thousands of dollars administering employee engagement surveys. To many workers it seems like a waste of money to survey the employees and then either ignore or make little changes with the information obtained from these surveys. The review of the literature has identified multiple reasons why employers should be concerned about employee engagement. In this era of health care reform, hospitals should be concerned about the savings that could be generated due to employing engaged individuals. Having an engaged hospital staff not only saves the hospital money, but increases revenue by increasing patient satisfaction. Measuring the engagement of nurses helps hospitals identify factors that promote nursing engagement, and can also identify factors that adversely affect their engagement. The focus of this survey was to identify drivers that affect employee engagement for CRNAs, measure job engagement and satisfaction, and determine if engagement or satisfaction impacted employee retention.

The literature review revealed there were multiple studies performed measuring job satisfaction not only with nurses, but also with CRNAs. To date, no studies have been performed measuring engagement of just CRNAs. Three separate tools were used for this survey, a job satisfaction, job engagement and a job retention survey. Job satisfaction and employee retention are two of the many factors related to engagement. These three tools were combined to form one survey. Using three separate tools also increased the validity of the study by triangulating the results.

Demographic Data Discussion

The population studied was Michigan CRNAs. There are approximately 1700 CRNAs currently practicing in Michigan. In the United Sates there are approximately 36,000 CRNAs. The demographics of CRNAs have been extensively studied by the AANA. The AANA demographic survey results are very

similar to the results obtained from this study. For example, individuals that answered the 2012 AANA annual recertification survey, 52% were age 50 and over. In the job satisfaction/engagement/retention survey, 50% of the respondents were over age 51. Demographics were similar in age, years as a CRNA, and CRNA places of employment. Now that the demographic data has been discussed, the individual results of the survey tools used will be discussed in detail.

Utrecht Work Engagement Scale

Employee engagement in the past has been extensively studied by businesses. It wasn't until the early 2000's that hospitals realized that employing engaged individuals, improved patient satisfaction, decreased malpractice claims and ultimately affected the institutions bottom line. The UWES was used in this survey to assess Michigan CRNA work engagement. This particular tool measures Vigor, Dedication and Absorption. Vigor is characterized by the employees having high levels of energy and mental resilience at work. The employee also has a willingness to invest their effort in their work and will persist in their work endeavor even if they face difficulties. Dedication refers to the employee being heavily involved in their work and they have the feeling of experiencing a sense of significance, enthusiasm, inspiration, pride, and even find their work challenging. In Absorption, the employee is characterized by being fully concentrated and engrossed in their work. Time passes quickly for these employees and they actually may have issues with detaching themselves from their work.

The resulting statistics show that CRNAs are engaged in their workplace. But to what degree are they engaged? Employee engagement is measured on a continuum. Burnout is at one end and engagement is at the other end. The continuum that was used by the survey developer was; very low, low, average, high and very high. The results of the UWES show that Michigan CRNAs have a high level of Vigor and Dedication and an average score on Absorption. It is not surprising that Michigan CRNA's have high levels of mental resilience and energy at work. Administering anesthesia requires the

provider to be mentally prepared, alert, and informed in anticipation to deal with immediate problems that arise during administration of an anesthetic. A CRNA in the comment section wrote, "Our pay is high because we are paid to be vigilant, constantly stressed and always prepared to react." CRNAs studied also experienced a high feeling of inspiration and pride, and found their work challenging. A respondent stated that, "their job is rewarding because it is an important contribution and challenging". However, CRNAs only have a score of average on Absorption. This was surprising. A question asked to all CRNA's that was part of the demographic section asked, "When you are at work, does time go by quickly?" Of those that responded, 80% of the CRNAs responded yes to this question. If employees are highly engaged they are concentrated and engrossed in their work. By definition of Absorption, time passes quickly for those individuals that are highly engaged, yet Michigan CRNAs measured average on Absorption.

Based on the UWES three variables that measure work engagement, Michigan CRNAs fell on the continuum between the average and high levels. However, they measure closer to high levels than average levels. Since there are no studies done in the United States using the UWES, these results were compared to previous studies done in other countries. The UWES has statistics based on 2,313 previous surveys. Michigan CRNAs, based on the mean calculated, scored higher in all three variables then foreign managers, physicians and nurses. Previous UWES studies have shown fairly large differences in engagement between countries. Previous UWES studies have shown there is a small relationship between results based on age and sex. Men tended to score higher, as do older individuals. However, in this survey more women answered the survey than men, but over 50% were over the age of fifty. Since both have small effects on results, it was doubtful that age and sex had as big an impact on engagement. Since this is the first time this survey has been used in the United States, this could be the reason for the higher engagement scores for CRNAs, than managers, physicians and nurses in other countries.

Index of Work Satisfaction

To assess the job satisfaction of Michigan CRNAs the IWS survey was utilized. The IWS is a two part measurement tool that is designed to assess nurses' level of satisfaction with their work by measuring six components of satisfaction. The six components are: Pay, Autonomy, Task Requirements, Organizational Policies, Professional Status, and Interaction. Part A of the tool weights each component based on its importance in providing satisfaction to the CRNAs surveyed. Part B measures satisfaction for each of the six components using attitude items. The end result of this survey is to provide a single number that measures work satisfaction number; however analysis of other data obtained by the IWS will provide drivers that affected job satisfaction of the respondents.

Appendix C contains all the calculations used to determine the IWS. The normal range for the IWS is 0.9-37.1. The Michigan CRNA IWS was 16.42. This falls within the bottom one half of the range. Previous studies of nurses have shown that the average IWS score was 12. A score of 12 was related to job dissatisfaction. Michigan CRNA's scored higher, but only slightly higher. Michigan CRNAs were more satisfied with their jobs than nurses, but were still considered dissatisfied in their jobs. When interpreting the IWS data, it was important to look at data that comprised the total IWS score. When looking at separate components such as, pay, autonomy, professional status, and interaction, all fell within the third quartile or between fifty and seventy five percent of the total maximum score. Task Requirement, Organizational Policies, Component Weighting Coefficients, Component Adjusted Scores and IWS all fell within the second quartile, or twenty five to fifty percent of the total maximum score. Looking at data based on quartiles allows a range of scores to be viewed as acceptable. Pay, autonomy, professional status and interaction all fell within an acceptable range or the third quartile.

The Mean Scale Score of the IWS was 5.04 based on a value of one to seven. A value of 7 represents very high levels of satisfaction. A score of 5.04 shows that there is job satisfaction, but it was

not at the highest level measured. The highest mean scores of the components were Professional status at 6.69 and Autonomy at 6.04. Interaction, Task Requirements, Pay and Organizational Policies were measured 4.27-4.79. Professional status and Autonomy were the two most important drivers of satisfaction in those surveyed. An IWS survey completed by Chaaban in 2006 found that Michigan CRNAs were more satisfied with the following work components, in order from greatest to least; autonomy, organizational policy, task requirements, interaction, pay and professional status. The following table summarizes the difference of the work components between the 2006 study and the 2012 study.

Table 15: Comparing work satisfaction components from most satisfying to least satisfying for 2006, 2012 and previous IWS.

Chaaban 2006 IWS Components Ranking	Carnahan 2012 IWS Components Ranking	Average Nursing IWS Components Ranking
Autonomy	Professional Status	Professional Status
Organizational Policies	Autonomy	Interactions
Task Requirements	Interactions	Autonomy
Interactions	Task Requirement	Task Requirement
Pay	Pay	Organizational Policy
Professional Status	Organizational Policy	Pay

Why the difference between the 2006 and 2012 survey? They both measured job satisfaction of CRNAs; however Chaaban compared urban to rural. CRNAs that work in rural areas are usually the only anesthesia provider for the hospital. Autonomy and Organizational Policies were important for those CRNAs that work independently. Professional Status, which is ranked first in the 2012 survey, ranked

last in the 2006 survey. Rural CRNAs have to find coverage to attend state meetings. Professional status was not an issue for them, because they were the only anesthesia provider to that area.

When comparing the satisfaction components of the 2012 survey and nursing side by side, the CRNA study was very similar to the nursing results. CRNAs rank Professional Status and Autonomy as the two highest components. In the open ended comments a CRNA made the following statement, "I enjoy my job very much. I like the variety of cases, the level of autonomy, and the repertoire with the MDAs." That statement represents the top three components given by the respondents. Historically, physicians and nurses typically list Professionalism and Autonomy as their top two components of job satisfaction.

Pay, Task Requirements, and Organizational Policies were the bottom three components. In many of the open ended questions CRNAs made negative comments about pay, their management and the job they were required to perform. Some individuals felt the pay was adequate, where others thought pay was low. One person stated, "We have not had a pay raise in 6 years, nor do I see any raise in the future because volumes are down because of a sluggish economy. The CRNAs at my hospital would be considered underpaid compared to the salary and benefits at surrounding hospitals." At the opposite end of the pay spectrum a CRNA stated, "We are extremely well paid, in fact the envy of many physicians." Even though Pay was considered one main three components that affected job dissatisfaction with CRNAs, it was in the third quartile and also considered an acceptable component contributing to job satisfaction. Then negative comments concerning pay, could be related to an urban hospital that cut the CRNA pay 4% in 2008. This institution has increased their pay 4% in the last four years; however their pay and benefits are below hospitals in the area that are comparable in size. Dr. Stamps, the author of the IWS, encourages researchers to look at not only the IWS score, but the components and how they affect the IWS score. There was some animosity among the CRNAs in

regards to Pay, for it is one of the three bottom components contributing to job dissatisfaction, yet it measures in the third quartile.

The following statement was a quote from a respondent that is related to the component of Organizational Policies, "I like the work I do as a CRNA. It is the chief CRNA management that is currently in place which is what makes the job miserable." Job Satisfaction, either high or low, has been linked to an institution's or a manager's policy and procedures. One of the strongest factors that can affect job satisfaction was a positive relationship with a manager. Also, if a component that affects CRNA satisfaction is measured as either high or low, it shows how that component reflects on the CRNAs professional personal experiences.

