ASSESSING WEIGHT BIAS IN NURSES TOWARD OBESE PATIENTS AND ITS EFFECT ON QUALITY OF CARE

By

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To my family – without their support, this accomplishment would not be possible
To the Gator Nation

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LIST OF ABBREVIATIONS

ADL	Activities of daily living; patient care tasks that involve mouth care, peri-care, bathing, combing hair, changing gowns, changing bed sheets, setting up meal tray, feeding, and ambulation.
BMI	Body mass index; screening tool that serves as an indicator for overweight and obesity in children and adults; measured using the height (in.) and weight (lbs.).
CNA	Certified nursing assistant; individuals who have completed an accredited certification course; provide for the basic needs of patients under the supervision of a registered nurse (RN).
CNO	Chief Nursing Officer; senior nursing management position who supervises the care of all the patients at a health care facility.
ED	Emergency Department; a medical treatment facility, specializing in acute care of patients who present without prior appointment, either by their own means or by ambulance.
ICU	Intensive Care Unit; a specialized department in a hospital that provides intensive-care medicine.
IM	Intramuscular injection; certain medications require administration within the muscle for optimal absorption.
IV	Intravenous therapy; infusion of liquid substances directly into a vein.
LPN	Licensed practical nurse; individuals who have completed a State-approved training program in practical nursing and passed the National Council Licensure Examination, or NCLEX-PN; often perform a wide range of duties, including assessing and evaluating patient care, administering medications, using medical equipment to run diagnostic tests, educating family members and patients on diseases and treatments, documenting patient information and vital signs, developing nursing care plans, and much more under the direction of physicians and registered nurses.
MS	Medical/Surgical Unit; a specialized department in a hospital that provides medical and post-surgical medicine.
OB	Obstetrics Unit; a specialized department in a hospital that provides maternal and fetal medicine.

OR	Operating Room; a specialized department in a hospital that provides surgical medicine.
PCC	Patient centered care; framework used to direct nursing care that focuses on the individuality of patients.
RN	Registered nurse; individuals who have completed all of the necessary educational and licensure requirements as set forth by the Board of Nursing in each state and passed the National Council Licensure Examination, or NCLEX-RN; often perform a wide range of duties, including assessing and evaluating patient care, administering medications, using medical equipment to run diagnostic tests, educating family members and patients on diseases and treatments, documenting patient information and vital signs, developing nursing care plans, and much more.
SQ	Subcutaneous injection; certain medications require administration directly under the skin for optimal absorption.

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ASSESSING WEIGHT BIAS IN NURSES TOWARD OBESE PATIENTS AND ITS EFFECT ON QUALITY OF CARE

By

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This study used a partial mixed methods approach to assess weight bias in rural registered nurses (RN), licensed practical nurses (LPN), and certified nursing assistants (CNA) working in a rural hospital setting. The purposes of the study were to determine if weight bias existed and test its relationship with body mass index (BMI), identify causes of weight bias, and evaluate the effects bias has on quality of care.

A web-based version of the Nurses' Attitudes Toward Obesity and Obese Patients Scale (NATOOPS) was used to assess weight bias and BMI was measured using self-report height and weight. One hundred and thirteen participants were recruited by their nurse managers via email. Underweight/normal weight nurses were more likely to exhibit weight bias and indicated that obesity was controllable, but overweight/obese nurses were more likely to associate negative characteristics with obese patients. CNAs were found to exhibit more bias than RNs or LPNs.

Participants were given the opportunity to participate in a semi-structured interview to discuss factors related to weight bias and quality of care; those who chose to participate were compensated with a gift card. Thematic analysis, constant comparison

analysis and code intensiveness were used to derive themes from the interviews. Four themes emerged as causal and contributing factors to weight bias: 1) patient care tasks; 2) characteristics of the patient; 3) equipment needs; 4) nurse perception of self. Quality of care was affected by delays in treatment.

The results indicate weight bias among nurses working in rural settings, found that multiple factors in different levels of influence cause or contribute to weight bias that affect quality of care. Mixed methods demonstrated support between the quantitative and qualitative data. These findings provided backing for intervention strategies for bariatric sensitivity training using the ecological perspective to target specific issues at each level of influence.

CHAPTER 1
INTRODUCTION AND LITERATURE REVIEW

Introduction

Obesity is a label that corresponds to a range of weights that are considered above a healthy standard for a given height (Centers for Disease Control and Prevention, 2010). Individuals who are considered obese are at an increased risk for heart disease, type 2 diabetes mellitus, stroke, hypertension, dyslipidemia, cancer, and respiratory, digestive and joint problems (Centers for Disease Control and Prevention, 2010; Han, Truesdale, Cai, Juhaeri, & Stevens, 2009). There are three factors that have been rigorously researched to determine how obesity occurs. Researchers have identified an individual's caloric intake, environment, and genetics as key factors in determining obesity (Center for Disease Control and Prevention, 2011b).

Weight gain is typically a result of a caloric imbalance; the number of calories consumed is greater than the number of calories expended. This is typically the result of consuming too many calories and not engaging in enough physical activity. A calorie is a unit of energy for any given food and is the fuel that the human body requires to function (Center for Disease Control and Prevention, 2011b). Calories are equivalent regardless of their source (i.e. carbohydrates, proteins, fats). The recommended daily caloric intake for adult women should range from 1,600 to 2,400 calories per day and 2,000 to 3,000 calories per day for adult men (U.S. Department of Agriculture, 2011). An individual's daily caloric needs are dependent on their age and physical activity level. The low end of each range is for sedentary individuals; the high end of the range is for active individuals. As adults age, their daily caloric intake usually decreases due to reductions in their basal metabolic rate (U.S. Department of Agriculture, 2011).

The environment that an individual lives in can be a major contributing factor to obesity. Access to resources within a person's community, workplace, school, or home can drive their healthful decisions (Center for Disease Control and Prevention, 2011b). For example, limited access to sidewalks or bike lanes may prevent people from walking or riding their bike to school or work. Lack of affordable healthy foods, like fruits and vegetables, in grocery stores or in school cafeterias may cause people to turn to cheap low quality foods. Modifying one's environment can be difficult and may be out of the control of the individual. Seeking environmental changes in the workplace, schools, or the community may require legislation or policy change.

Genetics have been found to play a role in obesity for individual's suffering from Bardet-Biedl syndrome (multisystem degenerative disease) and Prader-Willis syndrome (characterized by hypotonia and insatiable appetite) (Center for Disease Control and Prevention, 2011b). The "thrifty genotype" hypothesis was created to help to explain the more common cases of obesity. The hypothesis states that ancestral genes that were used to survive occasional famines by storing fat are now being challenged by environments in which food is plentiful year round (Center for Disease Control and Prevention, 2011a).

The role of genetics in obesity may be more clearly seen when considering that not everyone who overeats and is physically inactive will become obese. This is displayed within people in the same culture and within families. Since October 2005, the Human Obesity Gene Map has mapped several genetic mutations and chromosomal locations of potential fat genes to solve this conundrum (Center for Disease Control and Prevention, 2011a). The melanocortin 4-receptor gene and the fat

mass and obesity-associated gene (FTO) have been found to account for 5% and 22% of obesity cases, respectively (Center for Disease Control and Prevention, 2011a).

