

Nurses' Commitment and Motivation to Improved Personal Health: The Role of Hospital
Administration

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SIGNATURE PAGE

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Dedication

This research is dedicated to the nurses “in the trenches” who are making differences in the lives of patients every day. Their jobs are incredibly difficult. I would be honored to help improve their health.

Abstract

Two-thirds of adults in the United States are overweight, 34% are obese. Obesity leads to increased morbidity and mortality, while decreasing the quality of life of individuals and adding enormous fiscal burdens to an employer. Health care systems are especially feeling the encumbrance of increasing health care costs due to the rise in obesity. Hospital workers, on average, have higher utilization rates and carry a higher burden of chronic illness than employees in other market segments by nine percent. Healthier hospital staffs have less absenteeism, are more productive, make fewer mistakes and report greater overall satisfaction.

Nurses comprise the largest section of the healthcare industry; therefore, the health of nurses affects the overall effectiveness of health systems. The goal of the current research was to ascertain the most efficient interventions in which employers could institute to motivate nurses to increase their physical health.

The study methodology incorporated a mixed design. Subjects signed a consent form and then completed a demographics questionnaire. Subjects were given a theoretical case study involving Nurse X. Nurse X desired to improve her/his health status in three facets: decrease BMI, increase exercise and to eat healthier. The participants were asked to transpose themselves as Nurse X and rate (on a Likert Scale) which of the given scenarios would best motivate and gain their commitment to increase their health status. The scenarios ranged from employers offering more healthy food options to reductions in health insurance premiums for improved health.

Results indicated that over half (51.9%) of the 139 subjects were either overweight or obese, as calculated by BMI. Triangulation was used to bridge the qualitative and quantitative

data. From this, six themes emerged which related to barriers nurses face to optimal health: lack of time, difficulty with twelve hour shifts, physical demands of nursing, lack of a supportive work environment, nurse's belief that employers only care about the bottom line, personal accountability and obese nurses believing that their excess weight was a benefit for their careers.

This research suggests that employers should focus resources on the overweight group, as they were the most motivated and committed towards the interventions proposed. The obese group was the least motivated and least committed towards improving their health.

Chapter I

Background

More than one-third of adults in the United States are overweight and 35.7% are obese (Centers for Disease Control, 2013). There is an obesity epidemic in the United States (Romney, Thomson & Kash, 2011). Obesity leads to increased morbidity and mortality, while decreasing the quality of life of individuals (Zitkus, 2011). According to The World Health Organization (WHO), the definition of obesity is having a very high amount of body fat in relation to lean body mass: specifically, having a Body Mass Index (BMI) of 30 or higher. A BMI of 25 or greater is considered to be overweight (WHO, 2013). The incidence of overweight and obesity have increased by 300% over the past four decades (Miller, Alpert & Cross, 2007). Overweight and obesity, as well as their related non-communicable diseases, are largely preventable (Zitkus, 2011).

There is a correlation between cardiovascular exercise, decreased BMI and obesity. Strong evidence demonstrates that compared to less active adult men and women, individuals who are more active have lower rates of all-cause mortality, coronary heart disease, high blood pressure, stroke, type 2 diabetes, metabolic syndrome, colon and breast cancer and depression according to the Centers for Disease Control and Prevention (CDC, 2013). The World Health Organization (2013) recommends that adults between the ages of 18-64 years should complete at least 150 minutes of moderate-intensity aerobic physical activity throughout the week or engage in at least 75 minutes of vigorous-intensity aerobic physical activity throughout the week; muscle-strengthening activities should be done involving major muscle groups on two or more days a week. The American Heart Association recommends exercising at a target heart rate ranging from 50% to 75% of the maximum heart rate, commonly calculated as 220 minus the

individual's age (American Heart Association, 2012). Maintaining low body fat, according to the American Institute of Cancer Research (2009), could prevent over 100,000 cases of cancer each year in the United States. Specifically, excess body fat is linked to cancers of the colorectum, endometrium, esophagus, gallbladder, kidney, pancreas and postmenopausal breast cancer (Goetzel et al., 2010). The World Health Organization estimates that globally, 44% of diabetes cases, 23% of ischemic heart disease cases and as high as 41% of cancer cases are attributable to overweight and obesity (WHO, 2013).

Obesity is an issue because it leads to death and other diseases. In addition, the fiscal impact of the disease is significant. In 2010, national healthcare spending was near \$2.6 trillion; which accounted for more than 17 percent of the Gross Domestic Product (GDP) (Taylor & Bithoney, 2012). In 2011, The Centers for Disease control (CDC) estimated that obesity costs exceed \$147 billion annually. In a projected period of 2009-2019, health care spending will increase by 6.1 percent, outpacing the annual overall economic growth of 4.4 percent. It is also projected that health care spending will reach \$4.5 trillion and comprise 19.3 percent of GDP (Centers for Medicare & Medicaid Services, 2013). In 2008, the medical costs for people who were obese was \$1,429 higher than those of normal weight in a year (CDC, 2013).

Health care systems are especially feeling the burden of increasing health care costs. Hospital workers, on average, had higher utilization rates and carried a higher burden of chronic illness than employees in other market segments. Their costs (medical care and prescription drugs) were nine percent higher than the general population (Taylor & Bithoney, 2012). Hospital employees and their dependents were more likely to be diagnosed with asthma (by 12 percent), obesity (by 46 percent), and depression (by 20 percent) in comparison to the general US workforce (Taylor & Bithoney, 2012).

According to Hicks et al. (2008), clients coming into a hospital have significantly more confidence in the ability of normal-weight nurses to provide education about diet and exercise when compared with overweight nurses. Hicks et al., conducted research to explore the relationship between nurses' body weight and patient confidence in their ability to provide health education. They administered a quasi-experimental post-test on a sample size of 135 participants. The researchers concluded that poor health and lifestyle behavior exhibited by nurses significantly negatively impacted the credibility of their health-promotion messages. Patients felt less confident receiving health education from overweight nurses. By employing overweight or obese nurses, organizations may have less success in health teaching and promotion (Hicks et al., 2008).

With a healthier staff, hospitals see less absenteeism, more productivity, fewer errors and greater overall satisfaction (Goetzl et al., 2010). Similar to absenteeism is the concept of presenteeism, or the degree to which workers are on the job but are not fully functioning because of medical or psychological conditions. A study by Gates et al., in 2008 provided evidence that obesity is associated with significantly greater health-related limitations in the workplace; furthermore, that obese workers have difficulty moving because of their body size and the large amount of weight they carry, leading to a greater amount of experienced pain. The study estimated a modest dollar amount on obese presenteeism compared to healthy weight presenteeism; obese workers wasted \$506 per work year as compared to \$433 in normal BMI nurses (Gates et al., 2008).

As the cost of health care and insurance increases, it is important for employers to motivate and help employees improve their health status, in particular their cardiovascular health (Armstrong et al., 2011). In a study conducted by Goetzl, Guindon, Turshen & Ozminkowski

(2001) involving more than 950,000 subjects, employee health and organizational success were both qualitatively and quantitatively studied. The researchers determined that a healthier staff resulted in lower health care costs, less unscheduled absences, less non-occupational disability and lower worker's compensation costs with a total savings of 26%. The savings for an organization with healthy people is substantial (Goetzel, Guindon, Turshen & Ozminkowski, 2001).

In 2012, Taylor & Bithoney determined that compliance with common preventive service measures (lipid testing; breast, cervical and colorectal cancer screenings) was consistently lower among hospital employees and their dependents. The study analyzed 350,000 hospital employees in more than 200 hospitals using the Truven Health MarketScan. Although health care screenings were used less frequently, healthcare costs for hospital workers was nine percent higher than costs incurred by the general public (Taylor & Bithoney, 2012). Furthermore, preventative screenings are critical for providers to partake in because health care worker's estimates of their own heights, weights, and BMI are highly inaccurate (Hendershot et al., 2006). Females and heavier respondents frequently under-report their BMI. This can lead to a minimized perception of health risks (Akhtar-Danesh, Dehghan, Merchant, and Rainey, 2008).

Some hospitals have had great success in promoting health among their employees. Sentara Health System in Norfolk, Va., reported a savings of \$3.4 million in health care costs over three years instituting a health assessment screening. The screening was two-fold, employees were given a standard health screening and then individualized information was provided on how to improve health. The employer reported savings on subsequent insurance premiums at the organizational level as well as the individual level (Greene, 2011).

Etiology and Risk Factors

Obesity is the second largest behavior-related cause of death in the United States (May & Buckman, 2007). According to the United States Department of Health and Human services obesity is responsible for more than 300,000 deaths per year (United States Department of Health and Human Services, 2013). In 2008, more than 1.4 billion adults were overweight and more than half of a billion were obese. At least 2.8 million people each year die as a result of being overweight or obese (WHO, 2013). The prevalence of extreme and super-obesity (body mass index > 40 or 50 kg/m^2 respectively) has increased by 50% and 75% over the past 50 years (Turner et.al., 2012). It is estimated that well over half of all registered nurses are overweight or obese (Zitkus, 2011). Zitkus took biometric measurements on 721 Registered Nurses in a convenience sample. The research found that 27% of Registered Nurses were obese and 41.9% of nurses were overweight (Zitkus, 2011). A recent study conducted at the University of Maryland, the researchers Han, Trinkoff, Storr, Geiger-Brown (2011) surveyed data from 2,103 nurses and found that 55% of the sample was obese. The subjects cited adverse work schedules, lack of access to healthy food and less than optimal meal breaks as the major factors contributing to their obesity (Han, Trinkoff, Storr & Geiger-Brown, 2011).

The prevalence of obesity is on a global-wide increase, but still the etiology of adult obesity is poorly understood. Researchers are seeking an understanding of specific gene(s) that increase the propensity of obesity (Tiwari, Bouchard, Pérusse & Allison, 2005). A variety of factors contribute to overweight and obesity, including metabolic or genetic abnormalities, however, the overwhelming majority of cases appear to be linked to poor eating habits and sedentary lifestyles (Miller, Alpert & Cross, 2008). Obesity is as common, if not more common, in nurses as the general public (Zapka, Lemon, Magner & Hale, 2009; Zitkus, 2011; Han,

Trinkoff, Stoff & Geriger-Brown, 2011). This is significant because nurses have advanced knowledge of both the health-related risks of obesity and the methods for managing it (Malik, Blake & Batt, 2011). According to Schulte et al. (2007), there is increasing evidence that obesity and overweight may be related, in part, to adverse work conditions. In Schulte et al., (2007) research, the risk of obesity was correlated to an increase in high-demand, low-control work environments, and for those who work long hours (Schulte et al., 2007).

Nursing Shortage:

Registered Nurses (RNs) play a critical role in health care delivery. Health care demand is growing at an unprecedented pace creating a RN deficit. The deficit is expected to intensify as Baby Boomers age and the need for health care grows (Juraschek, Zhang, Ranganathan, & Lin, 2012). The deficit is related to many factors: student-nurse enrollment is not substantial enough to meet the demand, shortage of nursing school faculty, average age of RN is climbing (44.5 years), more than 50% of the nursing workforce is close to retirement, aging general population with higher levels of chronic issues, insufficient staffing leading to decreased retention, high nurse turnover and vacancy rates (American Association of Colleges of Nursing, 2012).

Therefore, the retention of current nurses is becoming paramount (Juraschek, Zhang, Ranganathan, & Lin, 2012).

Impact:

Employers have vested interest in the health of their employees (May & Buckman, 2007). Reducing obesity among nursing professionals is critically important in order to ensure that nursing staff can serve as optimum role models for their patients and decrease their own risk of chronic health problems, including death (Malik, Blake & Batt, 2011). Improving the weight

management practices of nurse and reducing obesity will have multi-faceted benefits (Romney, Thomson & Kash, 2011). Weight loss of only five percent can significantly improve a wide range of health outcomes that could result in cost savings for employers and dramatic health promotion in employees (Finkelstein, Linnan, Tate, & Birken, 2007).