Michigan CRNAs were more satisfied in their jobs than nurses, but are measured in the second quartile, thus making them dissatisfied. Just like with nurses, CRNAs feeling about Professional Status, Autonomy and Interactions promote job satisfaction. However Task Requirements, Pay, and Organizational Policies have impacted negatively on job satisfaction with Michigan CRNAs.

Anticipated Turnover Scale

Now that the IWS and the UWES have been discussed, there is one last tool that needs some explanation. The final tool used in this survey was the ATS scale. This tool measures turnover in nursing. There were serious financial costs associated with employee turnover. Especially with those employees that were highly compensated. If hospitals can anticipate turnover before turnover occurs, this can prevent costly and unnecessary turnover.

After all questions were corrected for negativity, the mean of the sum of the scores was 2.94. Based on a continuum from one to seven, where one represents CRNAs not having the intent to leave their institution and seven represents CRNAs do have intent to leave their current position, Michigan

CRNAs rate low. This shows that despite their low job satisfaction rating, Michigan CRNAs do not intend to leave their current position.

In the demographics section of the questionnaire, two questions were asked about leaving their current position. Respondents were asked if they planned on retiring in the next five years. Only 19% planned on retiring in the next five years. This was a low number considering that over 50% of the respondents were over the age of fifty one. The respondents were also asked if they planned on changing positions in the next five years. Most responded "no" to this question, 13% planned on changing their place of employment in the next five years. It was hard to know if any of the 13% that planned on changing their place of employment was due to retirement. Three respondents (12.5%) wrote that they would be leaving their current place of employment. Of those three, two were retiring. The third person planned on leaving their job based on a new policy imposed on employees concerning mandatory flu shots.

Now that all the data has been reviewed and discussed, the three hypotheses formulated prior to survey selection can either be approved or disapproved. The results of the open ended questions will also be utilized for this process.

Accepting or Rejecting the Hypothesis

The final step in the discussion of the data is to address how the results either accept or reject the three hypotheses identified at the beginning of this research project. Does the data collected support or refute the hypothesis formulated?

Hypothesis 1: Michigan CRNA's are satisfied with their current employment.

Looking at the IWS score alone (16.4), CRNA's are considered unsatisfied in the workplace. However, in this sample, CRNA's were more satisfied than the nurses that have been studied previously. The

average IWS reported for nursing was 12. The IWS allows the researcher to look at multiple variables that impact job satisfaction. When looking at the mean component score (the average for CRNAs is five out of seven), Professional Status and Autonomy promote higher levels of CRNA job satisfaction. Organizational Policy and Pay promote lower levels of CRNA job satisfaction. Another variable that can be interpreted using the IWS, are quartiles. Components in the first or second quartile signify there were low levels of job satisfaction. Components measured in the third or fourth quartile promote improve job satisfaction. Pay, Autonomy, Professional Status and Interactions all placed in the third quartile. These components all help increase job satisfaction in Michigan CRNAs. Task Requirements and Organizational Policies were viewed as decreasing job satisfaction in the CRNAs. The IWS measured the second quartile, suggesting that Michigan CRNA's are not satisfied in their jobs.

Hypothesis 2: Michigan CRNAs are engaged in their current workplace.

CRNA's were engaged in their workplace, but to what degree? The UWES measured CRNA Vigor at high, CRNA Dedication at high, and CRNA Absorption at average. Comparing UWES components using a paired t-test, showed significant differences between the responses, with $p<.001$. To determine the degree of employee engagement, the percentage that the CRNAs responded to a question can address this issue. Over 50% of the CRNAs were moderately engaged in relation to Vigor and Dedication, and 34% were moderately engaged in relation to Absorption. Michigan CRNAs were engaged in with their work, but only moderately engaged.

Hypothesis 3: Michigan CRNAs do not plan to change employment.

Based on the ATS, Michigan CRNAs do not have plans to leave their present place of employment. Using a scale of one to seven, CRNAs measured 2.94, or between disagree to slightly disagree on the Likert scale.

In summary, the data shows that CRNAs are not satisfied in their current positions. Despite not being satisfied, CRNAs are engaged in the workplace. Obviously there are other separate factors that this survey did not identify that promoted CRNA engagement. It is surprising that CRNA were engaged, but not satisfied. Despite CRNA job dissatisfaction, they had no intention of leaving their current position.

Chapter VI Conclusion

CRNAs in Michigan had more job satisfaction than nurses, but still were considered dissatisfied in the workplace. Drivers that help improve CRNA job satisfaction based on the results of the IWS survey are; Professionalism, Autonomy and Interactions. Drivers that promote job dissatisfaction are Task Requirements, Pay and Organizational Policies. Even though CRNAs were dissatisfied with their employment, they were engaged in the workplace. Despite CRNAs being engaged, they were not classified as being highly engaged. Even though they are dissatisfied with their jobs, they do not intend on leaving their current workplace.

Employees that experience job satisfaction can either be engaged or not engaged in the workplace. Employees can experience job satisfaction and not possess that extra commitment to their institution. They are satisfied to go to work, do their job and receive a paycheck. Usually when there is job dissatisfaction, the employee is not engaged or disengaged in the workplace. The results of this survey show just the opposite. However, when you look at the continuum of engagement, the CRNAs were not highly engaged. They scored between average and high. Also, they scored higher than nurses in job satisfaction, but placed just below the fifth percentile. Even though the CRNAs were not highly engaged or experienced job satisfaction, they did not plan on leaving their current job. This represents both good and bad consequences for employers. Hospitals don't need to worry about turnover expenditures currently. To date, full time CRNA jobs are in short supply in Michigan. Even locums work has diminished in the last few years. Employees unhappy in the workplace won't change jobs in a tight job market unless they have other employment opportunities available. Historically, if there was limited employment opportunities job turnover is low. However, when the economy improves, this could be the stimulus to create new job opportunities for CRNAs. Despite the economy, hospitals should be concerned about the engagement and job satisfaction of employees to prevent turnover. This would

prevent employee dissatisfaction and distrust. An employee that is satisfied and engaged during economic down swing, will stay with that institution when the economy improves.

In the near future, changes in health care policy could impose financial constraints on health care providers. Hospitals will be experiencing the impact of the Patient and Protection and Affordability Care Act (PPACA). Even though some changes have been made, the major impact of the PPACA will occur in 2014. Recently, the State of Michigan has enacted new tax laws regarding health care, and recently became a right to work state, both which could impact the financial status of hospitals. Even though the U. S. economy has improved, European economics and national security issues could impact this improving economy. Having multiple items that could impact the financial stability of health care institutions, shouldn't hospitals do everything possible to improve factors they can control, like employee engagement and job satisfaction? Many of the issues related to job satisfaction and engagement would not burden institutions financially. Many hospitals already have engagement surveys costs as a line item in their budgets.

Gallup states that management is responsible for the engagement of their employees. Some hospitals measure employee engagement but then do nothing with the results. They do this because of the potential costs involved. Employees look to the engagement survey as a way to voice their opinion to management. When the results are not shared with the employees, it can be one factor that promotes job dissatisfaction. This is where transparency is important. If finances are not available to improve conditions, rather than ignoring the results management needs to address the issue and explain why it cannot be remedied in the immediate future. In this study, CRNAs measured Pay as a component leading to job dissatisfaction. Currently, many hospitals have wage freezes. Employees' wages have been frozen, but no one in management has told them why. Management assumes that employees understand the reason, when in reality the employee doesn't. This is where transparency is so

important. An employee hearing from the employer why they need to make cuts or freeze wages makes the employee understand the rationale behind the decision. Too many times decisions are made behind closed doors. The decision is mandated on the employee without any explanation and this leads to low job dissatisfaction and employee un-engagement.

This survey measured that Organizational Policies is the component that leads to the greatest job dissatisfaction with CRNAs in Michigan; this does suggest that department and institution policy promotes job dissatisfaction in these CRNAs. Some of this dissatisfaction could be related to recent legislation to remove physician supervision of CRNAs. There are very few CRNA only practices currently in Michigan. Most anesthesia departments are managed by anesthesiologists. Introduction of this current legislation can impact the politics of the department. This could be a reason why Organizational Policies contributes to CRNA job dissatisfaction.

Task Requirements also led to low levels of job dissatisfaction. CRNAs are now responsible for more than just providing the anesthesia. Recent changes in Medicare have made the CRNA responsible for not only making sure the antibiotic is ordered, but that the correct antibiotic is ordered and is given within one hour of incision. CRNAs are responsible for all of the following; preoperative orders, checklists, transportation to the operating room or offsite location, positioning of the patient, the intraoperative patient verification, induction, maintenance and emergence of anesthesia, postoperative orders, report to multiple members of the post anesthesia care team, and postoperative analgesia. Over the years, the responsibilities and tasks of the CRNA have increased, all without affecting the schedule of the operating room. Time and production pressures due to these increased responsibilities could result in job dissatisfaction.

Knowing that Professionalism, Autonomy and Interaction helps improve job satisfaction, hospitals can use this to improve job satisfaction and employee engagement. Allow CRNAs to become

part of the department or institution. Allow them access to the leaders in the institution. Encourage participation on hospital committees. To promote Professionalism and Autonomy hospitals should encourage anesthesia department heads to allow CRNAs to work within their full scope of practice.

Only time will tell if CRNA engagement and job satisfaction will cost institutions financially. If the economy and the job market improve, CRNAs would then have the opportunity to find a job that could promote their engagement and improve their satisfaction.