Obesity is determined by calculating an individual's body mass index (BMI) using their height (inches) and weight (pounds) (Centers for Disease Control and Prevention, 2010). BMI is a screening tool that serves as an indicator for overweight and obesity in children and adults. A BMI of 18.5 to 24.9 is considered healthy; whereas, a BMI of 25 to 29.9 is overweight and greater than 30 is obese (Centers for Disease Control and Prevention, 2011). A common misconception about BMI is that it is a diagnostic tool. The Centers for Disease Control and Prevention (2011) recommends that individuals who have an abnormal BMI see their healthcare provider who can run additional assessments to determine if any health risks exist. It is important to note that a person may be considered to exceed a healthy weight for their height (overweight) which may be the cause of extra muscle mass, bone, water, or fat ("Obesity," 2011).

Weight bias towards obese individuals in America is prevalent. Several studies have been conducted and have found that weight bias pervades interpersonal relationships, the workplace, schools, and healthcare system leaving those who are obese with feelings of shame, guilt, and low self-esteem (Puhl & Brownell, 2003; Puhl, Moss-Racusin, Schwartz, & Brownell, 2008; Schwartz, Chambliss, Brownell, Blair, & Billington, 2003). What is most troubling is that weight bias has become a cultural norm in the United States and other countries. A study published in 2008 estimated that weight bias and discrimination has increased 66% over the past decade (Andreyeva, Puhl, & Brownell, 2008). The overwhelming negativity towards obese individuals does not come without consequence. Emerging research indicates that weight bias may

have significant effects on an obese individual's psychological and physical health which may lead to depression, low self-esteem, bad eating behaviors, poor body image, and exercise avoidance (Puhl & Heuer, 2009, 2010). Evidence also exists that weight bias may interfere with the successful implementation of obesity prevention strategies (Puhl & Heuer, 2010).

Weight bias and stigma has been heavily reported among family members and friends of obese individuals (Puhl & Brownell, 2006; Puhl, Moss-Racusin, et al., 2008). Interpersonal relationship weight bias manifests as negative and inappropriate comments towards the obese individual, typically occurring in the home (Puhl, Moss-Racusin, et al., 2008). Women who received negative comments from friends were more likely to experience depression and men who received negative remarks from their sons tended to have low self-esteem (Puhl & Brownell, 2006). There are several hypotheses that attempt to predict why close friends and family members are the most frequent weight bias offenders. One explanation suggests that weight bias is such a normative behavior that those engaging in it do not realize that it is offensive (Puhl & Brownell, 2006; Puhl, Moss-Racusin, et al., 2008). Another idea is that the high incidence of weight bias from family members may be from increased and more frequent exposure or may seem more hurtful and recalled more often (Puhl & Brownell, 2006; Puhl, Moss-Racusin, et al., 2008). Other hypotheses of weight bias among close family and friends include family members intentions to motivate an obese individual to lose weight, stress from accommodating a healthier lifestyle for them, stigma that the family or friends receive for being associated with an obese individual, and feelings of responsibility on the relatives part (Puhl, Moss-Racusin, et al., 2008).

Within the workplace, weight bias has been revealed in the hiring process, wages, promotions, and loss of job (Puhl & Brownell, 2001; Puhl & Heuer, 2009). Data collected by the National Survey of Midlife Development in the United States indicated that employment discrimination had a positive correlation with increased body size, in which women were 16% more likely to report employment discrimination than men (Puhl & Heuer, 2009; Roehling, Roehling, & Pichler, 2007). Participants of the survey reported not being hired for a job, not receiving a promotion, or being fired as frequent types of employment discrimination (Puhl, Andreyeva, & Brownell, 2008; Puhl & Heuer, 2009). Roehling, Pilcher, Oswald, and Bruce (2008) performed a meta-analysis on job-related weight bias experimental studies and found that overweight applicants and employees were viewed negatively and had more negative employment outcome evaluations by their peers. Weight bias in the workplace is further validated by employers and coworkers stereotypic attitudes' towards obese individuals which include being less conscientious, agreeable, emotionally stable, and outgoing (R. Puhl & Heuer, 2009).

Survey findings from the National Longitudinal Survey of Youth revealed that obese workers suffered wage penalties between 0.7 to 3.4% and 2.3 to 6.1% for men and women, respectively (Baum & Ford, 2004; Puhl & Heuer, 2009). This study indicated that obese individuals may be shunned from training opportunities, thus not receiving competitive wages (Baum & Ford, 2004; Puhl & Heuer, 2009). Another study conducted using the National Longitudinal Survey of Youth by Cawley (2004) found that black and white obese women experienced different wage penalties based on their level of obesity. White women who were mildly obese and severely obese saw a decrease in

wages of 5.8% and 24%, respectively as compared to normal weight white women; whereas, black women who were mildly to severely obese saw wage decreases from 3.3 to 14.6% less than their normal weight counterparts (Cawley, 2004; Puhl & Heuer, 2009).

Weight bias within school settings has been displayed by teachers, peers, and parents (Puhl & Brownell, 2001; Puhl & Heuer, 2009). Studies done in Sweden and England found that obese individuals were less likely to pursue higher education opportunities than their normal weight peers (Karnehead, Rasmussen, Hemmingsson, & Tynelius, 2006; Puhl & Heuer, 2009; Wardle, Volz, & Jarvis, 2002). Additionally, a study conducted using the National Longitudinal Study of Adolescent Health reported that obese female students were half as likely to attend college as opposed to normal weight students (Crosnoe, 2007; Puhl & Heuer, 2009). The study also found that in schools with a high prevalence of female obesity that obese female students were just as likely to attend college as normal weight female students (Crosnoe, 2007; Puhl & Heuer, 2009). These findings are also supported by a study conducted by Crosnoe and Muller (2004) in which schools with lower average body size tended to see lower academic achievement among obese students. An explanation for this phenomena is that weight bias from educators may compromise the academic performance of obese students (Puhl & Heuer, 2009).