Hospitals and health systems have a compelling opportunity to positively influence the overall health of their workforce. By increasing physical health, benefits could be experienced by both the hospital and the individual, including: financial savings for both, increased work productivity, better patient teaching, decreased chronic conditions, decreased absenteeism, decreased presenteeism, decreased worker's compensation cases, decreased pharmacy spending, etc. (Taylor & Bithoney, 2012; Kaewthummanukul & Brown, 2006; Goetzel et al., 2001).

Motivational Interview Model:

Motivational interviewing (MI) is a strategy designed to enhance a partaker's motivation for change and adherence to treatment. It is a directive, individual-centered counseling style that aims to help participants explore and resolve ambivalence surrounding complex behavior change (Armstrong et al., 2011). Clients must bear the responsibility of deciding for themselves whether or not to change and how best to go about it (Söderlund, 2010). Motivational interviewing assumes that most people hold conflicting motivations for change and often vacillate in their degree of motivation and ambivalence (Arkowitz & Miller, 2008). MI allows clients to openly express their ambivalence in order to guide them to a satisfactory resolution of their conflicting motivations, with the aim of facilitating desired behavioral changes (Armstrong et al., 2011).

It is not the motivational interviewing counselor's function to directly persuade or coerce the client to change. Attempting to directly persuade a client to change will be ineffective

because it entails supporting the conflict that the client is already experiencing. The result is that the client may adopt the opposite stance, arguing against the need for change, thereby resulting in increased resistance and a reduction in the likelihood of change (Söderlund, 2010). Hence, an important objective of motivational interviewing is to increase a client's intrinsic motivation to change, which arises from personal goals and values. This approach emphasizes helping a client to make their own decision to change, rather than the client being pressured from external sources such as others' attempts to persuade or coerce the person to change (Arkowitz & Miller, 2008).

Motivational interviewing was first introduced by Bill Miller, a psychologist from the United States. In 1983, Miller was working with colleagues in Norway on a method to therapeutically approach people who suffered from alcoholism. In 1991, these fundamental concepts and approaches were elaborated in a textbook with a more detailed description of the clinical procedures. The textbook was co-written by Bill Miller and Steve Rollnick, a South African psychologist (Treasure, 2004). Since its inception as a systematic approach to treat alcoholism and substance abuse, MI has now transcended to help anyone who wants to change a particular behavior such as weight loss (Arkowitz & Miller, 2008).

Purpose Statement:

The purpose of this study was to ascertain the most effective interventions that employers could institute to motivate nurses to increase their physical health status, particularly in three major facets: decrease BMI, increase physical exercise and to eat healthier.

Chapter II

Review of Literature

Perception of Health

Individuals face many barriers in their attempts to increase their health and lack of motivation is a major impediment (Gray et al., 2011). Yaemsiri, Slining and Agarwal (2011) attempted to uncover if perception of weight status affected motivation to lose weight. They specifically sought to understand three things: the association between perceived overweight status and weight control, discrepancies between perceived and measured weight status and finally, the opportunities for health care providers to correct weight perception among US adults. The researchers used three, two-year cycles of the continuous National Health and Nutrition Examination Survey (NHANES), from 2003-2008. The NHANES is a nationally representative complex, multistage probability sample of the US civilian populations, conducted by the National Center for Health Statistics. Skilled interviewers questioned participants about their weight control using a computer-assisted personal interviewing system. Participants were asked "Would you like to weigh more, less, or stay the same?" Those who reported that they wanted to lose weight were further asked to report all of the ways they tried to lose weight; these responses were put into three categories: dietary changes, physical activity or other. Participants were also asked, "Do you consider yourself now to be overweight, underweight or about the right weight?" The sample was limited to non-pregnant adults over the age of 18. There were 16,720 participants. 51% were female and 30% were age 55 or older (Yaemsiri, Slining & Agarwal, 2011).

Approximately one-third of the participants were over-weight (27% women, 39.4% men) while another third were obese (34.1% women, 31.3% men). Sixty-four percent of the total

population wanted to lose weight (73.2% women and 55.1% of men). Those who perceived themselves as overweight had the highest percentages for wanting to lose weight (98.3% women and 95.2% of men). Although almost two-thirds of the participants desired to weigh less, less than half (48.4%) reported pursuing weight control and an even lower portion reported trying to lose weight (37.0%) (Yaemsiri, Slining & Agarwal, 2011).

The study found large discrepancies between actual weight and perceived weight in the participants. Almost one-half (48.1%) of overweight men and women perceived themselves to have a healthy weight. The vast majority (69% of women and 78% of men) who were overweight were never diagnosed as overweight or obese by a health care provider even though they received regular health exams. More importantly, the researchers found that 27% of obese women and 31% of obese men had never been told that they were overweight or obese by a health care provider. This is important because the analysis found that overweight self-perception was the most important predictor of desire to weigh less and the pursuit of weight control. Yaemsiri, Slining and Agarwal also reported that those diagnosed as overweight or obese by a health care provider were more likely to make dietary changes, exercise or pursue both (Yaemsiri, Slining & Agarwal, 2011).

The analysis also suggested that misperceptions of weight status may be increasing. The high prevalence of overweight and obesity in America may make the condition appear 'normal.' Health care professionals may increase the motivation of a patient by correcting their client's weight misperceptions and addressing their diagnoses (Yaemsiri, Slining & Agarwal, 2011).

There were some major limitations to this analysis. According to The National Center for Health Statistics, the six years of data related to this study overanalyzed certain populations; this

included low income persons, people over 60 years, African-Americans and Mexican-Americans. Another limitation to this research was that it was partially self-reported; people may have misjudged their motivation or perception of weight in many aspects. Finally the use of BMI is a limitation to this study. Not all people with a high BMI are overweight or fat. People with high-muscle masses can have high BMI's but still be healthy. The strengths of this analysis were that it was a longitudinal study over six years and included over 17,000 people from varying demographics. The NHANES is a highly validated tool for data collection (Yaemsiri, Slining & Agarwal, 2011).

Nurse Beliefs Regarding Health

A large portion of practicing nurses are overweight or obese. The benefits of improving physical activity and lowering the prevalence of obesity are vast. Health care providers that are overweight or obese create limitations on the influence they have in patient teaching and role modeling (Zapka, Lemon, Magner, & Hale, 2008). In 2011, Esposito and Fitzpatrick sought to understand the association between nurses' beliefs regarding the benefits of being healthy (exercising and maintaining a normal weight) and the subsequent quality and content of teaching that occurred with their patients (Esposito & Fitzpatrick, 2011).

Esposito and Fitzpatrick conducted a correlational descriptive study of three variables: beliefs regarding benefits of exercise, reported exercise behaviors and recommendation of exercise to patients as part of a treatment plan. The three beliefs were measured using the Exercise Benefits/Barriers Scale (EBBS). The scale produces a score, ranging from 29-116, the higher the score, the stronger the belief in the nurse. They conducted their research using a

convenience sample of 112 nurses in New York. The majority of the nurses involved in the study worked the day shift (79%) (Esposito & Fitzpatrick, 2011).

The study found evidence to support the idea that there is a positive, strong relationship between the nurses' beliefs regarding exercise behaviors and their recommendations of regular exercise to patients. The prospect of motivating and educating nurses about the importance of physical activity could have far reaching impacts. There were several limitations to this study; the sample size was small and only from one hospital in New York. While the statistics were all significant, they are not generalizable (Esposito & Fitzpatrick, 2011).

Benefits for Employers:

Workers with fewer health issues coupled with employees who engage in health promoting behaviors, report fewer and less costly medical claims and fewer work related absences (Goetzel, 2001). Hospitals and health care systems have a compelling opportunity to improve the health of their workforce. Yet, hospitals face specific challenges. Hospital workers may feel that they possess the knowledge needed to improve their own health and don't require outside assistance (Taylor & Bithoney, 2012). In 2010, Goetzel et al., conducted a research study to quantify the direct medical and indirect (absence and productivity) cost burden of overweight and obesity in workers. Their study had two primary goals: to analyze the associations between overweight and obesity as measured using biometric BMI and self-reported measures of healthcare utilization, presenteeism (the degree to which workers are on the job but not fully functioning because of medical or psychological conditions), absenteeism (how often employers do not come to work), and to estimate the difference in employer costs between obese, overweight and normal weight employees as determined by employee healthcare utilization,

absenteeism and presenteeism. They divided participants into three groups, normal (BMI 18.0-24.9), overweight (BMI 25.0-29.9) and obese (BMI greater than 30) (Goeztel et al., 2010).

A series of General Linear Models were used to examine the relationship between BMI and outcomes, controlling for covariates. The financial outcomes of the study were medical expenditures calculated by counting the number of inpatient, outpatient and ER services utilized by the employees over a specific time period. Additionally the researchers calculated productivity losses due to absenteeism and presenteeism. This research was part of a larger research initiative of seven independent studies examining the impact of obesity. Four of the seven participating research sites contributed data to this study. Sites were included only if they had professionally collected biometric height and weight data and self-reported healthcare utilization, absenteeism and presenteeism (assessed by the use of the eight-item Work Limitations Questionnaire). Baseline data collected in late 2005 through early 2007 (prior to any worksite interventions) was provided. Between the data from the four institutions involved in this study (Emory, Rochester, University of Minnesota and University of Massachusetts) 10,000 workers with different positions were analyzed (Goeztel et al., 2010).

The researchers' data supported that obese employees reported higher levels of presenteeism as compared to normal weight people. Obese employees were more likely to be hospitalized than normal weight employees. Both overweight and obese employees were more likely to be absent from work than normal weight employees. The number of days obese employees were absent was 14.7% higher than normal weight employees. The researchers calculated that obese employees had significantly higher costs for all medical outcomes except admission. Obese employees spent \$51 more on doctor visits each year and \$70 in ER visits. Additionally, obese patients cost \$308 in higher absence rates, and \$215 more in presenteeism

than normal weight people. This overall leads to a total of \$644 in additional costs per year for the hospital by simply staffing an obese person. The researchers admitted that this cost appears to be modest; when taken into account that of the 10,000 people surveyed, 3,834 of them were obese. This calculates to \$2.47 million in added costs per year as a result of obesity within the study population (Goetzl et al., 2010).

This study's strength was the very large sample size which was diverse in nature. The researchers also used biometric measures of weight and height by a trained professional, instead of self-report. The limitations to this study were that it used self-reported absenteeism and presenteeism, which may be subject to report biases. The study also did not take into account pharmacy spending, which is increased for obese individuals due to a myriad of chronic health conditions (Goetzl et al., 2010). Critiques of Goetzl's figures state that the researchers vastly underestimated the presenteeism costs and that better figures are available as in Gate's et al. (2008).

Specifically interested in the effects of presenteeism and expanding the current state of research, in 2008, Gates, Succop, Gillespie and Sommers sought to understand how obesity specifically affected presenteeism. The goal of their research was to detect if obese people had higher levels of presenteeism than people with normal BMIs. The study was conducted in Kentucky, in eight manufacturing companies all employing from 150-350 employees. Six hundred and twenty-two employees were randomly selected from all the companies, 341 subjects consented and agreed to participate in the study. The people who participated all had varying job titles, ranging from laborer to management (Gates, Succop, Gillespie & Sommers, 2008).

Subjects completed an investigator-developed employment survey and the Workplace Limitations Questionnaire (WLQ). The questionnaires discovered the degree to which health problems interfered with the respondent's ability to perform job activities over the previous two weeks. The WLQ was designed to assess a person's time demands, physical demands, mental or interpersonal demands and output demands. The WLQ allows for the calculation of a composite index score, reflecting the overall percent productivity lost due to health limitations, relative to a healthy worker. Along with the two questionnaires, the subjects provided complete information regarding their race, gender, age, job and absences. Nurses accurately measured height and body weight of all participants (Gates, Succop, Gillespie & Sommers, 2008).

The workers were grouped into four categories, based upon their BMIs: underweight and normal weight (BMI of under 25), overweight and mildly obese (BMI of 25-29.9), moderately or extremely obese (BMI greater than 35). The worker presenteeism between the four WLQ subscales and percent productivity loss was calculated using analyses of variance (ANOVA). Annual costs to productivity were then calculated by multiplying the percent of productivity loss multiplied by the mean hourly wage of a 40 hour workweek, over 50 weeks (Gates, Succop, Gillespie & Sommers, 2008).