Limitations of the Study

This survey was sent to all email addresses listed in the Michigan Association of Nurse Anesthetists Data base. It is possible that all CRNAs did not receive the introductory letter with the survey link. Some of the emails could have been sent to individuals' spam accounts. This survey also doesn't address issues that were currently affecting Michigan CRNAs, such as the recent introduction of legislation to eliminate CRNA supervision, or changes in health care policy due to the implementation of the Patient and Protection and Affordability Care Act.

Also, the UWES has only been performed on employees in foreign countries, and never used in the United States. Economics and working conditions can be different in the United States as compared to foreign countries, thus affecting employee engagement. Also, CRNA employee engagement has not been measured using this tool. Nurses and physicians have been surveyed to measure their engagement, but not nurse anesthetists.

One final limitation to the study is the age of those that responded. Over 50% were over the age of 51. The literature review noted that both job satisfaction and employee engagement are elevated in older employees. This could have influenced the results of this study.

Recommendations for Future Studies

Employee engagement is a fairly new concept as compared to employee job satisfaction. No other study has been done on CRNAs and employee engagement. More studies need to be completed to measure the not only the job satisfaction but employee engagement of CRNAs, and identify specific drivers of CRNA employee engagement.

Acknowledgements

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Appendix A

Dear Michigan CRNA,

Let me introduce myself, my name is Donna Carnahan. I have been a practicing CRNA in Michigan since 1995. I am currently a DrAP student at the University of Michigan-Flint. I have finished most of my didactic courses, and am now working on my capstone project. I am asking for your assistance with this project. You are receiving this survey because you are a member of MANA.

My project is entitled; Drivers of job satisfaction/employee engagement and turnover in Michigan CRNA's. The goal of this study is to gain information about job satisfaction and turnover in relation to Michigan CRNA's

This research poses no risk or liability to you. All information will be compiled so that no association can made between you and your opinions. All survey information will remain anonymous and individual information will be kept confidential. Your involvement in this project is completely voluntary. You may withdraw from the survey at any point. You will be asked to answer questions that are multiple-choice and open ended. Please offer any information that you feel may help improve the satisfaction/engagement and turnover of CRNA's in Michigan. To participate in this survey, please click on the link below.

Link to survey here

Thank you for your participation,

Donna Carnahan CRNA, MS

Doctoral Student

University of Michigan-Flint

Demographic Survey

Instructions: Please answer the following questions about yourself.

1. Age_____
2. Gender: Female_____ Male_____
3. Highest degree of education: BS/BSN____ MS/MSN____ DNP/DNAP/DrAP_____ PhD____
4. Practice site (indicate all that apply): Hospital_____ Out-patient surgery_____ Locums_____

   Private practice_____ Academia_____
5. Number of years at current place of employment_____
6. Number of years practicing as CRNA_____
7. Hours employed per week_____
8. Current position: staff anesthetist_____ manager_____ educator_____
9. Do you plan on retiring in the next 5 years? Yes_____ No_____
10. Do you plan on changing employment in the next 5 years? Yes_____ No_____
11. If someone asked if you were happy at work, how would you respond? Yes_____ No_____
12. When you are at work, does time seem to pass quickly? Yes_____ No_____
13. Do you look forward to coming to work every day? Yes_____ No_____
14. Do you find work meaningful and challenging? Yes_____ No_____
15. Have you called in sick to work in the last year, when you really were not sick? Yes___ No___

IWS Survey

The Index of Work Satisfaction Questionnaire ©

Part A (Paired Comparisons)

Listed and briefly defined below are six terms or factors that are involved in how people feel about their work situation. Each factor has something to do with "work satisfaction". We are interested in determining which of these is **most important** to you in relation to the others.

Please carefully read the definitions for each factor as given below:

- ***Pay*** -- dollar remuneration and fringe benefits received for work done
- ***Autonomy*** -- amount of job related independence, initiative, and freedom, either permitted or required in daily work activities.
- ***Task Requirements*** -- tasks or activities that must be done as a regular part of the job
- ***Organizational Policies*** -- management policies and procedures put forward by the hospital and nursing administration of this hospital
- ***Interaction*** -- opportunities presented for both formal and informal social and professional contact during working hours
- ***Professional Status*** -- overall importance or significance felt about your job, both in your view and in the view of others

Instructions: These factors are presented in pairs on the next page. A total of 15 pairs are presented: this is every set of combinations. No pair is repeated or reversed. For each pair of terms, decide which one is *more important* for your job satisfaction or morale, and check the appropriate box. For example, if you feel that Pay (as defined above) is more important than Autonomy (as defined above), check the box for Pay.

It will be difficult for you to make choices in some cases. However, please do try to select the factor, which is more important to you. Please make an effort to answer every item; do not go back to change any of your answers.

Part A (Paired Comparisons, Continued)

Please choose the one member of the pair which is *most important* to you.

1.	☐	Professional Status	or	☐ Organizational Policies
2.	☐	Pay Requirements	or	☐ Task Requirements
3.	☐	Organizational Policies	or	☐ Interaction
4.	☐	Task Requirements	or	☐ Organizational Policies
5.	☐	Professional Status	or	☐ Task Requirements
6.	☐	Pay	or	☐ Autonomy
7.	☐	Professional Status	or	☐ Interaction
8.	☐	Professional Status	or	☐ Autonomy
9.	☐	Interaction	or	☐ Task Requirements
10.	☐	Interaction	or	☐ Pay
11.	☐	Autonomy	or	☐ Task Requirements
12.	☐	Organizational Policies	or	☐ Autonomy
13.	☐	Pay	or	☐ Professional Status
14.	☐	Interaction	or	☐ Autonomy
15.	☐	Organizational Policies	or	☐ Pay

Part B (Attitude Questionnaire)

The following items represent statements about how satisfied you are with your current nursing job. Please respond to each item. It may be very difficult to fit your responses into the seven categories; in that case, select the category that *comes closest* to your response to the statement. It is very important that you give your *honest* opinion. Please do not go back and change any of your answers.

Instructions: Please circle the number that most closely indicates how you feel about each statement. The *left* set of numbers indicates degrees of *agreement*. The *right* set of numbers indicates degrees of *disagreement*. For example, if you strongly agree with the first item, circle 1; if you agree with this item, circle 2; if you moderately agree with the first statement, circle 3. The middle response (4) is reserved for feeling neutral or undecided. Please use it as little as possible. If you moderately disagree with this first item, you should circle 5; to disagree, circle 6; and to strongly disagree, circle 7.

Part B (Attitude Questionnaire, Continued)

Remember: The more strongly you feel about the statement, the further from the center you should circle, with agreement to the left and disagreement to the right. Use 4 for neutral or undecided if needed, but please try to use this number as little as possible.

		Agree						Disagree
1.	My present salary is satisfactory.	1	2	3	4	5	6	7
2.	Nursing is not widely recognized as being an important profession.	1	2	3	4	5	6	7
3.	The nursing personnel on my service pitch in and help one another out when things get in a rush.	1	2	3	4	5	6	7
4.	There is too much clerical and "paperwork" required of nursing personnel in this hospital.	1	2	3	4	5	6	7
5.	The nursing staff has sufficient control over scheduling their own shifts in my hospital.	1	2	3	4	5	6	7
6.	Physicians in general cooperate with nursing staff on my unit.	1	2	3	4	5	6	7
7.	I feel that I am supervised more closely than is necessary.	1	2	3	4	5	6	7
8.	It is my impression that a lot of nursing personnel at this hospital are dissatisfied with their pay.	1	2	3	4	5	6	7
9.	Most people appreciate the importance of nursing care to hospital patients.	1	2	3	4	5	6	7
10.	It is hard for new nurses to feel 'at home' in my unit.	1	2	3	4	5	6	7
11.	There is no doubt whatever in my mind that what I do on my job is really important.	1	2	3	4	5	6	7
12.	There is a great gap between the administration of this hospital and the daily problems of the nursing service.	1	2	3	4	5	6	7
13.	I feel I have sufficient input into the program of care for each of my patients.	1	2	3	4	5	6	7
14.	Considering what is expected of nursing service personnel at this hospital, the pay we get is reasonable.	1	2	3	4	5	6	7
15.	I think I could do a better job if I did not have so much to do all the time.	1	2	3	4	5	6	7
16.	There is a good deal of teamwork and cooperation between various levels of nursing personnel on my service.	1	2	3	4	5	6	7

Part B (Attitude Questionnaire, Continued)

Remember: The more strongly you feel about the statement; the further from the center you should circle, with agreement to the left and disagreement to the right. Use 4 for neutral or undecided if needed, but please try to use this number as little as possible.

		Agree						Disagree
17.	I have too much responsibility and not enough authority.	1	2	3	4	5	6	7
18.	There are not enough opportunities for advancement of nursing personnel at this hospital.	1	2	3	4	5	6	7
19.	There is a lot of teamwork between nurses and doctors on my own unit.	1	2	3	4	5	6	7
20.	On my service, my supervisors make all the decisions. I have little direct control over my own work.	1	2	3	4	5	6	7
21.	The present rate of increase in pay for nursing service personnel at this hospital is not satisfactory.	1	2	3	4	5	6	7
22.	I am satisfied with the types of activities that I do on my job.	1	2	3	4	5	6	7
23.	The nursing personnel on my service are not as friendly and outgoing as I would like.	1	2	3	4	5	6	7
24.	I have plenty of time and opportunity to discuss patient care problems with other nursing service personnel.	1	2	3	4	5	6	7
25.	There is ample opportunity for nursing staff to participate in the administrative decision-making process.	1	2	3	4	5	6	7
26.	A great deal of independence is permitted, if not required, of me.	1	2	3	4	5	6	7
27.	What I do on my job does not add up to anything really significant.	1	2	3	4	5	6	7
28.	There is a lot of "rank consciousness" on my unit: nurses seldom mingle with those with less experience or different types of educational preparation.	1	2	3	4	5	6	7
29.	I have sufficient time for direct patient care.	1	2	3	4	5	6	7
30.	I am sometimes frustrated because all of my activities seem programmed for me.	1	2	3	4	5	6	7
31.	I am sometimes required to do things on my job that are against my better professional nursing judgment.	1	2	3	4	5	6	7

Part B (Attitude Questionnaire, Continued)

Remember: The more strongly you feel about the statement, the further from the center you should circle, with agreement to the left and disagreement to the right. Use 4 for neutral or undecided if needed, but please try to use this number as little as possible.