Numerous studies have been conducted over the years assessing weight bias in the health professions. Puhl and Brownell (2001) discussed how anti-fat attitudes of healthcare workers could potentially affect the care given to obese patients and that these negative attitudes could prevent obese patients from seeking care. A study

conducted on the anti-fat attitudes and perceptions of physicians found that they characterized obese patients as having low self-esteem and being sloppy, lazy, awkward, unattractive, and noncompliant (Foster et al., 2003; Puhl & Heuer, 2009). Participants felt that obesity was a result of physical inactivity and behavioral problems. Similar findings were found in studies conducted in England, France, and Australia in which physicians believed that obesity was a result of overeating and that obese individuals lacked motivation, were physically inactive, unattractive, lazy, and self-indulgent (Bocquier et al., 2005; Campbell, Engel, Timperio, Cooper, & Crawford, 2000; Harvey & Hill, 2001; Puhl & Heuer, 2009; Thuan & Avignon, 2005). Medical students have also been found to exhibit weight bias towards obese patients. A study conducted by Wear, Aultman, and Varley (2006) surveyed 54 medical students and found that they believed severely obese patients were responsible for their condition and that they created additional work for the students. They also reported severely obese adults and overweight and obese children were the most common targets for inappropriate and derogatory remarks by attending physicians, residents, and students. Degrading comments occurred most often in the operating room and obstetrics/gynecology. Students did not feel that their derogatory comments towards obese patients were inappropriate (Puhl & Heuer, 2009; Wear, Aultman, & Varley, 2006). A study was conducted using a video tape of actors portraying normal weight and obese patients and were randomly viewed by medical students (Puhl & Heuer, 2009; Wigton & McGaghie, 2001). Participants who watched the obese patient tape anticipated that the patient would be less likely to respond to counseling or make lifestyle changes and would be noncompliant as opposed to those who watched the normal weight patient

tape. Obese patients were also described as less attractive, less compliant, and more depressed by students as compared to the normal weight patients.

Fitness professionals and dieticians are also not immune to anti-fat attitudes. A study on weight bias among exercise science students found that students believed obese people could lose weight if they wanted to and that they were lazy, unattractive, and bought a lot of junk food (Chambliss, Finley, & Blair, 2004; Puhl & Heuer, 2009). This study also stated that white, female exercise science students with a low BMI were more likely to demonstrate high implicit anti-fat bias. Fitness professionals also reported that lack of physical activity, poor eating choices, and psychological problems were factors that caused obesity (Hare, Price, Flynn, & King, 2000; Puhl & Heuer, 2009). A study performed by Berryman, Dubale, Manchester, and Mittelstaedt (2006) corroborates these findings among dietetic students (N = 76) who agreed or strongly agreed (71% to 91%) that overweight people overeat, are inactive, slow, insecure, shapeless, unattractive, have low self-esteem, endurance, and no willpower. Puhl, Wharton, and Heuer (2009) also found that dietetics students felt that obese patients were less likely to comply with treatments. The study provided students with obese and non-obese patient profiles with the same dietary and lifestyle information. Students describes obese patients as having poor diet quality and health status as compared to the non-obese patients, despite the similarities in the profiles provided, victim blaming and frustration were also demonstrated among British and Australian dieticians, respectively (Campbell & Crawford, 2000; Harvey, Summerbell, Kirk, & Hill, 2002; Puhl & Heuer, 2009).

Nurses' negative weight bias towards overweight or obese patients has been documented in the literature. Research indicates that nurses feel that obesity is a controllable factor and that obese patients lack self-control, and are overindulgent and lazy (Brown, 2006; Puhl & Brownell, 2001). Health professionals have reported feeling hostile, angry, and apathetic when caring for an obese patient (Crandall et al., 2001). Other studies have found that student and registered nurses (RN) were unlikely to associate positive characteristics with obesity (Poon & Tarrant, 2009). Undergraduate nursing students and RNs associated negative words like shapeless, slow, and unattractive with obesity (Poon & Tarrant, 2009; Teachman & Brownell, 2001). Some studies also report nurses being repulsed by obese patients and feel a sense of dread, resentment and discomfort when having to care for them (Bagley, Conklin, Isherwood, Pechiulis, & Waston, 1989; Peternelj-Taylor, 1989; Puhl & Brownell, 2001). Interestingly, older nurses were found to have more negative attitudes towards obese patients than younger nurses and nurses; as were nurses with lower BMIs (Brown, Stride, Psarou, Brewins, & Thompson, 2007; Puhl & Brownell, 2001).

Research Problem

The prevalence of obesity (BMI ≥ 30) in the United States continues to be a major health problem despite the preventative actions that have taken place in the last 20 years (Center for Disease Control and Prevention, 2012b). In 2010, twelve states had an obesity prevalence of 30% or more which shows a marked increase from 2009 in which nine states had obesity rates of 30% or more (Center for Disease Control and Prevention, 2012b). The South accounts for the highest obesity prevalence (29.4%) followed by the Midwest (28.7%), Northeast (24.9%) and the West (24.1%) (Center for Disease Control and Prevention, 2012b).

As obesity rates continue to climb, so does the provision and acquisition of healthcare for medical problems associated with unhealthy weight. The American healthcare system is being inundated with patients seeking treatment for obesity-related health problems that include heart disease, type 2 diabetes mellitus, stroke, hypertension, dyslipidemia, cancer, and respiratory, digestive and joint problems (Han et al., 2009). An analysis conducted by the Behan and Cox (2010) from the Society of Actuaries, estimated that the yearly obesity-related healthcare cost is $270 billion in the United States. The analysis also demonstrated that increases in healthcare cost positively correlated with increased BMI: $72 billion for overweight and $198 billion for obesity (Behan & Cox, 2010).

Hospitalizations for obesity-related chronic diseases are common and place an increased demand on nurses (Bertakis & Azari, 2005). During hospitalizations, nurses deliver direct patient care; therefore, they have the greatest amount of contacts with overweight and obese patients in inpatient settings. The threat of injury while caring for an overweight or obese patient can be stressful and has been reported as a source of negative weight bias in nurses (Brown, 2006). The medical needs of an overweight or obese patient can be physically demanding and may require lifting, turning, and mobilization which can be difficult and may threaten a nurse's health (Bagley et al., 1989). A study conducted on occupational injuries in nurses, psychiatric and home health aides found that 54% of reported workplace injuries from 1995-2004 were musculoskeletal disorders (Hoskins, 2006). Twenty-seven percent of these injuries were caused by overexertion; 67% of which were caused by lifting a patient (Hoskins, 2006).

Significance

Overweight and obese patients have been found to be regular health consumers of primary and specialty care practices (Brown, 2006). This is due to exacerbation of symptoms of chronic conditions and prescription needs (Han et al., 2009). The effects that healthcare-related weight bias has on obese patients have been demonstrated in recent studies. Research indicates that providers spend less time with obese patients during scheduled appointments and do not provide the same patient education as they do to smaller weight patients (Bertakis & Azari, 2005; Hebl & Xu, 2001). This has not gone unnoticed by obese patients, as they have described feeling disrespected when involved in such encounters. They also felt that they would not be taken seriously, believed that their health problems were blamed on their weight, and felt uncomfortable addressing their weight concerns with their provider (Amy, Aalborg, Lyons, & Keranen, 2006; Anderson & Wadden, 2004; Brown, Thompson, Tod, & Jones, 2006).

It is feared that if obese patients have negative experiences with healthcare providers they will cease treatment until their symptoms become a medical emergency (Brown, 2006). A study by Amy et al. (2006) showed a lower percentage of preventative cancer screenings among obese women despite having insurance and high access to healthcare. The findings indicate weight is a major barrier (83%) for undergoing preventative gynecological screenings for obese women; furthermore, women with the highest levels of obesity reported delaying preventative care because of their weight (68%). Explanations for their reluctance to seek care was past experiences with disrespectful treatment and negative attitudes by their provider, embarrassment over their weight, receiving unsought advice about losing weight, and not being provided with equipment to accommodate their size (Amy et al., 2006). Another study

found that obese women avoided seeking healthcare if they gained weight since their last visit, would be weighed during an appointment, had to undress in an exam room, or would receive advice to lose weight (Drury & Louis, 2002).