The majority of subjects were white (91.5%) and were overweight or obese; only one-quarter (23.2%) had a BMI of 25 or less. Forty-one percent of the respondents were overweight, 23.2% were obese and 12.6% were moderately or extremely obese. The normal weighted people category had the lowest percentage (7.7%) of workers who missed more than two weeks of work compared to the other weight classes. The obese groups had the highest percentages of workers who missed more than two weeks of work (16.5% and 11.6% respectively). The results indicated that those with a BMI of 35 or greater experienced significantly more difficulty completing work

demands on time than participants in all other BMI groups. The moderately or extremely obese group had the greatest loss of productivity; they had a mean of 4.16% compared with the mean of 2.98%. The average wage was \$21.44 per hour. The moderately or extremely obese worker had an annual wasted cost of \$1783.81 in presenteeism, while all other weight groups had an estimated presenteeism cost of \$1575.41; this was \$506 less than the moderately obese worker (Gates, Succop, Gillespie & Sommers, 2008).

The study supports the idea that weight had significant effects on presenteeism. For an organization with only 100 workers, this reflected an annual cost of \$6,376 to the organization. This suggests that employers should consider implementing interventions to improve the health and the weight of their employees simply for decreased presenteeism. Without factoring in possible reductions in health-care costs, insurance plans and absenteeism, modest weight loss could result in hundreds of dollars in improved productivity costs per worker per year (Gates, Succop, Gillespie & Sommers, 2008).

Limitations to this study are related to its sample population. The researchers only included factory workers, and therefore, the research may not translate to other occupations. There is a possibility that the research and statistics would be different if it was conducted on health care providers. Other limitations included the small population size and that all the participants were from the same state.

Employer Beliefs of Health Programs

In 2007, May and Buckman conducted qualitative research in regards to the role of attitudes and practices related to obesity treatment and insurance in organizations. May and Buckman's goal was to discover if there were any overarching themes between professional

organizations in their views regarding the treatment of obesity. May and Buckman created three focus groups from The Disease Management Association of America (DMAA) leadership forum in San Diego. The DMAA is a voluntary membership organization that represents all aspects of the disease management community. They conducted three, 90 minute focus groups, which included 12 participants representing in part: professionals, employers and academic institutions. In addition to these focus groups, data gathered from 14 in-depth interviews with disease management organizations (DMOs) was analyzed by grouping responses by topic and objective, then determining overarching themes and patterns that frequently occurred. May and Buckman had five specific objectives addressed with every interview and focus group (May & Buckman, 2007).

The first objective was to gain insight related to employer-specific questions and concerns regarding obesity. The majority of employers failed to recognize the health risks and costs associated with obesity and its comorbidities. Furthermore, most employers refused to take responsibility for their obese employees. The most common theme with all employers was confusion surrounding obesity management, they knew that they had to do something but did not know what. The second objective of the research was to understand what service issues were most important to the business community in the selection of obesity programs. The subjects reported they found education of diet and exercise the most important. The third objective was to research current obesity programs and the details of each. May & Buckman found that most existing programs are components of programs that manage other diseases such as smoking cessation. Participants noted that behavioral modification models, which often succeed when applied to lowering obesity, seemed inappropriate in the traditional medical setting. The fourth objective of the research was to understand how industry identifies obese individuals. The

researchers found that because most personal health data is self-reported, individuals tend to underestimate their weight by as little as a few pounds to as much as 100 pounds. The employers pointed out that there is a code for obesity in most health information technology systems, but medical doctors rarely use it. The fifth and final objective was to ask participants to describe the ideal program for management of obesity. The subjects stated that the program had to be highly flexible and adaptable to a wide variety of needs and circumstances (May & Buckman, 2007).

Employee participants suggested that obesity should be considered analogous to alcohol and drug use in terms of the active campaigns to decrease the probability of each. The authors cited a number of commonalities between alcoholism and obesity, including a reluctance to talk about the disease as well as denial, dishonesty and a tendency to underestimate its severity. The researchers concluded by emphasizing the consensus that the majority of the subjects agreed on the importance of increasing health promotion within organizations. The researchers also concluded that more work needs to be done surrounding effective treatment modalities and the promotion of them (May & Buckman, 2007).

The limitations to this study are in relation to its methodology. The researchers did not include any methods of data analysis or the reasons that they believed the data to be noteworthy. Also, the subject selection was very vague, there were no clear explanations of how the focus groups were chosen or why the 12 other participants were selected for interviews.

Data and research to assert that health promotion programs are financially beneficial to an organization is difficult to ascertain (Colombi & Wood, 2011). Several organizations have come up with their own in-house methods to measure the effectiveness of their programs. Many institutions use anecdotal evidence to support the effectiveness and justify the costs of the

wellness programs (Greene, 2011). In 2007, Mills, Kessler, Cooper and Sullivan sought to evaluate the impact of a workplace health promotion program on employee health risks and work productivity. They performed a quasi-experimental 12 month pre/post intervention control study on 618 full-time employees from manufacturing, home care and sales. The researchers compiled a 1,679 member control group, recruited using a convenience sample (Mills, Kessler, Cooper & Sullivan, 2007).

Both groups were given a baseline survey which included a Health Risk Assessment (HRA) (a cumulative count of health risk factors), the World Health Organization's Health and Work Performance Questionnaire (WHO-HPQ) (measured work absenteeism) and a work performance questionnaire. The intervention group received a personalized health and well-being report that gave them a wellness score, information and advice tailored towards his or her readiness to change health-related behavior. The report highlighted health areas in need of work and practical suggestions for achieving the recommended changes. The intervention group was also given unlimited access to motivational and informational online programs. They received tailored emails every two weeks on personal wellness topics that were relevant to them. Finally they received four letters in the mail based upon the four most prevalent health risks of the entire population: the first was stress, second was sleep, third was nutritional and fourth was physical activity. Individuals from the control group received none of these interventions (Mills, Kessler, Cooper & Sullivan, 2007).

Twelve months later, the researchers administered a post-test to both groups. The researchers made weighting adjustments to account for the baseline differences between the two groups. Improvements in all three outcomes were significantly greater in the intervention group in comparison to the control group in a regression analysis. They found a greater reduction in

risk factors, less absenteeism, and greater work performance in the intervention group (Mills, Kessler, Cooper & Sullivan, 2007).

The researchers concluded that the cost of the program was approximately \$138 per employee; this cost was totally mitigated by the savings in the decreased absenteeism which was found to be \$227 per employee. Overall, Mills, Kessler, Cooper and Sullivan (2007) estimated a return of \$1,367 per year for each individual involved in the intervention group (Mills, Kessler, Cooper & Sullivan, 2007).

The strengths of this study relate to its study design. It accurately measured the effectiveness of workplace interventions on a large scale. The researchers were very specific on the interventions that they used and employers could easily emulate this program. The limitations to this study involved the data analysis; the researchers results were based off of the groups self-reports and not off the specific biometric data over the 12 months. The sum of \$1,367 only measured three very specific criteria, not included were lowered health care costs, decreased presenteeism and others.

How Employers Can Motivate

As excess obesity begins to be recognized as a severe health threat, many organizations are starting to acknowledge that treatment and prevention are important first steps in increasing overall health and decreasing health care spending (May & Buckman, 2007). Employers are interested in what makes employees motivated to lose weight. Physical activity is an important component of a healthy lifestyle that improves both physical and psychological health (Hawker, 2012). In 2006, Kaewthummanukul and Brown conducted a review of eleven of the most current

research literature related to factors that influence employee participation in physical activity (Kaewthummanukul & Brown, 2006).

Research conducted highlighted the importance of exercise in health promotion, disease prevention, psychological stimulation and weight management (WHO, 2013; CDC, 2013; American Heart Association, 2012). However, few studies have examined the determinants of employee participation in the health programs and none related to nursing practice. The eleven studies included in the critical review of literature varied by sample size, sample characteristics, cognitive-psychosocial variables measured and instruments used. Most of the studies utilized different definitions and measures of physical activity. Three studies used the Leisure Time Exercise Questionnaire. One study used a 21-time index of work, leisure and sports activity. The Nurses' Health Study Questionnaire was administered in another research study. Three studies used investigator-developed instruments to measure physical activity. Another study used a physical activity index consisting of four items with five-point Likert scales. Eight of the studies identified a theory or model as an organizing framework, most commonly used was the Pender's Health Promotion Model, followed by the Theory of Planned Behavior, the Transtheoretical Model, the Health Belief Model and finally the Social Cognitive Theory (Kaewthummanukul & Brown, 2006).

Kaewthummanukul and Brown concluded that self-efficacy was the best predictor of physical activity participation among most of the reviewed studies; therefore, intervention programs need to be designed to enhance perception of physical self-efficacy. A common thread between all of the studies analyzed was the importance of employee perceived benefits of physical activity. Therefore, employers should take time to help employees understand the

benefits of the physical activity and the rationale behind the employer's plan (Kaewthummanukul & Brown, 2006).

Due to the lack of knowledge and research related to factors that increase motivation for adherence to physical therapy regimes, this 2006 analysis may have extrapolated some of its conclusions. Each of the eleven studies were so different, including the scales, participants and outcomes, that it is makes a verifiable analysis difficult. This exemplifies the need for more research.

In a qualitative study conducted by Romney, Thomson and Kash (2011), diverse population-based obesity management interventions were identified and described. Although select employers have integrated weight management programs into the workplace, evidence that demonstrates the effectiveness of the programs is very limited (Goetzel et al., 2010). Romney, Thomson and Kash specifically researched weight loss program descriptions, evidence of effectiveness, key lessons, specific tools and techniques. Furthermore, they acquired in-depth information regarding the program components that appeared to be the most successful. Additionally, they researched the implementation process, including facilitators and barriers, program costs and advice on sustainability (Romney, Thomson & Kash, 2011).

Eight employers were selected to participate in the case study; the criteria for selection was employer-sponsored programs in existence for at least one year, collected measureable outcomes (weight, BMI, participation, etc.) and programs not yet published in either peer-reviewed or lay literature. The selected organizations employed between 1,400 - 180,000 employees and were located all over the United States. The study used comprehensive semi-structured telephone interviews between September and December of 2009. Two people always

were involved with each interview, one to ask the questions and one to record. Interview notes were reviewed several times by multiple people for relevant and unique information. Themes and original information were recorded and contrasted between the eight employers (Romney, Thomson & Kash, 2011).

Results of the study indicated that all of the companies had varying degrees of weight loss programs initiated. The programs were inaugurated because senior executives from each company demonstrated commitment to health promotion and in some, extended the commitment to families. All eight companies offered health risk assessments, which at a minimum included measurement of weight, BMI, height, blood pressure, serum glucose, cholesterol and triglycerides; some offered mammograms and full blood panels. Three companies offered incentives to employees who completed the annual health risk assessments. A common theme between all the organizations was that they noticed more employee participation and satisfaction if the programs represented diverse ideas, recommendations and feedback to guide, develop, implement and evaluate the programs. The companies all used a varying range of program designs and support, including online tools, webinars, online coaching, and programs like “The Biggest Loser at Work” and “Family Fit.” Another similarity among all eight employers was the use of workout facilities, either by having an on-site gym or subsidized memberships to off-site facilities. Every company used an incentive, whether it was financial and/or nonmonetary (pedometers, gym bags, water bottles etc.) and the magnitude of the monetary incentives ranged from \$25 to over \$1000 per year. The companies estimated that between 45-60% of employees participated in the incentive programs. Several innovative interventions were reported, for example, one company designed a weight loss program that focused on behavior change by

empowering participants to make and keep daily promises regarding exercise and eating behaviors (Romney, Thomson & Kash, 2011).

All of the companies monitored success differently and had different health promotion programs in place. While all of the employers reported that attaining quantifiable evidence of the effectiveness was nearly impossible, all reported that they believed that the benefit outweighed the cost. Two companies in the study completed internal statistical analysis of their programs and found that health care spending was eight times higher for non-participating employees than in the participating employees (Romney, Thomson & Kash, 2011).