		Agree						Disagree
32.	From what I hear about nursing service personnel at other hospitals, we at this hospital are being fairly paid.	1	2	3	4	5	6	7
33.	Administrative decisions at this hospital interfere too much with patient care.	1	2	3	4	5	6	7
34.	It makes me proud to talk to other people about what I do on my job.	1	2	3	4	5	6	7
35.	I wish the physicians here would show more respect for the skill and knowledge of the nursing staff.	1	2	3	4	5	6	7
36.	I could deliver much better care if I had more time with each patient.	1	2	3	4	5	6	7
37.	Physicians at this hospital generally understand and appreciate what the nursing staff does.	1	2	3	4	5	6	7
38.	If I had the decision to make all over again, I would still go into nursing.	1	2	3	4	5	6	7
39.	The physicians at this hospital look down too much on the nursing staff.	1	2	3	4	5	6	7
40.	I have all the voice in planning policies and procedures for this hospital and my unit that I want	1	2	3	4	5	6	7
41.	My particular job really doesn't require much skill or "know-how".	1	2	3	4	5	6	7
42.	The nursing administrators generally consult with the staff on daily problems and procedures.	1	2	3	4	5	6	7
43.	I have the freedom in my work to make important decisions as I see fit, and can count on my supervisors to back me up.	1	2	3	4	5	6	7
44.	An upgrading of pay schedules for nursing personnel is needed at this hospital.	1	2	3	4	5	6	7

ATS Survey

Response Options

AS	=	Agree Strongly
MA	=	Moderately Agree
SA	=	Slightly Agree
U	=	Uncertain
SD	=	Slightly Disagree
MD	=	Moderately Disagree
DS	=	Disagree Strongly

Directions: For each item below, circle the appropriate response. Be sure to use the full range of responses (Agree Strongly to Disagree Strongly).

Scoring Key	Options	Item
(-)	AS MA SA U SD MD DS	1. I plan to stay in my position awhile.
(+)	AS MA SA U SD MD DS	2. I am quite sure I will leave my position in the foreseeable future.
(-)	AS MA SA U SD MD DS	3. Deciding to stay or leave my position is not a critical issue for me at this point in time.
(+)	AS MA SA U SD MD DS	4. I know whether or not I'll be leaving this agency within a short time.
(+)	AS MA SA U SD MD DS	5. If I got another job offer tomorrow, I would give it serious consideration.
(-)	AS MA SA U SD MD DS	6. I have no intentions of leaving my present position.
(+)	AS MA SA U SD MD DS	7. I've been in my position about as long as I want to.
(-)	AS MA SA U SD MD DS	8. I am certain I will be staying here awhile.
(-)	AS MA SA U SD MD DS	9. I don't have any specific idea how much longer I will stay.
(-)	AS MA SA U SD MD DS	10. I plan to hang on to this job awhile.
(+)	AS MA SA U SD MD DS	11. There are big doubts in my mind as to whether or not I will really stay in this agency.
(+)	AS MA SA U SD MD DS	12. I plan to leave this position shortly.

INSTRUCTIONS FOR SCORING SCALES AND SUBSCALES
SCALES WITHOUT SUBSCALES

1. GIVE EACH ITEM A SCORE.

Use the + and - key provided. For each item, score it according to whether it is positive or negative. For example, on a 5-point scale, for + items, SA is scored 5 and SD is scored 1. Conversely, for a negative item on that same 5-point scale, an item response of SA is scored 1 and SD is scored 5.

2. COMPUTE THE SCORES.
The score is the simple sum of all of the items in the scale divided by the number of items in the total scale.

Work and Well-being Survey (UWES)

English version

Work & Well-being Survey (UWES) ©

The following 17 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, cross the '0' (zero) in the space after the statement. If you have had this feeling, indicate how often you feel it by crossing the number (from 1 to 6) that best describes how frequently you feel that way.

	Almost never	Rarely	Sometimes	Often	Very often	Always
0	1	2	3	4	5	6
Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

1. _____ At my work, I feel bursting with energy* *(VI1)*
2. _____ I find the work that I do full of meaning and purpose *(DE1)*
3. _____ Time flies when I'm working *(AB1)*
4. _____ At my job, I feel strong and vigorous *(VI2)**
5. _____ I am enthusiastic about my job *(DE2)**
6. _____ When I am working, I forget everything else around me *(AB2)*
7. _____ My job inspires me *(DE3)**
8. _____ When I get up in the morning, I feel like going to work *(VI3)**
9. _____ I feel happy when I am working intensely *(AB3)**
10. _____ I am proud on the work that I do *(DE4)**
11. _____ I am immersed in my work *(AB4)**
12. _____ I can continue working for very long periods at a time *(VI4)*
13. _____ To me, my job is challenging *(DE5)*
14. _____ I get carried away when I'm working *(AB5)**
15. _____ At my job, I am very resilient, mentally *(VI5)*
16. _____ It is difficult to detach myself from my job *(AB6)*
17. _____ At my work I always persevere, even when things do not go well *(VI6)*

* Shortened version (UWES-9). VI= vigor; DE = dedication; AB = absorption

Appendix B

August 15, 2012

Dear Dr. Stamps,

I am interested in using your Index of Work Satisfaction Survey. I am pursuing a Doctorate in Anesthesia Practice at the University of Michigan-Flint. My topic is Employee Engagement/Job Satisfaction and Job Retention of Certified Registered Nurse Anesthetists in Michigan. Last month I purchased your book Nurses and Work Satisfaction: An Index of Measurement. I am about half way through the book, and have decided that your survey would work perfectly for my capstone project. I am currently writing my proposal for the IRB, and am writing you to ask for your permission to use the IWS survey in my study.

I plan on emailing your survey to all 1700 CRNA's in the state of Michigan, using Qualtric online survey software. The Michigan Association of Nurse Anesthetists management office has agreed to send out a blast email to all CRNA's. This email will contain a link to the University of Michigan-Flint's Qualtrics online survey, where I plan to have the IWS downloaded.

Thank you for your consideration. I hope to hear from you soon. If you need any further information about my study, please feel free to contact me.

Sincerely,

Donna Carnahan CRNA, MS

1969 Stonebridge Way

Canton, Michigan 48188

734-495-0628 (H), 734-891-6856 (C)

dcarnahn@umflint.edu

Donna Carnahan
Canton, Michigan

Dear Ms. Carnahan:

I appreciate receiving your request for permission to use the Index of Work Satisfaction (IWS) in your doctoral research. I misplaced your letter, so I decided to email this response to you. I understand from your letter that you have and are reading the second edition of my book, and will be using that version of the IWS. I will use this opportunity to give you some general information about the IWS and the services available that support its use.

The IWS questionnaire itself is a copyrighted measurement tool, with the copyright held by myself and Market Street Research, Inc., a full-service marketing research and evaluation firm located in Northampton, Massachusetts. If you wish to use the IWS questionnaire, a fee of $50.00 payable directly to Market Street Research covers permission to use the questionnaire, a print-ready hard copy formatted for use in your study, and an IBM-compatible floppy diskette which you can use in the event you wish to add questions of interest to your particular area of research. Other services available from Market Street Research include:

- A step-by step instruction manual for scoring the IWS
- Data entry services and scoring assistance
- Technical assistance in modifying or expanding the questionnaire
- Technical assistance in study designs

I have enclosed a complete description of these services as well as a price list. If you do decide to collect data, you will need the scoring manual unless you would like for Market Street Research to do the scoring for you. If you have any questions about any of these services, please feel free to call either myself or Market Street Research.

I would very much appreciate hearing about your results, as I am keeping a file of the types of research for which people are using the IWS.

Good luck with your study and feel free to contact me with any additional information.

Sincerely,

Paula Stamps, Ph.D.
Department of Public Health
University of Massachusetts
Phone: (413) 545-6880
Fax: (413) 545-6536
Email: stamps@schoolph.umass.edu

Appendix C

Index of Work Satisfaction

The IWS is a two part measurement tool used to assess the level of satisfaction of nurses. It does this by measuring six components of satisfaction: pay, autonomy, task requirements, organizational policies, professional status, and interaction. The components of this tool were designated as a result of interviews with nurses, an extensive literature review and 10 years of statistical testing of both reliability and validity. A unique feature of the IWS is that it weights each component based on its importance in providing nursing satisfaction to those that were surveyed. It accomplishes this component weight by using a paired-comparisons technique. Also, the IWS measures satisfaction of the nurses for each of the six components by using a group of attitude items. Each of these attitude items has met statistical criteria for inclusion during the development of this scale. A second subsection of the IWS is the two subscales measuring nurse-nurse and nurse-physician interactions.

Measurement of these two sections of the IWS generates a single score. To create this score the six components scores are multiplied by their corresponding weighting coefficients. The resulting weighted component scores are then added to produce a single number, which is the Index of Work Satisfaction. This number is the total index that represents both the relative importance of components and the nurse's current level of satisfaction. Scoring of the IWS was done by hand using the Scoring Workbook for the Index of Work satisfaction.

There are four basic steps involved in scoring Part A of the IWS questionnaire. The first step computed the Component Weighting Coefficients; the second step calculated the Component Scores and the third combined the Component Weighting Coefficients with the Component Scores and calculation of the Index of Work Satisfaction.