The negative attributions towards obesity in nurses, specifically, are cause for concern. Nurses are responsible for the care and treatment of overweight and obese patients and must provide quality and non-judgmental care as stated in the American Nurses Association (2001) *Code of Ethics for Nurses*. Therefore, from an ethical standpoint, one could say that if a nurse did display weight bias towards a patient they would have breached their code of ethics, which could be grounds for termination or loss of licensure. Nurses, particularly in an inpatient hospital setting, have the most contact with obese patients; therefore, potential interventions could be targeted at this population.

It is detrimental that obese individuals are regular consumers of the healthcare system due to the number of comorbities that are associated with being obese. Neglecting to receive routine preventative screenings can result in poor prognosis and exacerbation of symptoms. It is imperative that obese patients be treated fairly and respectfully by healthcare providers in order to reduce obesity-related mortality rates and to prevent creating a larger deficit in our strained healthcare system (Amy et al., 2006; Brown, 2006; Han et al., 2009; Puhl & Heuer, 2010).

The studies reviewed have called for the need of further evaluation of weight bias in nurses in different settings (clinics, hospitals) using validated instrumentation. This study hopes to accomplish this by using the Nurses' Attitudes Toward Obesity and

Obese Patients Scale (NATOOPS) (Watson, Oberle, & Deutscher, 2008) to assess weight bias in a population of nurses who work in a rural, inpatient hospital setting.

The instrument was originally used with RNs, but can be used in other areas of nursing per the authors. The lack of literature available that assesses weight bias in licensed practical nurses (LPN) and certified nursing assistants (CNA) should not be overlooked, because they too regularly care for overweight and obese patients in hospital settings, especially in rural areas; therefore, RNs, LPNs, and CNAs were recruited for this study.

Attribution-Value Model of Prejudice

Attribution-value model of prejudice is an ideological model of prejudice (Crandall et al., 2001). Ideology is a set of beliefs that form the psychological basis of a political, economic, or social system (Crandall et al., 2001). Attributions are causal explanations or judgments about the social world (Heider, 1958) and help people understand why certain actions cause an outcome. A person's explanations for why actions cause outcomes will elicit an emotion. The Attribution-value Model of Prejudice postulates that attitudes and prejudice towards groups are based on attributions of controllability and cultural value (Crandall et al., 2001).

Attributions can be situational or dispositional. Situational attributions are explanations about a person's behavior based on external circumstances (Weiner, Perry, & Magnusson, 1988). An obese child may not have access to healthy foods because their parents do not buy them or they may live in an unsafe neighborhood and cannot play outside. In this situation, the child cannot control their environment and will not receive the stigma that one would expect if the child chose to eat junk food over healthy food and preferred to watch TV and play video games rather than play outside.

Dispositional attributions are explanations of a person's behavior based on their personality, beliefs, attitudes, or another internal trait (Weiner et al., 1988). The same obese child may be from a culture where fatness is reveled as a sign of prosperity and health. As naïve psychologist, humans will tend to give more credence to dispositional attributions because their need for consistency (Crandall et al., 2001; Heider, 1958).

Prejudice is described as the negative emotional feelings toward members of a social group (Crandall et al., 2001). Stereotyping of groups provides attributes about the groups successes and failures. It is important to note that not all members of a group have to fit a stereotype; they can be individually excused from prejudice if the attributes do not fit (Crandall et al., 2001). Prejudice towards a group only holds members responsible for the negative attributes and not the positive ones. The perceiver does not have to figure out if they are considered ingroup or outgroup nor do they need to have experienced any previous conflict, history, or contact with the group in question (Crandall et al., 2001). Prejudice can arise from "perceptual processes based on the perceiver's beliefs about causality and personal and cultural values for traits, characteristics, and stereotypic attributes about members of a group" (Crandall et al., 2001, p. 36).

Crandall and colleagues (2001) demonstrated that prejudice can be linked to attributions of controllability. The more controllable a characteristic seems the more likely prejudice will occur towards any person or group displaying the characteristic. Prejudice typically occurs in cases of obesity because fatness is considered a controllable sin rather than an uncontrollable sickness (Weiner, 1993). Fatness is commonly attributed to a lack of willpower, gluttony, and laziness, which are

characteristics that can be changed at the will of the individual. When attributions about controllability are made moral judgments arise. These judgments rationalize that people get what they deserve when they act in a way that causes an outcome and should be treated accordingly (Cahnman, 1968; Crandall et al., 2001; Crandall & Reser, 2005; Feather, 1996; Lerner, 1980). Therefore, a fat person has chosen to overeat and be lazy and deserves the stigmatization they receive; whereas, a thin person is a hard worker and disciplined and deserves to be treated with respect.

Cultural values have also been used to understand how attributions predict prejudice. Results from a study conducted on cross-cultural approaches to attribution (Triandis, 1994) found that people belonging to individualistic countries, like the United States, were more likely to view themselves as independent of a collective body and ego driven (Crandall et al., 2001). In collectivist countries, like Mexico, individuals viewed themselves as part of the collective body and were willing to put the group's needs before their own because of the tight connectedness of its members (Crandall et al., 2001). Individualist countries emphasized personal responsibility and viewed obese people as responsible for their weight and subsequent perils (Crandall & Reser, 2005). In collectivist countries the focus was on the group so an obese person would not be considered responsible for their fatness nor would being overweight really matter (Crandall & Reser, 2005).

An interesting concept of the attribution-value theory of prejudice is that the "self" does not have special status; therefore, an individual can be prejudice towards themselves and others like them (Crandall et al., 2001). Controllability and responsibility play major roles in how the self mimics the attributions for others (Crandall

& Reser, 2005). For instance, a person may believe that obesity is controllable and feels that people are responsible for their own weight. A prejudice will occur from these attributions towards any obese individual. If the same person is also fat, they will view themselves as personally responsible for their weight and the same negative emotions will occur towards themselves. This phenomenon can be used to explain why obese people, who have negative affects towards fatness, feel depressed, shame, guilt, and have low self-esteem (Crandall et al., 2001).

Research Questions

This study seeks to provide evidence that may explain the following research questions (RQ):

RQ1: Does weight bias exist towards overweight and obese patients among RNs, LPNs, and CNAs working in a rural inpatient hospital setting?

RQ2: Is there a relationship between patient-related weight bias and BMI in RNs, LPNs, and CNAs working in a rural inpatient hospital setting?

RQ3: Is there a difference in patient-related weight bias among RNs, LPNs, and CNAs working in a rural inpatient hospital setting?

RQ4: What factors cause or contribute to weight bias in nurses?

RQ5: How do the factors that cause or contribute to weight bias in nurses affect quality of care?