There were several strengths and limitations to this study. The qualitative design of this research encouraged employers to describe what they felt was important in terms of their health-promotion programs from their own perception. The sample of organizations was small; yet, it was diverse and encompassed many different geographical locations and types of people. The limitation to this study was due to the nature of qualitative study, the study was subject to the biases of whoever was administering and interpreting the findings of the survey. Finally, the eight companies chosen were picked from an organization pool that subscribed to The Care Continuum Alliance, an association that encourages weight management strategies in business.

The use of Motivational Interviewing to Improve Health Status

Motivational interviewing (MI) is a directive, patient-centered counseling style that aims at assisting subjects to explore and resolve their ambivalence about behavior change (Treasure, 2004). In a 2011, Armstrong et al., conducted a systematic review and meta-analysis of randomized controlled trials that investigated the effectiveness of MI in reducing body mass, measured by change in body weight or BMI. Motivational interviewing is fundamentally

different from educational approaches in that motivation for change is elicited from individuals, rather than imparted by a health care provider (Armstrong et al., 2011).

The researchers performed searches of electronic databases including MEDLINE, EMBASE, CINAHL and Cochrane for the key terms related to obesity, overweight, motivation, interview etc. Reference lists were hand-searched to identify other potential studies; experts in the field were also contacted for further leads on research articles. Articles were then evaluated in a two-step process; first was a review of the study's abstract, if it appeared relevant, the second step included a full-text review. The initial database search yielded 3,048 citations; 3,037 were excluded due to design, population not being overweight/obese, unidentifiable outcomes, multiple interventions used and so forth. Eleven studies were deemed eligible for this 2011 meta-analysis, contributing to a total of 1,448 participants. Roughly half of the subjects underwent motivational interviewing to decrease their BMI, the other half did not (Armstrong et al., 2011).

The researchers found that a larger reduction in weight was observed when programs specifically targeted weight loss as opposed to an increase in physical health or behavior change. Motivational interviewing was found to produce a significant reduction in body weight in comparison to the programs that used other techniques such as education or self-guided programs. Of the studies reviewed, those that demonstrated the greatest amount of weight loss employed motivational interviewing as an adjunct to group-based behavioral weight-loss programs. The researchers concluded that MI may be so effective in weight loss because it is seen as a partnership between the counselor and the subject, not an expert-recipient relationship (Armstrong et al., 2011).

The limitations to this study relate to the relatively small amount of participants involved. Some of the works cited only had 50 subjects involved. Even though the researchers used the best means possible to gather studies related to this topic, there was little continuity between the eleven used. The subjects in each of the studies were not well documented and may not translate to the general public. Between the eleven studies, the clinicians using the MI could have used it differently as well. Greater research needs to be conducted specifically on the effects of MI on weight loss alone.

Nursing Implications

Nursing implications related to this review of literature relate to the emphasis of the transition between evidence based research and its implementation. Health promotion is one of the major foci of nursing. Yet, according to the research, nurses have a tendency to not promote their own health. Obesity in the nursing profession is rampant. The ramifications of obesity in nursing are multifaceted; there are implications to the individual, the patient, co-workers, taxpayers and the employer. Small improvements in health can create large benefits, both fiscally and related to overall health. Nurses strive to be effective teachers and care providers. The knowledge that personal choices and health practices negatively affect patient teaching may help motivate nurses to improve their own health statuses.

Nurses can be involved in the formation and maintenance of health promotion programs in their organizations. Knowledge of effective programs and techniques is valuable for the implementation of these campaigns. Procedures need to be tailored according to the need of the nurse, related to self-efficacy and perception of benefits. Dynamic and individualized campaigns must be used. Motivational Interviewing is important to incorporate into weight loss programs

because of its efficacy in helping participants increase their health status. Motivational interviewing can be a beneficial adjunct to behavioral obesity treatment.

Chapter III

Methodology

The purpose of this study was to ascertain the most effective interventions that employers could institute to motivate nurses to increase their physical health status, particularly in three major facets: decrease BMI, increase physical exercise and to eat healthier. By increasing the health of nurses, employers, nurses and patients would all benefit. Qualitative and quantitative data was collected in a hospital in the Northwest region of the United States.

Setting and Sample:

Data was collected from 139 nurses employed in a Sole Community Hospital located in the Northwestern United States. The hospital was a nonprofit, licensed 123-bed facility which encompassed several medical groups; providing healthcare services to an estimated 97,000 residents. Data collection occurred from May-August, 2013.

The hospital employed approximately 500 nurses in total. The hospital structure included varying units and medical group clinics. Each of the units in the hospital had a designated Nurse Leader (approximately 20) and Charge Nurse. Prior to data collection, the researcher participated in weekly meetings with the Nurse Leaders and the Vice President of Nursing to introduce the research and to inform the Leaders about the study. The researcher created a schedule in concert with the Nurse Leaders in which data collection materials would be distributed in each of their units.

Nurses were recruited to participate using a variety of different methods. Primarily, Nurse Leaders and Charge Nurses advocated for participation in the research via staff meetings and emails to the staff nurses. In addition, the researcher participated in frequent staff meetings

on several of the units to encourage involvement. Furthermore, the researcher created a flyer to stimulate participation from the nurses. Flyers were displayed on the walls of the break rooms of each unit at the hospital (see Appendix A).

Participation in the research was limited to licensed nurses. This included any Registered Nurses, Licensed Practical Nurses or Advanced Practice Nurses from all levels of management. Excluded were unlicensed healthcare personal, such as aids. Participants were required to be over the age of 18 and to speak, read and write English.

Measurement Tool:

After an exhaustive search to discover a survey tool in publication that would adequately measure the research question, the researcher designed a tool specific for this study. The tool encompassed both quantitative data and qualitative data (see Appendix B). According to HesserBiber (2010) the mixed-methods approach is believed to better aid in the understanding of research problems and often results in a synergistic effect in data interpretation.

Prior to any data collection, subjects read and signed a consent form (see Appendix C). They then completed the demographics questionnaire. Specific inquires included: gender, years as a nurse, age, height, weight, if and how much physical exercise they participated in weekly, if weight loss was a goal for them and if they thought that their diet was healthy.

Quantitative data:

The portion of the quantitative data tool was developed in the likeness of many previously published survey materials. Behavior and attitudinal information regarding each client was discerned by means of Likert Scales ranging from one to five with one signifying “most

likely” and five signifying “not likely at all”. Following the demographic portion, a case study was posed to the subjects. The vignette involved Nurse X and related the description of how, over the years, Nurse X gained weight and became less active. Nurse X subsequently decided that she/he wanted to improve her/his health status in three major facets: decrease BMI, increase physical exercise and eat healthier - more nutritional foods. The participants were asked to transpose themselves as Nurse X and rate which of the employer initiated scenarios posed to them would best motivate and gain their commitment to an increased health status (see Appendix B).

The employer proposed scenarios were created as a function of the trifecta: decreased BMI, increased physical exercise and healthier foods consumed. Two interventions in each of the aforementioned category were generated. Interventions were modeled after the research done by the World Health Organization and the Centers for Disease Control and Prevention. On a Likert Scale, participants responded to how motivated and committed they would be to each proposed intervention. Motivation was defined as: desire and willingness to change. Commitment was defined as: dedication to change. Definitions were bolded and included on the measurement tool.

Qualitative data:

Following the case study, three open ended questions were posed to the subject. The first question asked for three obstacles that had impeded her/him from optimal health. The second query asked for three incentives that employers could offer to motivate her/him to achieve better health. Finally, the subject was invited to share any thoughts she/he had after completing the research material in regards to the achievement of optimal health.

Motivational Interviewing:

Motivational Interviewing was used to help guide the design of the survey tool. The core of MI is the relationship between the researcher or the practitioner and the subject. According to MI theory, the style of interaction should be one of collaboration, evocation, and autonomy (Moyers & Rollnick, 2002). Therefore, survey materials were articulated in a way that fostered the open relationship between the researcher and the participants.

Pilot study:

Prior to any data collection involving the nurses at the Northwestern hospital, a pilot study was conducted to test the efficacy and efficiency of the survey tool and study design. The study population was six Registered Nurses working in academia. Research materials were set up in a classroom in a fashion that mimicked a break room on a hospital unit. The subjects completed the research materials and gave feedback on the format and language used in the questionnaire. Valuable insight was gathered from their feedback, revisions were made to the demographics worksheet and survey.

Data Collection:

Data collection began following the Institutional Review Board (IRB) approval. Included in the IRB proposal were the pilot study and the proposal for the actual data collection.

After the pilot study was completed, data collection commenced. The researcher adhered to the schedule created in collaboration with the Nurse Leaders. Within each nursing unit, research materials were stationed in the nurses' break room. A partition was positioned to provide privacy for the subjects. An explanation of the purpose of the study and the time

commitment necessary to complete the survey was mounted on the partition (see Appendix D). Two locked data drop boxes were situated underneath the barrier. Consent forms were colored blue and corresponded to the blue drop box; survey materials were colored white and corresponded to the white drop box. The drop boxes were labeled as well. Furthermore, on the bottom of the questionnaires subjects were cued to deposit surveys in the appropriate receptacles.

Data collection materials were on each unit for approximately seven days. The researcher dogmatically collected data over a span of four months. Two to three times a week the researcher would inspect the research materials and restock what was needed.

Confidentiality:

Those who agreed to participate were asked to read and sign a consent form before filling out the questionnaire (see Appendix C). The consent forms were collected separately from the questionnaires to avoid breach of confidentiality. The consent form affirmed that the questionnaire was strictly confidential and assured subjects that the data collected would not be personally identifiable and only the aggregate data would be reported. Furthermore, no names, identifying numbers, or addresses were collected. The participants were informed that they had the option to refuse to participate at any time during the study. The researcher provided questionnaires to the subjects in as private location as possible, away from patients or coworkers.

Data Analysis:

Triangulation refers to the use of more than one approach to the investigation of a research question in order to enhance confidence in the ensuing findings, such as quantitative and qualitative data inquiry. Since much social research is founded on the use of a single research method and as such may suffer from limitations associated with that method or from the

specific application of it, triangulation offers the prospect of enhanced confidence (Denzin, 1970).

Subjects were stratified in data analysis as a function of their Body Mass Index (BMI). For analysis, BMI was categorized according to the standard classification of normal ($BMI < 25.0 \text{ kg/m}^2$), overweight ($BMI = 25.0 \text{ kg/m}^2 - 29.9 \text{ kg/m}^2$) and obese ($BMI \geq 30.0 \text{ kg/m}^2$) (WHO, 2013).

Quantitative Data Analysis:

Quantitative data analysis was completed using the Kruskal-Wallis test. The Kruskal-Wallis test is a non-parametric test for comparing three or more conditions in a study with a wholly between-groups design (i.e. one in which each condition is performed by a separate group of participants) (Kruskal-Wallis Test, 2006). Also, descriptive statistics were used to describe the sample population.

Qualitative Data Analysis:

Descriptive phenomenology was used in qualitative data analysis. Descriptive phenomenology is used to describe the ordinary conscience experience of everyday life (Polit & Beck, 2012). The analysis comprised four steps: bracketing, intuiting, analyzing and describing. Thematic analysis of the written responses was done by the researcher, all response data were reviewed separately by a seasoned qualitative researcher consultant to ensure the reliability of the thematic analysis conducted. Patterns or themes across the data were then independently developed inductively by each reviewer. Distinct themes emerged and there was 100 percent agreement between the investigator and the consultant regarding identified themes.

Study Limitations:

The subject matter of this thesis may have limited the involvement with it. Weight and health are sensitive topics to most people. Another hindrance to people responding to the surveys was the belief that institutions will not change, which hindered participation with this survey.

Although this research encompassed many different specialties of nurses, it may not translate to the general nursing population throughout the country. The Northwestern United States does not have the culture and ethnic diversity that the rest of the country does. In addition to this, although the questionnaire and case study was created to relate to the majority of the nurses, some may not have been able to identify with the vignette involving Nurse X.