In the first step, the component weighting coefficients are determined. This measured the level of importance of each of the components to the nurse respondent. To do this, the six components of satisfaction are paired with one other component. The CRNA is then asked which component is more important to them. A frequency matrix is then constructed. This matrix is a table that lists the number of times each component was chosen as more important than the other variable. It is important to note that the columns show the most favored choices and the row are the least favored choices. Also, if you add each pair of components, the two frequencies add up to the total number of questionnaire respondents. This ensures that each pair of components is adjusted to the exact number of respondents, thus not skewing the results.

Next, the workbook instructs the surveyor to construct a Proportion Matrix. This matrix calculates the percentage that each frequency represents of the entire sample. The value is displayed in a percentage. Each pair of components will add up to 100%. Looking at the Proportion Matrix in Appendix C it shows that 54% of CRNA's find autonomy more important than pay.

The third step in calculating the Index of Work Satisfaction is to calculate the weights for each component on a normal distribution by using the table of Normal Deviates Z provided in the scoring workbook. This converts the percentage of each component from the Proportion matrix to a z-value.

These z-values are then calculated to become the component weighting coefficient, or the fourth step in the IWS calculation. To do this calculation, the mean value of each column is divided by the sum of five, which is the number of comparisons being made. This value produced by the use of the Z-table provided, incorporates a distribution of all possible scores. The values of the Component Weighting Coefficient range from 2.45-3.60. The higher the Component Weighting Coefficient, the more important that component is to the CRNA being surveyed.

Part B of the IWS measures the satisfaction of Michigan CRNAs utilizing a series of attitude statements about each component. Each question uses a 7-point Likert, scale ranging from strongly agree to strongly disagree. To avoid any response bias due to positively worded questions, this section of the survey had one half of the questions worded positively and the other half phrased negatively. The negatively worded statements did not need to be manipulated for scoring. On the other hand, the positively worded statements were reversed from what was in the questionnaire. There are three steps used to score the Attitude Scale of Part B.

The first step involves computing Component Scores of the Part B section of the IWS. All of the questions asked in this section of the survey were assigned to one of the six components and was either negatively or positively worded. All items that were answered strongly agreed or strongly disagreed were given the maximum number of points. In Appendix C are the tables used in calculating the Component Scores for the six individual components. Empty worksheet tables were taken directly out of the IWS Scoring Workbook for the purpose of calculating the CRNA Component Score for Part B of the IWS.

To determine this score, first the positively worded questions were reversed. Then the response for each question was multiplied the number of CRNA's that responded to each question. Some questions were skipped by the respondents, so not all questions had the same number of respondents. Then the sum of the totals for all questions that pertained to a certain component was added together. The mean score for each component is then calculated by dividing the Component Score by the number of items measuring the component. The range of the mean score is from 1 to 7. The following table identifies the component, the number of items and the number of questions worded positively and negatively.

Table 1: Positively and Negatively Questions

Component	Number of Items	Negatively worded questions	Positively worded questions
Pay	6	8,21,44	1,14,32
Professional Status	7	2,27,41	9,11,34,38
Autonomy	8	7,17,20,30,31	13,26,43
Organizational Policies	7	12,18,33	5,25,40,42
Task Requirements	6	4,15,36	22,24,29
Interaction	10	10,23,28,35,39	3,6,16,19,37
Nurse-Nurse	5	10,23,28	3,16
Nurse-Physician	5	35,39	6,19,37

The third step in Part B is calculating a Total Scale Score. This score provides an estimate of overall levels of satisfaction. It is the sum of the scores for all forty four items included in Part B. To calculate the total scale score, add up all 6 Component Scores. This score is then divided by the number of items which is forty four. This gives you the mean scale score. The Total Component Scale Score for this survey is 203.7. The Mean Component Score is 5.0. Both the Total Scale Score and the Mean Scale Score are unweighting estimates of the level of satisfaction, as are the Component Scores. In order to have weighted scores, you must calculate the Index of Work Satisfaction. See below for the Component Scale Scores and Component Mean Scores.

Once completed there is enough data to calculate the IWS. To calculate the Component Adjusted Scores for Part A and Part B, the Component Weighting Coefficient from Part A, was multiplied by the Mean Score for each component from Part B. This number is the Component Adjusted Score.

This weighs the satisfaction of each component by the level of importance placed on each component by the CRNA's. The Total Scale Score was calculated at 203.7, the possible range of the score is 44-308. The Mean Scale Score was calculated at 5.0, with a possible range of 1-7. The IWS was calculated to be 16.4, with a possible range of 0.9-37.1. Dr. Stamps states that the average satisfaction score for nursing is 12, which ranks nurses as unsatisfied in the workplace. The mean score measures CRNAs as somewhat satisfied, but the IWS, rates job satisfaction of Michigan CRNAs as higher than nurses, but still unsatisfied in the workplace.

When interpreting the scores there are two categories of numerical scores that are most commonly used to summarize the results of the IWS questionnaire. The first category includes scores that provide an estimate of the CRNA's total satisfaction, and the second includes scores that represent an estimate of satisfaction with each of the separate components of satisfaction. Both these categories have both weighted and unweight scores. No matter which score is used, one of the most important issues related to the IWS interpretation is awareness of the context of any specific number.[62] It is important to always consider the possible ranges of the values, rather than relying only on the absolute numerical score itself. The level of satisfaction that is highest for CRNA's based on the Component Scale Score and the Component Mean Score is Professional Status with a scale score of 40.1 and a mean of 6.69. The next highest is Autonomy with a scale score of 36.2 and a mean of 6.0. The mean value is more easily interpreted, since it is on a scale of 1 to 7, with 7 representing very high levels of satisfaction. It is more difficult to interpret the scores of 40.1 and 36.2, even when acknowledging that is score is based off a possible maximum score of 42. It is very easy to see that CRNA's satisfaction is derived from their Professional Status and Autonomy. CRNAs are less satisfied with their Organizational Policies and Pay. The scale score for Organizational Policies was 25.6 with a mean of 4.3, and the scale score for Pay was 26.54 with a mean of 4.42. Even though these means are the lowest of all components, it falls within the neither agree nor disagree category on the Likert scale. CRNA's don't

dislike their Pay or Organizational Policies; these variables just do not lead to as much satisfaction as Professional Status and Autonomy.

Dr. Paula Stamps recommends using a benchmark to provide guidance in deciding what a particular numerical score means. She recommends doing an analysis based on quartiles, a version of percentiles. Scoring the survey this way would identify data in one through four quartiles. If an item fell within the first quartile, it would be below the twenty fifth percentile of a total possible score. A score in the second quartile is at or below the fiftieth percentile. The third quartile is below the seventy fifth percentages and a score above seventy five percent would be in the fourth quartile.

The table below identifies the quartiles for each component in Part B, and for the Component Weighting Coefficient, Component Adjusted Scores and IWS in Part A. In Part B, only Task Requirements and Organizational Policy fell into the second quartile, whereas every other component, including total over-all score, was identified in the third quartile. Calculations of quartiles in Part A showed all three components falling into the second quartile. Scores that fall into the first and second quartile represent low levels of satisfaction. The third and fourth quartiles represent higher levels of satisfaction. CRNAs have higher satisfaction, based on the quartiles, in Pay, Autonomy, Professional Status and Interactions. Lower levels of satisfaction arise from Task Requirements and Organizational Policies.

Scoring of the data for the CRNA Index of Work Satisfaction

Table 2: Frequency Matrix

Most Important ↔

Least Important↓	Pay	Autonomy	Task Requirements	Organizational Policies	Professional Status	Interaction
Pay		128	119	51	125	129
Autonomy	128		81	42	102	118
Task Requirements	159	195		60	189	180
Organizational Policies	226	237	219		241	235
Professional Status	150	177	90	38		147
Interaction	150	159	97	44	132	

Table 3: Proportion Matrix

Most Important ↔

Least Important ↓	Pay	Autonomy	Task Requirements	Organizational Policies	Professional Status	Interaction
Pay		.541	.428	.184	.455	.462
Autonomy	.459		.293	.151	.366	.426
Task Requirements	.572	.707		.215	.677	.650
Organizational Policies	.816	.849	.785		.864	.842
Professional Status	.545	.634	.323	.136		.527
Interaction	.538	.574	.350	.158	.473	

Table 4: Matrix of Z Values Showing the Component Weighting Coefficient

Most Important ↔

Least Important ↓	Pay	Autonomy	Task Requirements	Organizational Policies	Professional Status	Interaction
Pay		.103	-.181	-.900	-.113	-.095
Autonomy	-.103		-.545	-1.032	-.342	-.187
Task Requirements	.181	.545		.789	.459	.385
Organizational Policies	.900	1.302	.789		1.098	1.003
Professional Status	.113	.342	-.459	-1.098		.068
Interaction	.095	.187	-.385	-1.003	-.068	
Sum	1.186	2.479	-.781	-3.244	1.034	1.17
Mean	.237	.496	-.156	-.649	.207	.235
Component Weighting Coefficient*	3.337	3.596	2.944	2.451	3.307	3.335

*Calculated by adding +3.100 as a standard value to each of the mean values.