RQ6: Do interview themes support RN, LPN, and CNA weight bias found in survey responses?

Organization of the Studies

A partially mixed methods sequential equal status design was used when organizing this study (Leech & Onwuegbuzie, 2009). Quantitative and qualitative

elements were conducted during two separate phases which both utilized convenience samples. The quantitative portion took place first wherein nurses completed the previously validated NATOOPS (Watson et al., 2008) and were then asked to participate in the qualitative phase of the study (interviews). After data collection and analysis for both phases was complete, the data was mixed to provide a broader understanding of weight bias in nurses working in a rural hospital setting through data triangulation. Both study phases held the same weight in terms of their significance to answering the proposed research questions.

The aim of this study is to determine if weight bias exists among nurses towards obese patients and how weight bias affects quality of nursing care. The specific purposes are to: 1) evaluate if weight bias exists among nurses in a rural inpatient hospital setting using the NATOOPS; 2) identify the factors that cause or contribute to weight bias among nurses and how care may differ for an obese patient through semi-structured interviews; 3) determine if interview themes support weight bias survey measurements. The current study will be organized into three manuscripts which will address the aforementioned purposes.

Chapter 2 will be the first manuscript. It involves the evaluation of weight bias in nurses towards obese patients in a rural inpatient hospital setting using the NATOOPS. Weight bias will be correlated with BMI through self-report height and weight. The survey was administered online in order to accommodate data collection at multiple sites and the non-traditional work hours of the participants. Two-hundred and eighty RNs, LPNs, and CNAs were recruited via email to complete the online NATOOPS by their respective nurse managers. Refer to Appendix A for the NATOOPS.

Chapter 3 will be the second manuscript. Prompts were posed to determine what factors cause or contribute to weight bias and the nurses' perception of quality of care through semi-structured interviews. Those who completed the NATOOPS had the opportunity to volunteer to participate in a 30-minute interview. Interview probes were written to elicit conversation and participants were encouraged to speak freely. Of the 113 participants, 16 completed interviews. The themes of the interviews were derived using thematic analysis, constant comparison analysis, and code intensiveness.

Chapter 4 will be the third manuscript. The quantitative (NATOOPS) and qualitative (interview) data were compared to determine if they support one another. The Ecological Model of Health Behavior (K. McLeroy, D. Bibeau, A. Steckler, & K. Glanz, 1988) was used to illustrate the multiple effects and interrelatedness of social elements in the environment. Rural areas are markedly different than their suburban and urban counterparts. They typically lack resources and are economically inferior. Research does not exist looking at weight bias among this population; therefore, little is known about the environment and its influences. By understanding these factors implications regarding weight bias can be made.

Lastly, Chapter 5 provides an overall summary of the manuscripts and a thorough discussion of the results, limitations, and implications for nurses, and recommendations for future research and practice.

Analytic Techniques

To better understand if weight bias exists among nurses in a rural inpatient hospital setting, the following statistical analyses were conducted. First, descriptive statistics determined frequencies, measures of central tendency (mean, median), and spread (standard deviation) of the surveyed population. Second, independent t-tests

assessed weight bias differences across BMI categories (underweight/normal weight, overweight/obese). Third, an ANOVA assessed differences in weight bias across professional status (RN/LPN/CNA) and demographic data. Fourth, Spearman correlations were performed to assess associations between weight bias and nurse BMI. Sixth, thematic and constant comparison analysis were performed to derive themes from the qualitative interviews and code intensiveness was done to illustrate quantitative saturation of common data across the interviews. Finally, the themes found during this analysis were compared to the survey data to determine if the qualitative data supported the quantitative data.

Delimitations

The following delimitations should be considered when interpreting results of this investigation:

- Participants of this study include RNs, LPNs, and CNAs, aged 18 and older, working in a rural inpatient hospital setting. Only nurses with at least one-year nursing experience were selected.
- A list of all eligible RNs, LPNs, and CNAs was provided by the Human Resources Department at each hospital. Managers for each nursing unit were responsible for disseminating recruitment emails to their eligible staff.
- Respondents in this study agreed to voluntarily participate and may not be representative of those who chose not to participate.

Limitations

The following limitations should be considered when interpreting results of this investigation:

- Data collected from this cross-sectional study reflects responses from participants at a specific point in time. It will not follow respondents longitudinally to view personally normative behaviors and therefore direct causation cannot be established.

- A convenience sample was chosen because the study site did not have a large number of employees. Convenience sampling limits the generalizability of the study findings to other populations including the area used in this study.

- Volunteer bias is of concern, but every effort was made to engage all nurses to participate.

- Perceptions of obesity are cultural (Crandall et al., 2001) and rural populations tend to have higher rates of obesity. Correlating weight bias in overweight or obese nurses will allow us to understand what the cultural norms are for the area.

- The lack of patient care resources and limited staffing may also affect the study. If weight bias is significant in the pilot study, there will be grounds for qualitative data collection to determine the external causes of weight bias.

Assumptions

For the purposes of this investigation, the following assumptions were made:

- Every participant had access to the Internet. The hospitals provide Internet access to nursing staff on all computers located on each nursing unit.

- The Human Resources Department provided an accurate list of eligible participants to contact. Names included on the lists may not have been removed if the participant was terminated or resigned in the last six months; therefore, the response rate may be influenced by non-receipt of survey materials.

- The nurses who participate in the study answered the survey questions honestly. The recruitment email, consent form, and email reminders assured participants of their anonymity and encouraged them to answer truthfully.

- Every participant had experience caring for an obese patient. Rural communities have higher rates of obesity; therefore, it is to be expected that participants have cared for an obese patient at some point before or during data collection.

Definition of Terms

AREA OF NURSING	Area of nursing the participant is employed. (Ex. Emergency Department, Intensive Care Unit, Medical/Surgical Unit).
BMI	Discrimination or stereotyping based on one's weight.
DEMOGRAPHICS	Gender, age, race, income, and education level.
PROFESSIONAL STATUS	Full-time, part-time, per diem, seasonal.

QUALITY OF CARE	Degree to which a patients' physical, psychosocial, and extra care needs are met (Williams, 1998).
SHIFT	Time regularly scheduled to work. (Ex. 7:00am-7:00pm).
WEIGHT BIAS	Indicator of overweight or obesity.
YEARS OF NURSING EXPERIENCE	Number of years spent working in the nursing field.

Summary

The purpose of this study is to determine if weight bias exists towards obese patients among RNs, LPNs, and CNAs in a rural hospital setting and to identify the factors that affect quality of patient care in order to create empathy training for caring for the obese patient. This chapter describes the overall focus of this research and includes a description of the research problem, purpose of the study, significance, applicable theories, research questions, statistical analyses, delimitations, limitations, assumptions, and definition of terms. Weight bias in the healthcare setting has major public health consequences. The present study provided a comprehensive description of weight bias among nurses and the factors that cause or contribute to their weight bias. The results help to provide a clearer understanding of the relationship between weight bias and BMI and will aid in the development of effective public health interventions and policies.