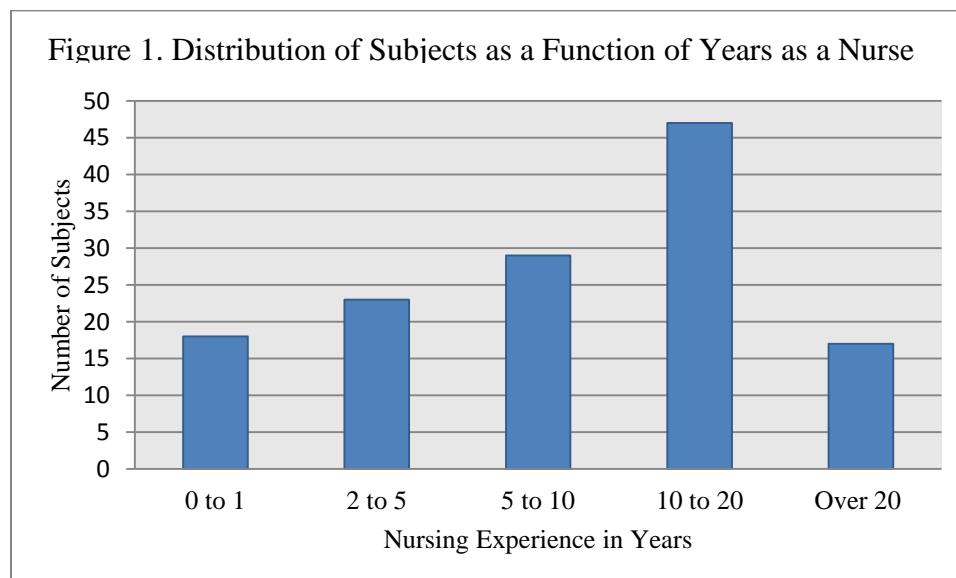
Chapter IV

Results

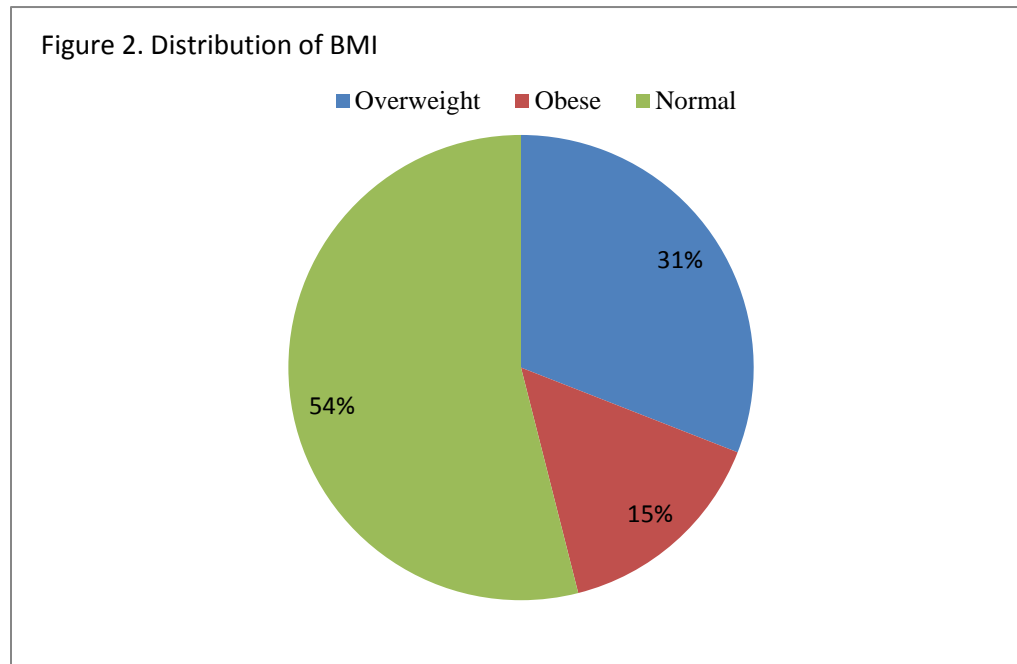
The purpose of this study was to ascertain the most effective interventions that employers could institute to motivate nurses to increase their physical health status, particularly in three major facets: decrease BMI, increase physical exercise and healthier eating. Qualitative and quantitative data from 139 subjects was collected and analyzed. All subjects were employed by a hospital in the Northwest region of the United States.

Demographic Data:

Data presented in this chapter represents results from 139 surveys collected over a five month time period. Subjects were all employed by the same healthcare facility. The majority of subjects were female (84.0%). The age of the participants ranged from 20-29 years (23.0%), 30-39 years (35.9%), 40-49 years (10.8%), 50-59 years (18.7%), to greater than 60 years (7.2%). The participants presented the following amounts of experience as nurses: 0-1 years (12.9%), 2-5 years (16.5%), 5-10 years (20.9%), 10-20 years (33.8%), and greater than 20 years of experience (12.2%) as summarized in Figure 1.



The average height of the subjects was 66.25 inches with a range of 53-74 inches. The average weight was 156.7 pounds with a range of 105-260 pounds. Approximately half (53.2%) of the subjects were of a normal BMI, 29.5% were overweight and 15.1% were obese as indicated in Figure 2.



Behavioral and Attitudinal Data

When asked if the participants engaged in deliberate physical exercise, 89.9% responded that they do engage in deliberate physical activity, 10.1% responded that they do not. Of those who responded that they purposefully engage in physical activity, slightly more than half (50.8%) responded that they exercise 3-4 days a week. When asked to describe their level of both motivation (defined as desire and willingness to change) and commitment (defined as dedication to change) to engage in deliberate physical exercise, 20.5% of subjects responded they were very motivated, 64.8% as motivated, 8.2% as undecided, 6.6% as slightly motivated, and none

described themselves as not motivated. On a similar continuum, 20.5% of subjects described themselves as very committed to engage in physical exercise, 65.5% as committed, 5.7% as undecided, and none responded that they were not committed to engage in deliberate physical activity.

Subjects were asked to describe if weight loss was a current goal for them. For 53.9% of the respondents, weight loss was a goal. Forty-six percent of the respondents indicated that weight loss was not a goal. The subjects who described weight loss as a goal were then asked to describe their motivation and commitment to lose weight. Sixteen percent of subjects responded that they were very motivated to lose weight, 72.0% as motivated, 5.3% as undecided, 5.3% as slightly motivated and 1.3% as not motivated. Similarly, when asked to describe their commitment towards weight loss, 24.0% described themselves as very committed, 56.0% as committed, 8.0% as undecided, 10.1% as slightly committed and 1.3% as not committed to losing weight.

Participants were also asked to indicate if they believed that their overall diet was healthy and nutritious. The majority (78.4%) responded that their diet was healthy and nutritious. When asked to describe their motivation and commitment towards maintaining a healthy overall diet, 41.1% of subjects described themselves as very motivated towards a healthy diet, 53.3% as motivated, 2.8% as undecided, 1.9% as slightly motivated and zero as not motivated. Similarly, 49.5% of subjects described that they were very committed to maintaining an overall healthy diet, 41.1% as committed, 3.7% as undecided, 5.6% as slightly committed and zero as not committed.

Quantitative Findings:

Table 1

Kruskal-Wallis non-parametric statistical test

Intervention	Response to intervention	H Value	Degrees of Freedom	Number	Probability	Mean Ranks		
						Overweight	Obese	Normal
Facility offering healthier food choices	Motivation	H= 7.72	df= 2	136	P= 0.0211*	58.0	87.1	70.3
	Commitment	H= 4.22	df= 2	137	P= 0.1212	65.0	85.3	66.7
Onsite workout facilities	Motivation	H= 5.35	df= 2	137	P= 0.0689	60.2	84.6	69.7
	Commitment	H= 0.80	df= 2	137	P= 0.6703	64.8	68.5	71.6
Group weight loss program	Motivation	H= 25.95	df= 2	137	P=0.0001*	63.8	109.5	60.5
	Commitment	H= 25.59	df= 2	137	P< 0.0001*	62.7	109.3	61.2
Decreased health insurance premiums	Motivation	H=29.23	df= 2	137	P< 0.0001*	80.6	101.0	53.0
	Commitment	H= 19.97	df= 2	137	P< 0.0001*	74.1	99.9	57.1
Cash for losing percentage of body fat	Motivation	H= 1.37	df= 2	137	P= 0.5143	74.6	68.8	65.8
	Commitment	H= 1.42	df= 2	137	P= 0.4916	74.1	71.4	65.3
Paid an hourly wage to work out	Motivation	H= .57	df= 2	133	P= 0.7520	70.2	68.8	64.7
	Commitment	H= .49	df= 2	133	P= 0.7827	69.9	68.7	64.9

Note. The above table indicates the quantitative results from the Kruskal-Wallis non-parametric statistical test for 139 subjects. Missing data was omitted from the analysis. H Value = The Kruskal-Wallis Test. P-value of 0.05 or less was selected as statistically significant, depicted in results using an asterisk (*).

The Likert scale used in this research was coded from one to five with one indicating very motivated or committed and five translating into not being motivated or committed. The higher the Mean-Rank, the less amiable the subject was to the specific intervention. Statistical significance was designated at 0.05.

A case study was developed by the researcher in order to assess the motivation and commitment of the subjects as a function of an intervention. The first intervention posed to the subjects from the case study was related to the likelihood of their consuming healthier food if their place of employment offered more nutritious foods. Subject's responses indicated that there was no statistical significance in their commitment to eating healthier. However, their responses in regards to motivation were statistically significant with a p-value = 0.0211. The obese group was the least motivated to change their diet if the facility they worked at offered more nutritious foods, followed by the normal weight group and the overweight group. See Table 1.

The second intervention presented to the subjects was related to their theorized usage of onsite workout facilities if made available by their employer. No results indicated statistical significance for any weight group. See Table 1.

Thirdly, nurses were asked to rate their motivation and commitment to adhering to a group weight loss program. With a p-value = 0.0001 for motivation and a p-value < 0.0001 for commitment, responses were statistically significant. The obese population had the most resistance to the idea of group weight loss programs and had the highest mean rank for this intervention out of all of the interventions, thus appearing to be the least appealing intervention for obese people. The other two groups supported the idea of group weight loss programs as evidenced by their low mean ranks. See Table 1.

The fourth intervention that the nurses responded to was their motivation and commitment to an improved health status if they received a decrease in health insurance premiums. With a p-value < 0.0001, motivation to improve health status was statistically significant. The normal weight group was the most supportive of the intervention (see Figure 3), followed by the overweight group (see Figure 4) and finally by the obese group (see Figure 5). These results were mirrored when questioned about their commitment to the same intervention with a p-value < 0.0001 with the same order. See Table 1.

The fifth intervention queried to the participants was to rate if a cash incentive for losing a percentage of body fat would gain their motivation and commitment to weight loss. Differences between the three groups were not statistically significant. See Table 1.

The sixth and final intervention presented to the subjects was if they would be motivated and committed to improve their health status if they were paid an hourly wage to work out. The

normal weight, overweight and obese groups all rated their commitment and motivation to this intervention the highest as shown in Figures 3-6. Differences between the three groups were not statistically significant.