Attitude Scale (Part B)

Data Table for Calculating Component Scores

Table 5: Pay Component Scores

PAY		Item # 1	Item # 8	Item # 14	Item # 21	Item # 32	Item # 44	Component Score *(sum of average scores)*	Component Mean Score *(component score ÷ number of items)*
Strongly Agree	score	7	1	7	1	7	1		
	# of resp.	72	14	37	15	28	38		
	subtotal	504	14	259	15	196	38		
Agree	score	6	2	6	2	6	2		
	# of resp.	124	101	114	63	106	50		
	subtotal	744	202	684	126	636	100		
Moderately Agree	score	5	3	5	3	5	3		
	# of resp.	44	24	48	22	31	45		
	subtotal	220	72	288	66	155	135		
Undecided	score	4	4	4	4	4	4		
	# of resp.	6	33	20	43	36	43		
	subtotal	24	132	80	172	144	172		
Moderately Disagree	score	3	5	3	5	3	5		
	# of resp.	17	44	29	45	32	22		
	subtotal	51	220	87	225	96	110		
Disagree	score	2	6	2	6	2	6		
	# of resp.	11	28	18	50	30	63		
	subtotal	22	168	36	300	60	378		
Strongly Disagree	score	1	7	1	7	1	7		
	# of resp.	4	14	11	38	14	15		
	subtotal	4	119	22	266	14	105		
Total of Item		1569	927	1456	1170	1301	933		
Total # of Resp.		278	279	277	276	277	277		
Average Score		5.64	3.32	5.26	4.24	4.70	3.38	26.54	4.42

Data Tables for Calculating Component Scores

Table 6: Autonomy Component Scores

AUTONOMY		Item # 7	Item # 13	Item # 17	Item # 20	Item # 26	Item # 30	Item # 31	Item # 43	Component Score (*sum of average scores*)	Component Mean Score (*component score ÷ number of items*)
Strongly Agree	score	1	7	1	1	7	1	1	7		
	# of resp.	26	50	16	5	11	9	5	21		
	subtotal	26	350	16	5	77	9	5	147		
Agree	score	2	6	2	2	6	2	2	6		
	# of resp.	28	125	25	12	27	8	24	26		
	subtotal	56	750	50	24	162	16	48	208		
Moderately Agree	score	3	5	3	3	5	3	3	5		
	# of resp.	32	68	54	33	35	34	58	27		
	subtotal	96	340	162	99	175	102	174	135		
Undecided	score	4	4	4	4	4	4	4	4		
	# of resp	28	8	48	20	25	41	28	34		
	subtotal	112	32	192	80	100	164	112	136		
Moderately Disagree	score	5	3	5	5	3	5	5	3		
	# of resp.	34	17	42	68	55	45	30	78		
	subtotal	170	51	210	340	165	270	150	234		
Disagree	score	6	2	6	6	2	6	6	2		
	# of resp.	101	6	78	92	78	114	94	68		
	subtotal	606	12	468	552	156	696	564	136		
Strongly Disagree	score	7	1	7	7	1	7	7	1		
	# of resp	29	3	14	44	44	26	37	22		
	subtotal	203	3	98	308	44	182	259	22		
Total of Item		1269	1538	1196	1408	879	1439	1317	966		
Total # of Resp.		278	277	277	274	275	277	276	276		
Average Score		4.56	5.55	4.32	5.14	3.20	5.19	4.77	3.50	36.23	6.04

Table 7: Task Requirement Component Scores

TASK REQUIRE-MENTS		Item # 4	Item # 15	Item # 22	Item # 24	Item # 29	Item # 36	Component Score *(sum of average scores)*	Component Mean Score *(component score ÷ number of items)*
Strongly Agree	score	1	1	7	7	7	1		
	# of resp.	20	5	58	18	24	13		
	subtotal	20	5	406	126	168	13		
Agree	score	2	2	6	6	6	2		
	# of resp.	51	24	131	112	122	42		
	subtotal	102	148	786	672	732	84		
Moderately Agree	score	3	3	5	5	5	3		
	# of resp.	64	56	41	52	43	67		
	subtotal	192	168	205	260	215	201		
Undecided	score	4	4	4	4	4	4		
	# of resp.	50	51	10	23	20	48		
	subtotal	200	204	40	92	80	192		
Moderately Disagree	score	5	5	3	3	3	5		
	# of resp.	37	41	18	36	35	37		
	subtotal	185	205	54	108	105	185		
Disagree	score	6	6	2	2	2	6		
	# of resp	48	81	8	25	25	61		
	subtotal	288	486	16	50	50	366		
Strongly Disagree	score	7	7	1	1	1	7		
	# of resp	8	18	11	10	8	10		
	subtotal	56	126	11	10	8	70		
Total of Item		1043	1242	1518	1318	1358	1111		
Total # of Resp.		278	276	277	276	277	278		
Average Score		3.75	4.50	5.48	4.78	4.90	4.00	27.4	4.57

Table 8: Organizational Policies Component Scores

ORGANIZATIONAL POLICIES		Item # 5	Item # 12	Item # 18	Item # 25	Item # 33	Item # 40	Item # 42	Component Score (*sum of average scores*)	Component Mean Score (*component score ÷ number of items*)
Strongly Agree	score	7	1	1	7	1	7	7		
	# of resp.	33	70	42	10	14	10	11		
	subtotal	231	70	42	70	14	70	77		
Agree	score	6	2	2	6	2	6	6		
	# of resp.	78	74	62	43	33	35	55		
	subtotal	468	148	124	258	66	210	330		
Moderately Agree	score	5	3	3	5	3	5	5		
	# of resp.	64	62	85	50	76	67	63		
	subtotal	320	186	255	250	228	335	315		
Undecided	score	4	4	4	4	4	4	4		
	# of resp.	25	25	0	24	45	30	40		
	subtotal	100	100	0	96	180	120	160		
Moderately Disagree	score	3	5	5	3	5	3	3		
	# of resp.	28	18	40	46	26	48	31		
	subtotal	84	90	200	138	130	144	93		
Disagree	score	2	6	6	2	6	2	2		
	# of resp.	22	25	38	52	67	45	39		
	subtotal	44	150	228	104	402	90	78		
Strongly Disagree	score	1	7	7	1	7	1	1		
	# of resp.	29	4	7	49	14	42	36		
	subtotal	29	28	7	49	98	42	36		
Total of Item		1276	772	856	965	1118	1011	1089		
Total # of Resp.		279	278	274	274	277	277	275		
Average Score		4.57	2.78	3.12	3.52	4.04	3.65	3.96	25.64	4.27

Table 9: Professional Status Component Scores

PROFESSIONAL STATUS		Item # 2	Item # 9	Item # 11	Item # 27	Item # 34	Item # 38	Item # 41	Component Score *(sum of average scores)*	Component Mean Score *(component score ÷ number of items)*
Strongly Agree	score	1	7	7	1	7	7	1		
	# of resp.	21	14	165	0	121	131	2		
	subtotal	21	98	1155	0	847	917	2		
Agree	score	2	6	6	2	6	6	2		
	# of resp.	56	73	92	6	113	80	1		
	subtotal	112	438	552	12	678	480	2		
Moderately Agree	score	3	5	5	3	5	5	3		
	# of resp.	60	72	9	4	30	23	3		
	subtotal	180	360	45	12	150	115	9		
Undecided	score	4	4	4	4	4	4	4		
	# of resp.	18	25	5	8	6	13	5		
	subtotal	72	100	20	32	24	52	20		
Moderately Disagree	score	5	3	3	5	3	3	5		
	# of resp.	38	50	1	17	3	9	9		
	subtotal	190	150	3	85	9	27	45		
Disagree	score	6	2	2	6	2	2	6		
	# of resp.	64	30	3	93	4	13	61		
	subtotal	512	60	6	558	8	26	366		
Strongly Disagree	score	7	1	1	7	1	1	7		
	# of resp.	21	12	13	148	1	9	194		
	subtotal	147	12	3	1036	1	9	1358		
Total of Item		1234	1218	1784	1735	1717	1626	1802		
Total # of Resp.		278	276	278	276	278	278	275		
Average Score		4.44	4.41	6.42	6.29	6.18	5.85	6.55	40.14	6.69

Table 10: Interaction Component Scores

		Nurse – Nurse Interaction					*Nurse – Physician Interaction*						
INTERACTION		**Item # 3**	**Item # 10**	**Item # 16**	**Item # 23**	**Item # 28**	**Item # 6**	**Item # 19**	**Item # 35**	**Item # 37**	**Item # 39**	**Component Score** *(sum of average scores)*	**Component Mean Score** *(component score ÷ number of items)*
Strongly Agree	score	7	1	7	1	1	7	7	1	7	1		
	# of resp	24	12	24	7	6	35	25	58	27	10		
	subtotal	168	12	168	7	6	245	175	58	189	10		
Agree	score	6	2	6	2	2	6	6	2	6	2		
	# of resp	89	11	89	18	7	115	66	55	93	26		
	subtotal	534	22	534	36	14	690	396	110	558	52		
Moderately Agree	score	5	3	5	3	3	5	5	3	5	3		
	# of resp	82	31	82	24	20	78	95	50	82	36		
	subtotal	410	93	410	172	60	390	475	150	410	108		
Undecided	score	4	4	4	4	4	4	4	4	4	4		
	# of resp	18	36	18	29	23	13	26	27	21	31		
	subtotal	72	144	72	116	92	52	104	108	84	124		
Moderately Disagree	score	3	5	3	5	5	3	3	5	3	5		
	# of resp	25	44	25	34	19	20	25	22	26	47		
	subtotal	75	220	75	170	95	60	75	110	78	235		
Disagree	score	2	6	2	6	6	2	2	6	2	6		
	# of resp	24	106	24	103	103	15	23	53	21	84		
	subtotal	48	636	48	618	618	30	46	318	42	504		
Strongly Disagree	score	1	7	1	7	7	1	1	7	1	7		
	# of resp.	16	39	16	99	6	3	14	12	8	44		
	subtotal	16	273	16	693	42	3	14	84	8	308		
Total of Item		1323	1400	1323	1453	638	1470	1285	938	1369	1341		
Total # of Resp.		278	279	278	277	277	279	274	277	278	278		
Average Score		4.76	5.02	4.76	5.23	2.30	5.27	4.69	3.39	4.92	4.82	47.78	4.79

Table 11: Component, Component Scale Scores, Component Mean Scores

Values from Part B

Component	Component Scale Score	Component Mean Score
Pay	26.54	4.42
Autonomy	36.23	6.04
Task Requirements	27.40	4.57
Organizational Policies	25.64	4.27
Professional Status	40.14	6.69
Interaction	47.78	4.79
Nurse-Nurse	24.69	4.94
Physician-Physician	23.09	4.62
	Total Scale: 203.73	Mean Scale 5.04