CHAPTER 2
ASSESSING WEIGHT BIAS IN NURSES TOWARD OBESE PATIENTS IN A RURAL POPULATION

Background

The prevalence of obesity in the United States continues to be a major health problem despite the preventative actions that have taken place in the last 20 years (Center for Disease Control and Prevention, 2012b). The highest rates of obesity in the U.S. exist in the South (29.4%) and are above the national average in rural communities where resources are sparse (Center for Disease Control and Prevention, 2011c). Incidentally, weight bias and discrimination in the United States has also increased over the past decade to a staggering 66% (Andreyeva et al., 2008). The overwhelming negativity towards obese individuals does not come without consequence. Emerging research indicates that weight bias may have significant effects on an obese individual's psychological and physical health which may lead to depression, low self-esteem, bad eating behaviors, poor body image, and exercise avoidance (Puhl & Heuer, 2009, 2010). Furthermore, evidence exists that weight bias may interfere with the successful implementation of obesity prevention strategies and treatment which is a major cause for concern (Puhl & Heuer, 2010).

As obesity rates continue to climb, so does the provision and acquisition of healthcare for medical problems associated with unhealthy weight. The inflation in obesity-related hospitalizations have placed an increased demand on nurses working in the inpatient hospital setting (Bertakis & Azari, 2005). Research on nurses' attitudes towards obese patients indicates feelings of repulsion, resentment, dread, and discomfort when having to care for them (Bagley et al., 1989; Brown, 2006; Peternelj-Taylor, 1989; Puhl & Brownell, 2001). Nurses' beliefs that obesity is controllable and

that obese patients lack self-control, and are overindulgent and lazy are not only false, but raise issues concerning patient care (Brown, 2006; Puhl & Brownell, 2001).

Misconceptions are common in relation to the causes of obesity. Over the last decade, numerous studies have shown that healthcare professionals believe that obesity is a controllable factor that is a result of overeating and physical inactivity (Berryman et al., 2006; Bocquier et al., 2005; Brown, 2006; Campbell et al., 2000; Chambliss et al., 2004; Foster et al., 2003; Hare et al., 2000; Harvey & Hill, 2001; Puhl & Brownell, 2001, 2006; Puhl & Heuer, 2009; Puhl, Moss-Racusin, et al., 2008; Thuan & Avignon, 2005; Wear, Aultman, & Varley, 2006). The irony of these findings is that obesity research has demonstrated that obesity is actually a multifactorial disease that is a result of genetics, environment, diet, and insufficient physical activity (Center for Disease Control and Prevention, 2011b; National Institutes of Health, 2012). It is concerning that health professionals with these negative attitudes may not be providing adequate or fair care (Bertakis & Azari, 2005; Hebl & Xu, 2001). Research indicates that providers spend less time with obese patients during scheduled appointments and do not provide the same patient education as they do to thinner patients (Bertakis & Azari, 2005; Hebl & Xu, 2001). Obese patients have reported feeling disrespected by their physician's actions. They also felt that they would not be taken seriously, believed that their health problems were blamed on their weight, and felt uncomfortable addressing their weight concerns with their provider (Amy et al., 2006; Anderson & Wadden, 2004; Brown et al., 2006).

It is feared that if obese patients have negative experiences with healthcare providers, they will cease treatment until their symptoms become a medical emergency

(Brown, 2006). A study conducted by Amy et al. (2006) showed a lower percentage of preventative cancer screenings among obese women despite having insurance and high access to healthcare. Weight was found to be a major barrier (83%) for undergoing preventative gynecological screenings for obese women; furthermore, women with the highest levels of obesity reported delaying preventative care because of their weight (68%). Explanations for their reluctance to seek care was past experiences with disrespectful treatment and negative attitudes by their provider, embarrassment over their weight, receiving unsought advice about losing weight, and not being provided with equipment to accommodate their size (Amy et al., 2006). Another study found that obese women avoided seeking healthcare if they gained weight since their last visit, would be weighed during an appointment, had to undress in an exam room, or would receive advice to lose weight (Drury & Louis, 2002).

The negative attributions towards obesity in nurses, specifically, are cause for concern. Nurses are responsible for the care and treatment of overweight and obese patients and must provide quality and non-judgmental care as stated in the American Nurses Association (2001) *Code of Ethics for Nurses*. Nurses, particularly in an inpatient hospital setting, have the most contact with obese patients; therefore, potential interventions could be targeted at this population. Health professionals have reported feeling hostile, angry, and apathetic when caring for an obese patient (Crandall et al., 2001). Other studies have found that student and registered nurses (RN) were unlikely to associate positive characteristics with obesity (Poon & Tarrant, 2009). Undergraduate nursing students and RNs associated negative words like shapeless, slow, and unattractive with obesity (Poon & Tarrant, 2009; Teachman & Brownell,

2001). Interestingly, older nurses were found to have more negative attitudes towards obese patients than younger nurses and nurses; as were nurses with lower BMIs (Brown et al., 2007; Puhl & Brownell, 2001).

It is detrimental that obese individuals are regular consumers of the healthcare system due to the number of comorbities that are associated with being obese. Neglecting to receive routine preventative screenings can result in poor prognosis and exacerbation of symptoms. It is imperative that obese patients be treated fairly and respectfully by healthcare providers in order to reduce obesity-related mortality rates and to prevent creating a larger deficit in our strained healthcare system (Amy et al., 2006; Brown, 2006; Han et al., 2009; Puhl & Heuer, 2010). Further evaluation of weight bias in nurses in different settings (clinics, hospitals) using validated instrumentation is necessary (Crandall et al., 2001; Watson et al., 2008). This study hopes to accomplish this by using the Nurses' Attitudes Toward Overweight and Obese Patients Scale (NATOOPS) (Watson et al., 2008) to assess weight bias in a population of nurses who work in a rural, inpatient hospital setting. The instrument was originally used with RNs, but can be used in other areas of nursing per the authors. The lack of literature available that assesses weight bias in licensed practical nurses (LPN) and certified nursing assistants (CNA) should not be overlooked because they too regularly care for overweight and obese patients in hospital settings, especially in rural areas; therefore, RNs, LPNs, and CNAs were recruited. This study seeks to answer the following research questions (RQ):

RQ1: Does weight bias exist towards overweight and obese patients among RNs, LPNs, and CNAs working in a rural inpatient hospital setting?

RQ2: Is there a relationship between patient-related weight bias and BMI in RNs, LPNs, and CNAs working in a rural inpatient hospital setting?

RQ3: Is there a difference in patient-related weight bias among RNs, LPNs, and CNAs working in a rural inpatient hospital setting?

Attribution-Value Model of Prejudice

Attribution-Value Model of Prejudice is an ideological model of prejudice (Crandall et al., 2001). Ideology is a set of beliefs that form the psychological basis of a political, economic, or social system (Crandall et al., 2001). Attributions are causal explanations or judgments about the social world (Heider, 1958) and help people understand why certain actions cause an outcome. A person's explanations for why actions cause a certain outcome elicit specific emotions. The Attribution-Value Model of Prejudice postulates that attitudes and prejudice towards groups are based on attributions of controllability and cultural value (Crandall et al., 2001).