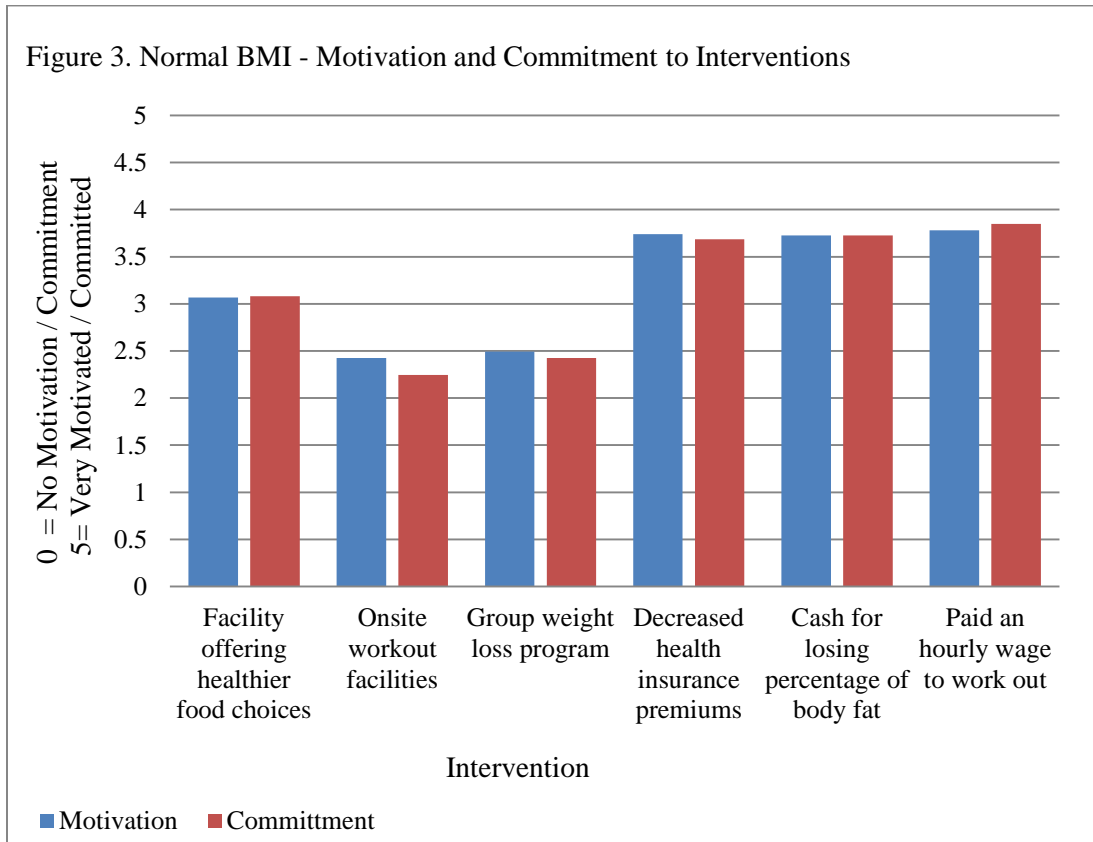


Figure three indicates the descriptive quantitative results for 75 subjects in the normal weight category. The three most effective interventions for gaining motivation and commitment were: decreased health insurance premiums, cash for losing percentage of body fat and being paid an hourly wage to work out. The least effective interventions included an onsite workout facility and a group weight loss program.

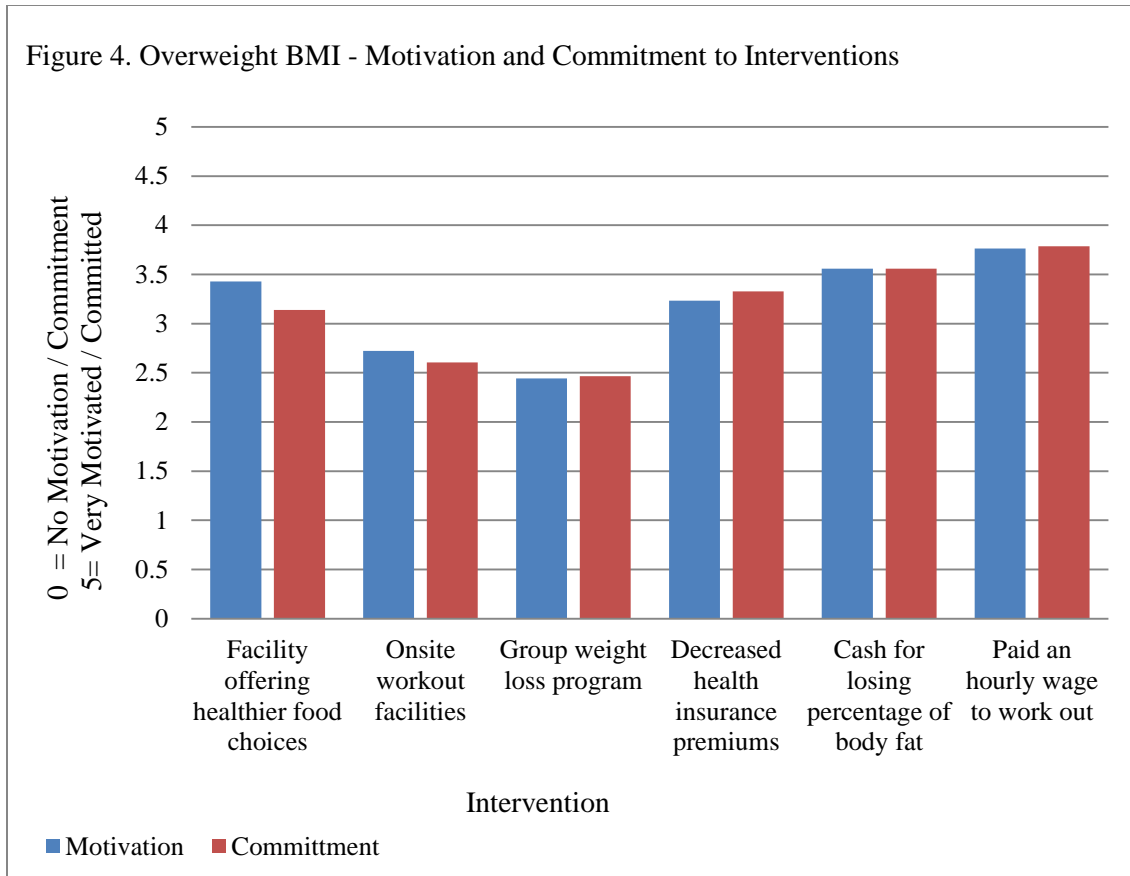


Figure four indicates the descriptive quantitative results for 43 subjects in the overweight category. The interventions that subjects indicated the most commitment and motivation to were a cash incentive for losing a percentage of body fat and being paid an hourly wage to work out. The least effective intervention was a group weight loss program.

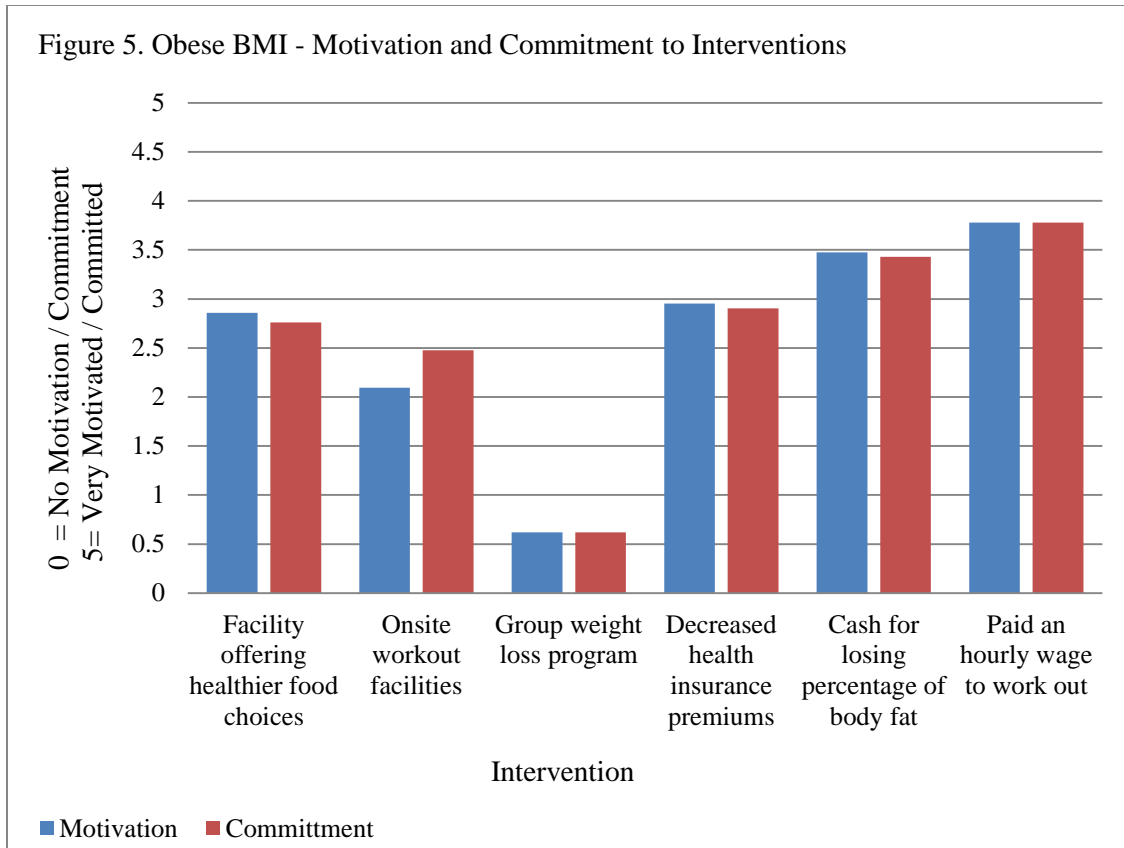


Figure five indicates the descriptive quantitative results for 21 subjects in the obese weight category. The most effective interventions were being paid an hourly wage to work out and receiving cash for losing a percentage of body fat. The least effective intervention, by a large margin, was a group weight loss program.

Qualitative Findings:

In addition to the Likert-scale survey questions related to motivation and commitment, the 139 subjects also responded to the following three open-ended questions: 1) name three factors that have impeded you from obtaining your optimal health, 2) besides financial incentives, describe three interventions that employers could provide to help you improve your health status, 3) what additional thoughts do you have about achieving optimal health after

completing this survey? Six themes emerged in response to the open-ended questions. These themes included: lack of time, twelve hour shifts affecting the quality of their health, the physical demands of nursing impeding their optimal health, the lack of a supportive work environment, employers only caring about the bottom line, personal accountability for less than optimal health, and weight as a benefit to nursing.

Theme I: Lack of Time

Nurses described a lack of time both on the job and at home as barriers to their optimal physical health status. Examples of this included: "There are only 24 hours in a day and I already have too much on my plate." This theme was further supported by responses such as, "Nurses have it hard, in the beginning we spend all of our time in school, then we get a job and spend all of our time at work." Participants described the frustration between the lack of time and the aging process, "When I am not working, I am sleeping it feels like, the older I am, the harder health gets." All age groups and experience levels were affected by the lack of time, "I cannot even find time in the day to use the bathroom, let alone take a break. I am still on orientation, so I hope it doesn't last too much longer like this or I will die." This poignant depiction of this nurse schedule was mirrored by several other subjects.

Theme II: Twelve Hour Work Schedules and Lack of Breaks Affect the Quality of Life

Thirty-eight percent of subjects described the twelve hour shifts as barriers to their optimal health. For the majority of the nurses completing this survey, alternate work hours were not available. For many, shifts ended up being longer than twelve hours. Examples of the responses included: "I hate 12 hour shifts. I do not get a choice of the shift length at this hospital." Furthermore, "12 hour shifts ruin the whole day. If I have the next day off, I feel like I

have to use it to recuperate.” Commonly, subjects described the toll of the shift leading to the dysfunction of their bodies, “after a 12 hour shift my body is broken.” Subjects recommended that their employer cease the twelve hour shifts or make them optional.

Another major aspect to this theme was related to their contractual break allowance. At this hospital, nurses are allowed two, fifteen minute breaks and a thirty minute lunch. Nurses overwhelmingly described that breaks were not restful, but, in fact were just an opportunity to catch up on tasks. Subjects also portrayed break rooms as a continuation of the nurses' station in that they cannot truly escape their job. Examples of this included: “Break rooms are not tranquil at all, ours is just as noisy as in the nurses' station.” Another subject depicted that a room with noisy pumps and machines is more soothing than the nurses break room, “I think that my patient's room in the ICU is more restful than our break room.” A veteran nurse, of greater than 20 years, commented, “I understand that we need to have the call light in the break room but instead of being able to take a break, I am always scared that it is my patient whose light is on.” The dichotomy between patient safety and the health of the nurse was a common thread woven into this theme.