Table 12: IWS Calculations

III. Calculating the IWS

TABLE 7: Calculating the IWS

Component	I. Component Weighting Coefficient (Part A)	II. Component Scale Score (Part B)	III. Component Mean Score (Part B)	IV. Component Adjusted Scores
Pay	3.34	26.54	4.42	14.76
Autonomy	3.60	36.23	6.04	21.74
Task Requirements	2.94	27.40	4.57	13.44
Organizational Policies	2.45	25.64	4.27	10.46
Professional status	3.31	40.14	6.69	22.14
Interaction*	3.34	47.78	4.79	16.00
Nurse-Nurse	———	24.69	4.94	———
Nurse-Physician	———	23.09	4.62	———
Total Scale Score: 203.73 **(range: 44-308)**		**Mean Scale Score:** 5.04 **(range: 1-7)**		**IWS:** 16.42 **12.0 (range: 0.9-37.1)**

Table 13: Quartiles for Components

Quartiles for Interpreting Data Obtained from the IWS Questionnaire

Component of Part B	Component	Quartile
Pay	26.54	Third Quartile
Autonomy	36.23	Third Quartile
Task Requirements	27.40	Second Quartile
Organizational Policies	25.64	Second Quartile
Professional Status	40.14	Third Quartile
Interaction	47.78	Third Quartile
Nurse-to-Nurse	24.69	Third Quartile
Nurse-to-Physician	23.09	Third Quartile
Total Scale score	203.73	Third Quartile

Quartiles for Part A (Paired Comparisons)

Component Weighting Coefficients	3.16	Second Quartile
Component Adjusted Scores	16.42	Second Quartile
Index of Work Satisfaction	16.42	Second Quartile

Appendix D

Utrecht Work Engagement Scale

The UWES measures three separate characteristics that affect work engagement. They are Vigor, Dedication and Absorption. The mean scale score of the three UWES subscales is computed by adding the scores of the scale and dividing the sum by the number of items of the subscale involved. The UWES yields three subscale scores and a total score that range between zero and six.

In order to interpret the scores of those surveyed, the mean score from the data base is to be used. UWES survey results are all of the mean results of Vigor, Absorption and Dedication. Also included are the total means of each category and a combined mean of Vigor, Absorption and Dedication.

The means of each variable is as follows; Vigor 4.87, Absorption 4.37, and Dedication 5.48. The total mean of the three variables was 4.91. A paired t-test was used in order to test the significance of the difference between the specific groups and a simple t-test was used to test the significance of each variable to the total mean. All were statistically significant with $p<.001$.

The next step in the analysis of the data is to determine the scoring percentages and compare them between the three variables. See Appendix C to see the chart of scoring distribution in percentages for all variables. A high score is considered a 5 or 6 when using this scale. When the percentage score for Vigor was calculated, 31% of employees reported high levels of energy and were willing to invest effort. Dedication or the employee deriving a sense of significance from their work or a feeling of enthusiasm during work was measured at 45.1%. When measuring Absorption, 23% of individuals were totally and happily absorbed with work. Most individuals reported moderate levels (3

and 4) of Vigor (52.1%) and Absorption (50.5%). However, only 34.9% reported only moderate Dedication. Very few individuals reported low levels of Vigor, Dedication and Absorption.

The UWES established statistical norms for this survey. The authors of this study decided to use five categories; very low, low, average, high and very high. Normal scores for the UWES were based on 2,313 previous surveys. The mean for Vigor was 4.87 and was found to be in the low side of the high range (4.81-5.60). The mean for Dedication was 5.48 and was closer to the highest limit in the high category (4.91-5.79). The Absorption mean was measured at 4.37, or at the high end of the average score (2.76-4.40).

The CRNA surveyed measured average levels in Absorption and high levels in Vigor and Dedication. Dedication was measured in the high level, and near the maximum for the high level. Meaning that most CRNA's derive a sense of significance from their work, which is also consistent with the IWS that measured Professional Status as the highest component related to job satisfaction in Michigan CRNAs.

3 separate scales: vigor, dedication, absorption

Table 1: Vigor Scale Scores

Vigor

Vigor	n	Mean	Variance	Standard Deviation
V1	276	4.31	1.29	1.14
V2	275	4.64	1.25	1.12
V3	275	4.49	1.88	1.37
V4	273	5.04	1.46	1.21
V5	272	5.11	1.08	1.04
V6	276	5.61	1.07	1.13
Total	274.5	4.87	1.34	1.17

Table 2: Absorption Scale Scores

Absorption

Absorption	n	Mean	Variance	Standard Deviation
AB1	276	4.83	1.24	1.11
AB2	276	4.12	1.80	1.34
AB3	275	5.08	1.22	1.11
AB4	274	5.09	1.32	1.15
AB5	275	3.63	1.62	1.27
AB6	274	3.45	1.98	1.41
Total	275	4.37	1.53	1.23

Table 3: Dedication Scale Scores

Dedication

Dedication	n	Mean	Variance	Standard Deviation
DE1	276	5.63	.96	.98
DE2	273	5.28	1.23	1.11
DE3	273	4.94	1.44	1.20
DE4	273	6.20	.77	.88
DE5	275	5.35	1.01	1.00
Total	274	5.48	1.08	1.03

Table 4: Means for Vigor, Absorption, Dedication

Vigor, Absorption, Dedication

N	Mean	Variance	Standard Deviation
274.5	4.91	1.32	1.14

Table 5: UWES Scoring Distribution in Percentages

	Vigor	Dedication	Absorption	Total Score
1	4.8	.7	7.2	12.7
2	10.1	1.8	16.5	28.4
3	22.8	13.3	26.2	62.3
4	29.3	21.6	24.3	75.2
5	22.5	30.0	18.8	75.8
6	8.5	15.1	4.5	28.1

Table 6: UWES Statistical Scoring Categories

Scale	Mean	Qualification	Percentage
Vigor	4.87	High	75-95%
Absorption	4.37	Average	25-75 %
Dedication	5.48	High	75-95%

Table 7: Paired T- tests (Vigor, Dedication), (Vigor, Absorption), (Dedication, Absorption)

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	VI_AVG	4.8758	259	.76342	.04744
	DE_AVG	5.4888	259	.79728	.04954
Pair 2	VI_AVG	4.8631	263	.78745	.04856
	AB_AVG	4.3612	263	.79829	.04922
Pair 3	DE_AVG	5.4931	260	.79250	.04915
	AB_AVG	4.3878	260	.77631	.04814

Table 8: Paired Sample Correlations

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	VI_AVG & DE_AVG	259	.723	.000
Pair 2	VI_AVG & AB_AVG	263	.654	.000
Pair 3	DE_AVG & AB_AVG	260	.605	.000

Table 9: Paired Differences

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	VI_AVG - DE_AVG	-.61300	.58198	.03616	-.68421	-.54179	-16.951	258	.000
Pair 2	VI_AVG - AB_AVG	.50190	.66003	.04070	.42176	.58204	12.332	262	.000
Pair 3	DE_AVG - AB_AVG	1.10526	.69710	.04323	1.02012	1.19039	25.566	259	.000

Appendix E

Anticipated Turnover Scale (ATS)

The final tool used in this study was the Anticipated Turnover Scale. This scale also presents with instructions for scoring scales and subscales. All questions were adjusted for statistical analyses. Questions were keyed as a negative scoring question or a positive scoring question. The negative scoring questions were rekeyed as positive, so all questions that were to be compared were all positive in nature. Each question was given a score based on the mean average of all responses. A total score was averaged based on the sum of the average of all questions and divided by the total number of questions.

After each question was rekeyed, a table was constructed for each question. The number of respondents for choice for every question was multiplied by the value given to that answer. The value of one equaled an answer of strongly disagree and seven was assigned to strongly agree. Using the responses multiplied by value corrected for the number of respondents to each question. Not all questions were answered.

The ten questions, after corrected for the number of respondents were then summed and averaged. The average was calculated at 2.94. This means that the average response to the question would you leave your institution at the present time, would be between two and three. On the Likert scale it would represent disagree to somewhat disagree. This suggests that CRNA's in Michigan do not plan on leaving their present place of employment.

Table 1: Question 1 Results

I plan to stay in my position awhile (scored -)

Score	1	2	3	4	5	6	7
Response	92	111	30	13	12	12	4
Total	92	222	90	52	60	72	28

Total score 532/274=1.95

Table 2: Question 2 Results

I am quite sure I will leave my position in the foreseeable future (scored +)

Score	1	2	3	4	5	6	7
Response	94	88	12	24	20	25	13
Total	94	176	36	96	100	150	91

Total score 743/276=2.69

Table 3: Question 3 Results

Deciding to stay or leave my position is not a critical issue for me at this point in time (scored -)

Score	1	2	3	4	5	6	7
Response	48	103	30	40	19	23	12
Total	48	206	90	160	95	138	84

Total score 821/275=2.985

Table 4: Question 4 Results

I know whether or not I'll be leaving this agency within a short time (scored +)

Score	1	2	3	4	5	6	7
Response	17	56	12	52	24	63	49
Total	17	112	36	208	120	378	343

Total score 1214/273=4.45

Table 5: Question 5 Results

If I got another job offer tomorrow, I would give it serious consideration (scored +)

Score	1	2	3	4	5	6	7
Response	46	67	26	33	38	41	23
Total	46	134	78	132	190	246	161

Total score 978/274=3.6

Table 6: Question 6 Results

I have no intentions of leaving my present position (scored -)

Score	1	2	3	4	5	6	7
Response	72	95	27	28	19	18	16
Total	72	190	81	112	95	108	112

Total score 770/275=2.8

Table 7: Question 7 Results

I've been in my position about as long as I want to (scored +)