Attributions can be situational or dispositional. Situational attributions are explanations about a person's behavior based on external circumstances (Weiner et al., 1988). An obese child may not have access to healthy foods because their parents do not buy them or they may live in an unsafe neighborhood and cannot play outside. In this situation, the child cannot control their environment and will not receive the stigma that one would expect if the child chose to eat junk food over healthy food and preferred to watch TV and play video games rather than play outside. Dispositional attributions are explanations of a person's behavior based on their personality, beliefs, attitudes, or another internal trait (Weiner et al., 1988). The same obese child may be from a culture where fatness is seen as a sign of prosperity and health. As naïve psychologist, humans will tend to give more credence to dispositional attributions because of their

need for consistency and belief that people create their own destiny (Crandall et al., 2001; Heider, 1958).

Prejudice is described as negative emotional feelings toward members of a social group (Crandall et al., 2001). Stereotyping of groups provides attributes about the groups successes and failures. It is important to note that not all members of a group have to fit a stereotype; they can be individually excused from prejudice if the attributes do not fit (Crandall et al., 2001). Prejudice towards a group only holds members responsible for the negative attributes and not the positive ones. The perceiver does not have to figure out if they are considered ingroup or outgroup nor do they need to have experienced any previous conflict, history, or contact with the group in question (Crandall et al., 2001). Prejudice can arise from "perceptual processes based on the perceiver's beliefs about causality and personal and cultural values for traits, characteristics, and stereotypic attributes about members of a group" (Crandall et al., 2001, p. 36).

Crandall and colleagues (2001) demonstrated that prejudice can be linked to attributions of controllability. The more controllable a characteristic seems the more likely prejudice will occur towards any person or group displaying that characteristic. Prejudice typically occurs in cases of obesity because fatness is considered a controllable sin rather than an uncontrollable sickness (Weiner, 1993). Fatness is commonly attributed to a lack of willpower, gluttony, and laziness, which are characteristics that can be changed at the will of the individual. When attributions about controllability are made moral judgments arise. These judgments rationalize that people get what they deserve when they act in a way that causes an outcome and should be

treated accordingly (Cahnman, 1968; Feather, 1996; Lerner, 1980). Therefore, a fat person has chosen to overeat and be lazy and deserves the stigmatization they receive; whereas, a thin person is a hard worker and disciplined and deserves to be treated with respect.

Cultural values have also been used to understand how attributions predict prejudice. Results from a study conducted on cross-cultural approaches to attribution (Triandis, 1994) found that people belonging to individualistic countries, like the United States, were more likely to view themselves as independent of a collective body and be ego driven (Crandall et al., 2001). In collectivist countries, like Mexico, individuals viewed themselves as part of the collective body and were willing to put the group's needs before their own because of the tight connectedness of its members (Crandall et al., 2001). Individualist countries emphasized personal responsibility and viewed obese people as responsible for their weight and subsequent perils (Crandall & Reser, 2005). In collectivist countries the focus was on the group so an obese person would not be considered responsible for their fatness nor would being overweight really matter (Crandall & Reser, 2005).

An interesting concept of the attribution-value model of prejudice is that the "self" does not have special status; therefore, an individual can be prejudice towards themselves and others like them (Crandall et al., 2001). Controllability and responsibility play major roles in how the self mimics the attributions for others (Crandall & Reser, 2005). For instance, a person may believe that obesity is controllable and feel that people are responsible for their own weight. A prejudice will occur from these attributions towards any obese individual. If the same person is also fat, they will view

themselves as personally responsible for their weight and the same negative emotions will occur towards themselves. This phenomenon can be used to explain why obese people, who have negative affects towards fatness, feel depressed, shame, guilt, and have low self-esteem (Crandall et al., 2001).

The Attribution-Value Model of Prejudice served as the conceptual framework for the NATOOPS (Crandall et al., 2001; Watson et al., 2008). Scaled items were based on the attribution instrument developed by Bagley et al. (1989) and other items were added in accordance with the theory and knowledge about obesity (Watson et al., 2008). Questions were created to represent attributions and values about obesity and obese patients, characteristics commonly associated with obesity, and nurses' clinical experiences associated with working with obese patients (Watson et al., 2008).

Methodology

Setting

A cross-sectional pilot study design took place at a three rural hospitals in Southwest Florida. A rural site was chosen because higher levels of obesity are associated with rural living (Center for Disease Control and Prevention, 2011c); therefore, the researcher can be sure that the nurses surveyed will have had experience caring for obese patients. According to the American Hospital Association (2012), a hospital is considered rural if it meets at least one of the following criteria: has 100 or fewer beds, 4000 or fewer admissions, or located outside a Metropolitan Statistical Area. All of the hospitals used in this study met at least one of the criteria.

Hospital #1 houses 48 inpatient beds and 109 potential participants. The population of the surrounding municipality was 7,637, which consisted of 51% male and 49% female residents (U.S. Census Bureau, 2010). The U.S. Census Bureau (2010)

reported that the population consisted of 53% whites, 25% African Americans, and 33% Hispanic or Latino.

Hospital #2 has 50 inpatient beds and 63 potential participants. The population of the surrounding area was 2,223, which consisted of 51% male and 49% female residents (U.S. Census Bureau, 2010). The U.S. Census Bureau (2010) reported that the population consisted of 70% whites, 7% African Americans, and 46% Hispanic or Latino.

Hospital #3 has 159 inpatient beds and 171 potential participants. The population of the surrounding area was 10,491, which consisted of 48% male and 52% female residents (U.S. Census Bureau, 2010). The U.S. Census Bureau (2010) reported that the population consisted of 76% whites, 15% African American, and 18% Hispanic or Latino.

Hospitals 1 and 2 have little to no specialty medical services and require that patients be transferred to nearby facilities (~20 miles) if they require care outside the scope of the hospital services. Hospital #3 is the largest of the three sites and can provide specialty care, but is still considered rural.

Nursing demographics were not provided by the participating hospitals.

Sample

A response rate of 42.9% nurses (N=113) was obtained from all participating hospitals. Respondents were predominantly female (83.2%, n=94) and ranged in age from 20 to 79 years, with an average of 47 years (SD=12.4). Respondents' races included white (72.6%, n=84), Hispanic/Latino (8.9%, n=10), black (4.4%, n=5), Asian/Pacific Islander (3.5%, n=4), other (3.5%, n=4), and Native American (0.9%, n=1). Areas of nursing included medical/surgical care (23.9%, n=27), emergency care (21.2%,

n=24), intensive care (17.7%, n=20), surgery (12.4%, n=14), obstetrics (8%, n=9), and IV therapy/other (2.7%, n=3). The majority of respondents held an associates (ASN) (43.4%, n=51) or bachelors (18.6%, n=21) degree in nursing (BSN) and the remaining had either a master's degree (MSN) (5.8%, n=6), a license in practical nursing (8.8%, n=10), or a certification in nursing assistance (3.5%, n=4). Over 86.8% (n=102) of the respondents reported caring for 1 or more obese patients on a daily basis and 68.1% (n=77) had never attended an educational program focusing on obesity. Nursing experience ranged from 5 years or less (20.4%, n=23) to more than 25 years (18.5%, n=21). However, most nurses reported having worked between 10 to 25 years (54.9%, n=62).