Theme III: Physical Demands of Nursing

Respondents described the emotional and physical demands of the nursing profession. Examples of this included: “I give everything to my patients, by the time that I can go home, I am mentally and physically drained.” Subjects also described the physical pain that nursing caused them, “my feet kill me all day, every day.” Another subject responded that, “my joints are sore and my back is injured from all the lifting we do at the hospital.” Many nurses also recommended that institutions help aid nurses to mitigate physical stress and injury by

implementing interventions such as cost-free orthotics, more patients lifting apparatuses to protect their backs and yoga in the break rooms.

Theme IV: Lack of a Supportive Work Environment

Forty-two percent of nurses commented on what they believed was both a lack of support from their employer as well as employer created obstacles to optimal health. The lack of support included the perception of a lack of health promoting resources available for them to utilize. Examples of this theme included: "Our hospital owns a gym but we as hospital employees do not get a substantial discount [on memberships] at the gym." One individual explained that, "when I first started working here, about ten years ago, we had health screenings and wellness programs... now there is nothing." Several nurses responded that employers saw nurses as commodities, not people, "hospitals in general only care about the bottom line, they do not see the benefit of prevention." Nurses reported the hypocrisy of teaching patients about prevention and health promotion when the institution that they work for does not champion or sponsor employee health.

In addition to the idea that employers do not do enough to support the health of employees, subjects described feeling as if there were barriers to obtaining optimal health within the hospital setting. For example, the cafeteria does not accommodate the night shift workers or offer reasonably-priced healthy meals. Examples include: "I work nights, if I do not bring my own lunch and dinner, the only thing that I can get to eat is out of a vending machine." Financial barriers to a nutritious diet included, "healthy foods are outrageously priced," Eleven subjects illustrated a frustration with either coworkers or policies surrounding meal times. An example of this sentiment was, "when, or if I get a dinner, I feel like I have to rush because the nurse

covering my patients also has to eat. I usually do not take a dinner.” The nurses described the difficulty in providing excellent patient care when they do not have time to eat or the only onsite option is eating unhealthy foods.

Theme V: Personal Accountability

Subjects acknowledged their own roles in obtaining and maintaining optimal health. Respondents described either not caring about health, committing sabotaging behaviors, or poor self-control. Nurses used eating to mitigate hard days at work, “I comfort myself with food.” Seven subjects in the obese group responded that they just do not care enough to exercise. A reoccurring response (22%) was, “I am lazy.” An obese nurse responded that, “I am apathetic to being a bit overweight.” The idea of being apathetic to health was also evident in the response, “I love food, wine and cigarettes.” One participant specified that, “I used to refuse to work out because I felt like I was being told to, now I want to get myself into a workout regimen but just cannot seem to find the motivation.” Several nurses indicated that they could not find the motivation to improve their health.

Theme VI: Being Overweight is a Benefit to the Nursing Profession

As in the quantitative findings, qualitative findings were segmented into three groups as a function of BMI (normal, overweight and obese). No significant qualitative differences were found between the overweight and the normal weight group. However, responses from the obese group were thematically distinctive when compared to the overweight BMI and the normal BMI groups. Several nurses within the obese category responded that being overweight helped them to be better nurses. They responded similarly to the statement, “my weight doesn’t affect my nursing, I am healthy,” and the idea that, “if I did not have some extra weight, I could never do

this job.” Responses such as this were in direct contradiction to the responses from the normal weighted group, who stated that obese nurses do not provide as satisfactory of care to patients as a result of their weight. Normal weight nurses described obesity being a problem in nursing. Subjects described a frustration with the lack of motivation that they perceived in overweight nurses, “The heavy nurses have no idea how much their weight affects my job. I feel like I have to work harder to compensate for their laziness at times.” Similarly, a nurse of over ten years who had of a normal BMI described the transition that she has perceived in the increasing obesity in new nurses, “I see far more overweight nurses now than I have ever, education about personal fitness has got to begin in nursing school.” Subjects who commented on overweight nurses being an issue to the profession sighted: laziness, physical impairments due to body size and poor role modeling as some of the major concerns.

In addition to nurses feeling that being overweight did not interfere with their ability to deliver effective patient care, several respondents noted that they felt as if being obese was important for communication and the nursing process. One nurse with over twenty years of experience indicated that, “I think that having a few extra pounds makes me more approachable than the ‘skinny nurses’.” Commonly, nurses explained that being overweight was a bonus and almost a necessity to provide exceptional nursing care, “In my opinion, chubby nurses make better nurses, they are more approachable. On [my] floor, the fat nurses are the best nurses.” A morbidly obese nurse responded that, “My weight doesn’t affect my nursing, I am healthy.” Four other obese nurses, equating to 24.0% of the respondents in the obese category, responded that they believed they were healthy.

To further distinguish this category of nurses, the obese nurses were the only ones to respond by stating that weight and health were none of their employer’s concern. This was

supported by the statement, "My weight is my issue, not any business of my employer – or some college kid. If I wanted help on my weight I would just get it. These are personal questions!"

One subject responded to the research materials with profanity, stating that body weight and health does not matter to the employer and to the nursing skills. Furthermore, the obese group was the only group to respond with profanity and expletives.

Chapter V

Discussion

The purpose of this study was to ascertain the most effective interventions that employers could institute to motivate nurses to increase their physical health status, particularly in three major facets: decrease BMI, increase physical exercise and healthier eating. The research included 139 nurses in the Northwestern region of the United States. The results of this study indicated that there were statistical differences in motivation and commitment as a function of the type of intervention presented as indicated by p-values of less than of 0.05. Results were segmented into three groups – normal BMI, overweight BMI and obese BMI. Qualitative differences between the three groups emerged and themes were generated.

If a nursing employer was to institute a health promotion intervention, this research would help to guide them to design the most effective strategies. The ways that this study could guide an administration are to supply the most effective interventions as indicated by self-reported levels of commitment and motivation to the different interventions. In addition, to help employers focus their attention on a specific weight group (i.e. overweight). The most potentially effective interventions for all three weight groups were related to financial incentives; this included a decrease in insurance premiums, a cash incentive for a percentage of weight loss as well as paid time to work out. This is believed to be related to the financial incentive related to each and the tangible reward for a health improvement. These results were to be expected as indicated in the research of Romney, Thomson & Kash, (2011), who found that financial incentives were the most motivating intervention that employers could institute. The difficulty in applying these research results relates to implementation of these seemingly expensive interventions and gaining support of administrators in the workplace.

The desire for a monetary incentive could be related to the lack of finances that some subjects described. According to the Vice President of Nursing, nurses included in this study begin earning \$25.00 per hour as Registered Nurses. Responses to the questionnaire indicated that this was a modest amount of money to be paid; they also illustrated it as a hindrance to be able to provide for their families, afford childcare, pay off student loans or to have any excess money. It is unclear how much of a financial incentive would be necessary to motivate nurses to improve their health status.

If an employer was to design health promoting interventions for only one weight group, this research suggests that they should emphasize resources on the overweight group. The normal weight group, on the whole, had been able to manage their weight and their health satisfactorily. The overweight group was the most motivated and committed towards the interventions proposed in the case study of this research.

If these results were used to generalize to the total population of nurses at this facility, 46% of the nurses would meet the criteria of an overweight or obese BMI. The facility employed approximately 500 nurses within all the units and clinics. Modest estimates of the costs related to staffing overweight and obese nurses, with the use of the equations from the research of Gates, Succop, Gillespie & Sommers (2008) and Goetzel et al. (2010) indicate that at a minimum, the institution is spending \$362,344.30 extra per year on factors such as absenteeism, presentism, increased errors, increased workers compensation claims and sick days. This is a ten year total of \$3,623,443.00. This massive sum of money could assist hospital administrators in recognizing the benefit of implementing a health promotion intervention.

The intervention that appeared to appeal the least to the subjects, in terms of motivation and commitment, was a group weight loss program. This finding was consistent for all three groups. However, the responses from the obese group of subjects in the qualitative portion of the research contradicted these findings. The obese group's most commonly suggested intervention was a group fitness program. This contradiction could possibly be attributed to the language used in the quantitative portion, research materials stated, "group weight loss program", subjects responded that, "group fitness program" as the most effective intervention for them. This subtle difference in language may have attributed to the incongruity.

As a whole, the obese group of subjects was less motivated and less committed to improving their health as compared to the other two groups. The obese group was the only group to respond to the research materials using profanity and expletives. The obese group also reported that they believed themselves to be healthy and that their weight was not an issue to their delivery of nursing care. These responses may be attributed to the frustration felt by the obese subjects related to their body weight. Some subjects responded with a tone of helplessness and futility. Body weight is an arduous subject for many. Obesity affects a person's life in many facets. According to the Boston Medical Center (2013), approximately 45 million Americans diet each year and spend \$33 billion on weight-loss products. The U.S. Department of Health & Human Services (2013) has discovered that diet programs, individual or commercial, medically supervised or not, have a greater than 95% failure rate in the long run.

While this research suggests the need for health promotion programs, there are a few modifications that hospital administrations could initiate that would greatly affect the health of their employees. First, the cafeteria was a major discussion point for many subjects; this included its limited hours (particularly for night shift workers) and the lack of reasonably priced healthy

items. Extending cafeteria hours would be equitable for both the hospital and the nurses and a relatively uncomplicated adjustment in that nurses would be able buy food creating a profit for the organization. Changing the prices and availability of nutritious foods is a more complicated undertaking, but is not unreasonable. Secondly, were the issues related to the subject's 12-hour shifts. An increasing amount of research is surfacing that depicts 12-hour shifts as dangerous and in some cases deadly for nurses and patients. According to Townsend and Anderson (2013), 12-hour shifts attribute to the 98,000 deaths each year in the United States as a result of medication errors. Fatigued nurses are three times more likely to make these medication errors. Townsend and Anderson also found increased amounts of employee injuries and dissatisfaction with careers with extended shifts. While 12-hour shifts simplify the scheduling process, the benefits of them do not outweigh the risks. The Joint Commission (2011) released a sentinel event alert which addressed the inherent risks of these 12-hour shifts. Hospital administration must start to consider the transition to less lengthy shifts.

Nurses are recognized as health experts. Patients look to nurses for information on health promotion and disease prevention. If a nurse is obese and does not appear to be physically healthy, the nurse loses credibility and reliability (Zapka, Lemon, Magner, & Hale, 2008). Maintenance of health is different for everyone; a healthy nurse is not simply a nurse with a normal BMI.

The American Nurses Association (ANA) launched a new resource for nurses which includes a new definition of a healthy nurse that can help guide programs and outcomes for employers and administration:

one who actively focuses on creating and maintaining a balance and synergy of physical, intellectual, emotional, social and spiritual health, safety and wellness - both personally

and professionally. A healthy nurse lives life to the fullest capacity across the wellness-illness continuum. This allows nurses to be stronger role models, advocates, and educators for themselves, within their families, communities, and work environments, and ultimately for their patients. Nurses are 3.1 million strong and the most trusted profession, and have the power to make a difference! By choosing nutritious foods and an active lifestyle, managing stress, living tobacco-free, getting preventive immunizations and screenings, and choosing protective measures such as wearing sunscreen and bicycle helmets, nurses can set an example on how to be healthy. (ANA, 2013, Para. 1).

Registered Nurses (RNs) play a critical role in health care delivery. Health care demand is growing at an unprecedented pace creating a RN deficit. The deficit is expected to intensify as Baby Boomers age and the need for health care grows (Juraschek, Zhang, Ranganathan, & Lin, 2012). The deficit is related to many factors: student nurse enrollment is not substantial enough to meet the demand, shortage of nursing school faculty, average age of RN is climbing (44.5 years), more than 50% of the nursing workforce is close to retirement, aging general population with higher levels of chronic issues, insufficient staffing leading to decreased retention, high nurse turnover and vacancy rates (American Association of Colleges of Nursing, 2012). Therefore, the retention of current nurses becomes paramount (Juraschek, Zhang, Ranganathan, & Lin, 2012).