Score	1	2	3	4	5	6	7
Response	39	96	28	57	20	24	12
Total	39	192	84	228	100	144	84

Total score 871/276=3.16

Table 8: Question 8 Results

I am certain I will be staying here awhile (scored -)

Score	1	2	3	4	5	6	7
Response	70	84	50	33	13	15	9
Total	70	168	150	132	65	90	63

Total score 738/274=2.69

Table 9: Question 9 Results

There are big doubts in my mind as to whether or not I will really stay in this agency (scored +)

Score	1	2	3	4	5	6	7
Response	72	101	22	35	16	17	12
Total	72	202	66	140	80	102	84

Total score 746/275=2.71

Table 10: Question 10 Results

I plan to leave this position shortly (scored +)

Score	1	2	3	4	5	6	7
Response	100	100	15	30	13	8	8
Total	100	200	45	120	65	48	56

Total score 634/274=2.31

Table 11: Sum Scores of all Questions

Sum of Scores

Question	Mean Score
1	1.95
2	2.69
3	2.99
4	4.45
5	3.60
6	2.80
7	3.16
8	2.69
9	2.71
10	2.31

Total score 29.35/10=2.94

Appendix F

Open Ended Questions

Positive Experience Comments

1. This survey is geared towards a CNRA who works in a "team" setting with an MDA. It is not applicable to my practice. I am administrator of a busy ASC and have 15 CRNAs who work form my anesthesia corporation. We all work independently, directly with the surgeon.
2. I love my work.
3. Feel very lucky to work at a surgery center where doctors value our skill and dedication. For the most part, work collegially with MDAs and surgeons. Very different than the previously adversarial relationship with many surgeons (not all) at some of the "downtown" hospitals.
4. Some of us like NOT having autonomy and like doing BIG cases WITH medical direction. We get paid a lot for what we do, and we can expect cuts--due to Fed and Private Health Insurance cuts, and we must do MORE to show our value and do more to increase our value to our employers and the system as a whole. Our pay is high, because we are paid to be vigilant, constantly stressed, and always prepared to react. Each one of us IS replaceable, particularly when schools are churning out too many new grads right now.
5. I work in a rural hospital. There are 2 CRNAs and 2 DOs. A physician has to cosign a chart (usually long after - a month for ex.). We support each other's decisions and share knowledge. The CRNAs perform all the techniques that the DO does.
   I feel very blessed to be a CRNA. It's a calling for me.
6. Job is rewarding because it is an important contribution, and challenging. Rapid changes in the workplace seem more now than ever and produce stress. Time pressures are stressful and can feel unsafe. The work environment to me is most important; a difficult day with the right people is better than an easy day with the wrong people.
7. I am currently working part time in an eye center and plan to retire in about a year. I have had a good career overall, but have seen it all (worked with a bunch of good Dr's who cared about me and nurtured me as a new CRNA and then later was terminated when those docs retired and the new group went to an all doctor group). It's been good, but I've had enough.
8. I enjoy my job very much. I like the variety of cases, the level of autonomy, and the repertoire with the MDAs. Most importantly, I love the flexibility in my schedule. Unfortunately, we have not had a pay raise in 6 years, nor do I see any raise in the near future because case volumes are down because of a sluggish economy. The CRNAs at my hospital would be considered underpaid compared to salary and benefits at surrounding hospitals.
9. The responses about knowing that I will be leaving my position soon are due to imminent retirement and not to job dissatisfaction. I have been at one institution for my entire career except for the first 8 months post-graduation. I have a great boss and work with a great team of CRNAs.
10. We are extremely well paid - the envy of many physicians, in fact. Our profession remains well respected and strong because our professional organization continues to fight for the skills,

autonomy and educational standards that some CRNAs seem to squander in the pursuit of money, status, comfortable lifestyle and a view that nurse anesthesia is just a means to an end.

11. Being a CRNA allows me to serve others, and at the same time, make a decent living.
12. I work at a variety of positions. I am employed at a hospital, do private work, and educate. Due to various organizational constraints at the primary hospital that I work at, it was difficult to answer many questions. I am EXTREMELY satisfied with my position as an educator and in my private practice; however my hospital position is politically challenging and frustrating at this time. I love giving patient care but the political environment is taxing.
13. If you have good friends at work then it is fun to be there together! Good luck with your research project!
14. I am an administrator of a busy ASC and have 15 CRNAs who work for my anesthesia corporation. We all work independently and directly with the surgeon.

Negative Experience Comments

1. Anesthetic care has been made to be like a factory, hurry, rush and human caring is going downhill fast. CRNA managers are puppets for the hospital and are often chosen for this purpose Physician's and MDA often do not want to be involved with the labor, but want the credit for anesthesia care from the public, Hospital administrators, and the MONEY! I find the anesthesia team is a good model, if it functions as a team. Patients are who are being short hanged. We see this inspire of the percentage of the GDP being spent on healthcare. Advanced Practice Nurses are trying to be forced out of market, while the country needs more NP. My children and I have used NP and have been very satisfied. AMA and other medical organizations want to have the public think they are getting inferior care if it is not provided by an MD. I do feel the cost of education is getting too high for most CRNA students. I have always thought the initials behind the name do not guarantee great care that is safe and that patient is happy with.
2. The value of a study such as this is specificity. These are confusing concepts and often poll two questions at same time. I do have the ability to make decisions independently because I am alone in the OR, but WILL NOT be backed up by supervisors if anything goes wrong. How do I answer that question? Anesthesia can be a very lonely profession with only self-evaluation in appreciation. Guess most of medicine is the same way. You are expected to do a good job and only get comment when you don't. Also, some CRNAs count themselves "lucky" to get out of work, so will do nothing to help another CRNA who may be getting the short stick. Go home early when it's not your turn; disappear when there is a case coming up, etc. It's only human, but not really professional behavior in my opinion.
3. I feel badly for the 30 something generation entering this field.
4. I am leaving my job because of a new mandatory flu shot that totally disregards my right to informed consent. This of course comes from administration whose only concern is to maximize reimbursement from CMS, with total disregard to the health and objections of employees. Of all employers you would think health care would be most sensitive to proper informed consent. Fact is truly stranger than fiction. Please support health care workers for vaccine choice! Very sad that we have to beg for our rights to be returned to us!

5. Up until the past year my job was more relevant and exciting. The cases were challenging and the MDA CRNA dynamics were respectful and collegial. However much of the CRNA practice has been taken away and given to residents often junior residents who are poorly supervised and far from able to care for our sick population. It is very frustrating seeing patient care being delivered at a standard far below what you know you could be providing.
6. The biggest problem I have is that there is no room for advancement. Once I am a CRNA, I will always be a CRNA. To me, there is no vision or goals among my CRNA peers. It is just another job. I do not like that. I do not like working without goals and a vision. Hence, the completion of a Doctorate degree. I hope to move up and out of anesthesia.
7. The question: If someone asked you if you were happy at work, how would you respond? I said no because of many administrative reasons and attitudes. Our chairperson, an MDA, is the only one who makes any decisions. No matter how much any CRNA on staff voices concerns, offers ideas or makes suggestions. Our director is not a CRNA and should not be in that position. So I'm not happy with that situation at work, and no one else is either, but I love the work I do and try to keep my opinions to myself. That's frustrating for me because I have a lot of opinions.
8. The questions regarding MDA involvement do not apply at my hospital. We have none!! For those questions I marked neutral responses however I would be strongly inclined to avoid working fulltime in an MDA directed setting. Been there done that and left a vile taste in my mouth!!!!
9. Work in a team setting with some MDAs that are very comfortable working with CRNAs but have a couple that want to devise a plan such as "no narcotics". This has been the most directed staff position I have ever been in but I want to work for the Catholic hospital as I believe in its mission.
10. My administrator does not feel the same way I do about financial compensation. I have been told by my administrator, that the education money I receive annually is usually only used to "go on a nice vacation". My administrator feels we are adequately compensated financially, even though I currently make less money than I did 4 years ago (prior to a department pay cut). My administrator tows the corporate ideology - which is very different from the feelings of the staff CRNAs.
11. It seems ingrained in the nursing profession at any level that we eat our young. I've never understood that but have seen it time and again in my managers and colleagues. How can we take care of our patients when we don't or aren't allowed to take care of ourselves? Apparently the level of education doesn't seem to matter either which does not provide incentive to pursue a doctorate in this current climate.
12. Nurse anesthesia has changed from an autonomous, rewarding and challenging profession to a job where we are told what to do by MDA's who have little respect for us. As glorified ICU nurses we are overpaid for what we are "allowed" to do. Even the questions in this survey reflect this sad change in our practice. Perhaps one day Michigan will have a nurse practice act that will help us regain some of what we have lost in recent years. I am concerned though when I read surveys such as this one that centers so much on money concerns without honing in on the true practice issues.

13. I feel management needs to get out of there corner offices and see what the worker bees have to deal with on a daily basis. Maybe then things would change for the working class. Bias and favoritisms need to be removed. The good ole boys (and girls) club needs to go.
14. My answers to your questions are very different today than they would have been 2 years ago. We have an MDA that is calculatingly destroying the CRNAs. Especially the females. We are being restricted in our practice by him and belittled in front of patients. Administration despite a very public campaign and mandatory in-service process to provide a 'respectful and safe environment' has done nothing. So while I love my job, I am beginning to hate work. Good luck with your research.
15. I only call in sick because I acquire PTO of which I cannot use in advance & this is rare. I believe nursing as a whole is underpaid.
16. I like the work I do as a CRNA. It is the chief CRNA management that is currently in place which is what makes the job miserable. Prior to her placement, the previous manager allowed for a very pleasant working environment. Things have changed drastically.
17. I really like my job but there is gossip and childish backstabbing issues where I work that can be upsetting and difficult to ignore. Production pressure can wear me out at times.

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