Healthcare and health promotion programs in the United States are going through many vicissitudes. On the surface, this shift will seemingly cost the country an exorbitant amount of capital; the same can be said for implementing health promotion programs in the workforce. Researchers and analysts have found that with an emphasis on health promotion and disease prevention, money is saved and quality of life is improved. Effective strategies through evidenced based research need to be championed and disseminated to employers to assist them in choosing and advocating health promotion programs.

Employers, patients and nurses can all benefit from improving nurses' health statuses. With this research, institutions who desire to institute a health promotion campaign can have guidance in adopting the most promising interventions to implement within their facility. Furthermore, organizations now have data to support targeting the overweight group as compared to the obese group due to the increased levels of motivation and commitment in most of the interventions. As a country, the pervasive paradigm of healthcare is patterned in an acute care model and not a health promotion model. While there is a shift in policies and spending to promote health and wellness, this transition is slow and not without debate. Health promotion strategies must be fiscally beneficial in order for them to succeed.

This research had many strengths. The sample population was large with 139 subjects; the population also encompassed many different nursing professions. The use of both quantitative and qualitative gave strength to the results with triangulation. Due to the sensitive nature of the topic, the lengths that the researcher went to maintain confidentiality improved the fidelity of the responses. Furthermore, by conducting the pilot study the quality of the survey materials improved the reliability and efficacy. Moreover, there is a drastic lack of research related to the subject of the health of nurses. As the nursing shortage in the country becomes increasingly critical, employers must help to retain nurses and support their health.

The research's weakness revolved around the sample population. The research may only be representative to the Northwestern United States. The population sampled was not ethnically homogenous. Moreover, the study utilized self-reported biometric data, more accurate measurements of height and weight would have benefited the study. According to (Yaemsiri, Slining & Agarwal, 2011), nurses commonly underreport their biometric data. Furthermore, the majority of nurses surveyed worked in an acute care setting and a primary care setting; a large

portion of nurses work outside of these venues. Although confidentiality was of the utmost importance, subjects may have feared retribution from their employer for their honesty. A final weakness to this research was that all of the subjects had the same overarching employer.

Recommendations for Future Research

More research needs to be conducted related to this subject. Specifically, research needs to focus on a specific dollar amount necessary to motivate nurses to improve their health. This dollar amount would guide employers to make fiscal decisions. Furthermore, future studies are needed to determine if these results are representative of all nurses; this would include nurses from other states and who worked for different employers. Finally, research must be conducted to test the efficacy of these interventions once implemented.

Findings through the Lens of Motivational Interviewing Theory

The strong emotional response reported by the obese subjects could be indicative of an assumption that the researcher was an expert in this field. Motivational Interviewing's foundation is based on the relationship and partnership created between the provider and the client. This relationship is the primary tool in creating change. Motivational interviewing is fundamentally different from educational approaches in that motivation for change is elicited from individuals, rather than imparted by a health care provider (Armstrong et al., 2011).

The findings within the obese group may have been attributed to their belief that the researcher was coercing them to change. According to the framework of Motivational Interviewing, the client may adopt the opposite stance, arguing against the need for change, thus increasing their "resistance" to the change (Söderlund, 2010).

Since no interpersonal communication was established, the methodology of MI was not a possibility. Although Motivational Interviewing was used in the development of the tool, subjects became defensive in responding to it. This raises the awareness of the difficulty for employers to address the issue of nurses' health. Administration and hospital leaders must have demonstrated commitment and motivation towards a healthy lifestyle personally in order for the staff to 'buy into' the interventions. The health promotion interventions must be a top-down directive in that employers must lead by example; this might include eating healthy lunches in the cafeteria or visiting the nurses individually. This research through the lens of MI indicates that employers must role model the health status' that they are attempting to advocate for.

Appendix A



Hello, my name is Carey Phelan and I am a nursing student at Carroll College. The following questionnaires relate to my Carroll College Honors Thesis entitled *Motivation to Improve Nurses' Health Status*. I am conducting research to determine how employers can help motivate nurses to improve their health status. The goal of my research is to increase the understanding of what specific interventions are most conducive to improving the health of nurses. Nurses' schedules are very hectic; this survey should take no more than 15 minutes of your time and your participation would be greatly appreciated.

Appendix B

Demographics about you:

Gender (select one): Male _____ Female _____

How long have you been a nurse (select one)?

0-1 years _____ 2-5 years _____ 5-10 years _____ 10-20 years _____ >20 years _____

Age (select one): 20-29 years _____ 30-39 years _____ 40-49 years _____ 50-59 years _____ >60 years _____

What is your height? _____

What is your weight? _____

Motivation is defined: desire and willingness to change

Commitment is defined: dedication to change

1. Aside from the physical activity of your daily work routine, do you engage in deliberate physical activity/exercise (select one)?

Yes _____

No _____ (If you marked "no", skip to question #2)

A. How many times a week do you engage in deliberate physical activity/exercise (select one)?

0-1 _____ 2-3 _____ 3-4 _____ 5-6 _____ 6-7 _____

B. Using the scale below, rate your current motivation to engage in deliberate physical activity/exercise (circle one):

Very Motivated / Motivated / Undecided / Slightly Motivated / Not Motivated

C. Using the scale below, rate your current commitment to engage in deliberate physical activity/exercise (circle one)

Very Committed / Committed / Undecided / Slightly Committed / Not Committed

2. Is weight loss a current goal for you (select one)?

Yes _____

No _____ (If you marked "no", skip to question #3)

A. Using the scale below, rate your current motivation to lose weight (circle one):

Very Motivated / Motivated / Undecided / Slightly Motivated / Not Motivated

B. Using the scale below, rate your current commitment to lose weight (circle one):

Very Committed / Committed / Undecided / Slightly Committed / Not Committed

3. Do you think your overall diet is healthy and nutritious (select one)?

Yes _____

No _____ (If you marked "no", please skip to the case study on the next page)

A. Using the scale below, rate your current motivation improve your diet (circle one):

Very Motivated / Motivated / Undecided / Slightly Motivated / Not Motivated

B. Using the scale below, rate your current commitment to improve your diet (circle one):

Very Committed / Committed / Undecided / Slightly Committed / Not Committed

The following is a theoretical case study. Please read the following paragraph and answer the following scenarios as if you were Nurse X, the nurse in the case study. All responses and personal information will be completely confidential.

Case Study: Nurse X is 46 years old and has worked in a hospital or clinic for 20 years. During the last decade, Nurse X has noticed that putting on weight is much easier than it used to be and the weight is harder to lose. Currently, Nurse X is 5' 7" and weighs 193 pounds, with a Body Mass Index (BMI) of 30.2 (slightly obese). Nurse X became concerned when climbing steps caused knee pain and shortness of breath and the 12 hours shifts that were once physically easy became extremely tiring. Nurse X has decided to improve his/her health status in the following three ways: decrease BMI, to get more physical exercise and eat healthier foods.

Please circle a response to the following as if you were Nurse X, you will be asked to rank both motivation and commitment :

1. If the facility where you work offered healthier food choices, how motivated would you be to choose them?
Very Motivated / Motivated / Undecided / Slightly Motivated / Not Motivated
2. How committed would you be to eating the healthier food choices?
Very Committed / Committed / Undecided / Slightly Committed / Not Committed
3. If the facility where you work had an onsite workout facility for you to use, how motivated would you be to use it?
Very Motivated / Motivated / Undecided / Slightly Motivated / Not Motivated
4. How committed would you be to use the workout facilities?
Very Committed / Committed / Undecided / Slightly Committed / Not Committed
5. If you and your coworkers started a group weight loss program together, how motivated would you be to participate in the program?
Very Motivated / Motivated / Undecided / Slightly Motivated / Not Motivated
6. How committed would you be to participate in the program?
Very Committed / Committed / Undecided / Slightly Committed / Not Committed
7. If your work instituted a program for weight loss correlating to a decrease in health insurance premiums, how motivated would you be to lose weight?
Very Motivated / Motivated / Undecided / Slightly Motivated / Not Motivated
8. How committed would you be to losing weight to decrease health insurance premiums?
Very Committed / Committed / Undecided / Slightly Committed / Not Committed
9. If you received a cash incentive to lose a certain percent of body fat, how motivated would you be to lose weight?
Very Motivated / Motivated / Undecided / Slightly Motivated / Not Motivated
10. How committed would you be to lose the percentage of body fat for the cash incentive?
Very Committed / Committed / Undecided / Slightly Committed / Not Committed

- 11. If you got paid an hourly wage to work out, how motivated would you be to work out?
Very Motivated / Motivated / Undecided / Slightly Motivated / Not Motivated
- 12. How committed would you be to work out if you were paid your hourly wage?
Very Committed / Committed / Undecided / Slightly Committed / Not Committed

Open ended questions – Please respond to the next two questions in a few short sentences in the lines provided.

Name three factors that have impeded you from obtaining your optimal health

- 1. _____
- 2. _____
- 3. _____

Besides financial incentives, describe three interventions that employers could provide to help you improve your health status.

- 1. _____
- 2. _____
- 3. _____

After completing this survey, what additional thoughts do you have about achieving optimal health?

Thank you again for your participation in this research project! Aggregate results will be made available in May, 2014 on the Carroll College nursing homepage:

<http://www.carroll.edu/academics/majors/nursing/>

Please Place in Gray Bin

Appendix C

Carroll College

Subject Consent Form for Participation in Human Research

Title of Study: Motivation to Improve Nurses' Health Status

You are being asked to participate in a research study about motivation factors to improve nurse's health. From this study, the investigator hopes to learn about the factors that help to motivate nurses to increase their own health status most effectively.

You have been selected to participate in this study because you are a Registered Nurse or Licensed Practical Nurse and are over the age of 18. If you agree to participate, you will be asked to complete several demographic questions and questionnaire regarding a theoretical case study of a nurse.

The study is expected to involve approximately 300 participants and will be conducted over a single fifteen minute break in your day. There are no risks to participating in this research. This study provides no direct benefits to participants; however, participation in this study will help to understand what best motivates nurses to improve their health status.

Your privacy is important to the research and will be protected. No identifying information will be collected. Consent forms will be collected separately from questionnaires in order to protect your anonymity. Consent forms and questionnaires will be saved in two separate files and will be locked in a locked box at the researcher's house. At the completion of the study, all data will be shredded. There are no direct or indirect costs to the participants of this research.

Further information about this research study, including the results of the study, may be obtained by contacting Carey Phelan or by e-mail: CPhelan@carroll.edu. Additional questions about the rights of human subjects can be answered by the Chairman of the Institutional Review Board, Dr. Jamie Dolan (406) 447-4969.

I, _____ (name of subject), agree to participate in this research. The investigator has thoroughly explained the nature and process of this research to me. I have read the above and understand the discomforts, inconvenience and risk of this study. I understand that I have the right to refuse to participate in this study and that refusal to participate will involve no penalty or loss of benefits to which I am otherwise entitled. I also understand that I may withdraw from the study at any time without penalty or loss of benefits to which I am otherwise entitled. To the best of my knowledge I have no physical or mental condition that would be adversely affected by my participation. I have received a copy of this consent form for my own records. I acknowledge that I am 18 years or older.

Signature of Participant

Date

Printed Name of Participant

Date

Appendix D**DIRECTIONS:**

Please take a packet from in front of the partition.

- The first page is the Consent Form (blue paper) – Please read, sign, remove the paper clip and place in the BLUE box on the LEFT when completed
- The following white pages are the Demographics and Case Study Worksheets (white papers) – Please read, select the corresponding answers and place in the GRAY Box on the RIGHT, keeping the pages stapled

The confidentiality of your responses is of the utmost importance to me as a researcher, please rest assured that no names or demographic information will be associated with your responses to the case study.

Thank you again for your participation in this research project! Aggregate results will be made available in May, 2014 on the Carroll College nursing homepage:

<http://www.carroll.edu/academics/majors/nursing/>

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