Instrument Selection

The NATOOPS (Appendix A) was used to determine if weight bias existed among nurses. The NATOOPS was developed and validated in 2008 by Dr. Lorraine Watson, Dr. Kathleen Oberle, and Danielle Deutscher of the University of Calgary. The study was conducted using a large cohort of RNs in Calgary (n=626). It was developed using the Attribution-Value Theory (Weiner et al., 1988) which posits that people's emotions and motivation arise from their judgment about the causes of outcomes (Crandall & Reser, 2005). Validity was determined via exploratory factor analysis. Items were included if they loaded .4 or higher allowing for stronger correlations between the item and the factor (Watson et al., 2008).

The researchers chose items they felt displayed multidimensional concepts of bias toward obesity and obese patients (Watson et al., 2008). The NATOOPS has 36 items from the following identified five factors: (1) Response to obese patients (14 items; eigenvalue 5.41; variance explained 20.82%; reliability estimate .78); (2) Characteristics

of obese individuals (9 items; eigenvalue 2.45; variance explained 9.43%; reliability estimate .45); (3) Controllable factors contributing to obesity (8 items; eigenvalue 2.20; variance explained 8.47%; reliability estimate .62); (4) Stereotypic characteristics of obese patients (2 items; eigenvalue 1.56; variance explained 6.01%; reliability estimate .79); (5) Supportive roles in caring for obese patients (3 items; eigenvalue 1.17; variance explained 4.50%; reliability estimate .58) (Watson et al., 2008). Overall internal consistency reliability of NATOOPS was measured using Cronbach's alpha (.81).

The instrument uses a 100 mm visual analogue scale (VAS) to measure responses using the anchors *seldom* to *often* or *agree* to *disagree* depending on the question. VAS was used instead of a Likert scale in order to decrease response bias and provide continuous data (Devellis, 2003). The respondent makes a mark between the response anchors on the 100 mm line that indicates how strongly they feel. Scores are determined by measuring the distance in millimeters from the left anchor to the mark. Higher scores (>50) indicate more negative attitudes. Questions were also asked in the opposite direction and scored in reverse in order to decrease response bias.

The NATOOPS was adapted into a web-based survey using Qualtrics (Qualtrics Labs Inc., 2011). The purpose of using a web-based survey was to provide convenience to the participants who work varying shifts and may not have been available during normal working hours. The survey was adapted using a sliding scale from 0-100 to mimic the VAS used in the original tool.

Procedure

The hospital Chief Executive Officer (CEO) and Chief Nursing Officer (CNO) were engaged in March 2011 and gave permission for the study to take place at Hospital #1 (n=109). The nurse managers in each hospital unit were notified of the study during a Nursing Leadership meeting in June 2011, in which the researcher attended. During that time, the researcher explained the study to the nurse managers and questions were answered. After approval from the nurse managers, the researcher obtained Institutional Review Board (IRB) approval and attended another Nursing Leadership meeting in August 2011 to inform the CNO and nurse managers that the study was approved and to discuss survey dissemination tactics and needed support. The nurse managers suggested that they send recruitment emails to their staff and that the survey link be placed on the hospital intranet for easy access. The online survey was disseminated in September 2011 and closed in January 2012. Reminder emails were sent at two-week increments from the time of the initial email until data collection ended. The director of Human Resources provided a list of the number of RNs, LPNs, and CNAs working in each unit in July 2011.

The CNO of Hospitals 2 and 3 (n=63 and n=171, respectively) was contacted in July 2011. Consent forms and supporting documents explaining the study were forwarded to the CNO in August 2011 and the study was approved. The researcher met with the CNO in September 2011 to further discuss survey dissemination tactics and needed support in which they recommended that the Director of Clinical Education be contacted to further discuss these matters. A phone meeting between the researcher and the Director of Clinical Education took place in September 2011 during which the director decided to reach out to the nurse managers of Hospital #2 and #3

during a Nursing Leadership meeting, which took place the following day. During the Nursing Leadership meeting, the Director received approval from the nurse managers and permission to email their staff the study information. The survey was also embedded in the hospital's intranet. The online survey was disseminated in September 2011 and closed in January 2012. Reminder emails were sent at two-week increments from the time of the initial email until the end of data collection. The Director of Human Resources provided a list of the number of RNs, LPNs, and CNAs working in each unit in July 2011.

Participant Recruitment

A power analysis was conducted using G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) software to establish effect size. An effect size of 0.2, alpha of 0.5, and power of 0.80 with five predictors indicated that a convenience sample of 113 RNs, LPNs, and CNAs needed to be surveyed. Three, demographically similar rural hospitals located in Southwest Florida were chosen to provide an adequate sample size. Participants had to be 18 years of age and employed full-time, part-time, or per diem (as needed) at the study sites.

The study was explained to the nursing staff in a recruitment email sent by their respective nurse manager. The email included the risks and benefits associated with participation, privacy methods, compensation, and autonomy. A secure link was provided in the email for those who were interested in participating in the study. The home page of the survey included the informed consent (Appendix B) and a check box for the participant to choose if they wished to participate. If consent was provided, participants were able to complete the NATOOPS and provide their demographic data.

Self-report height and weight were taken to measure obesity at the end of the questionnaire.

Demographic Information

Gender, age, race, employment status, education/professional level, socioeconomic status, area of nursing currently employed, years of nursing experience, work shift, attendance of an obesity-related educational program, and the prevalence of caring for an overweight or obese patient were collected for each participant.

Body Mass Index (BMI)

BMI is a screening tool that serves as an indicator for overweight and obesity in children and adults. BMI is measured using the height (in.) and weight (lbs.) of an individual. The formula for calculating BMI and BMI table can be found in Table 2-1. A BMI of 18.5 to 24.9 is considered healthy; whereas, a BMI of 25 to 29.9 is overweight and greater than 30 is obese (Centers for Disease Control and Prevention, 2010). A common misconception about BMI is that it is a diagnostic tool. The Center for Disease Control and Prevention (2011b) recommends that individuals who have an abnormal BMI see their healthcare provider who can run additional assessments to determine if any health risks exist.

Self-report height and weight was used in this study, because it is more feasible within the chosen population. With the varying shifts of nurses it would be extremely difficult to obtain direct measure heights and weights of the survey respondents. Also, direct measure heights and weights would require the participants to reveal their identity to the researcher, which they may not be comfortable doing. Free text fields at the end of the demographic data section of the survey were used to obtain height (inches) and

weight (pounds) of each participant. BMI was calculated using the Center for Disease Control and Prevention (2012a) BMI calculator.

Data Analysis

To better understand if weight bias existed among nurses in a rural inpatient hospital setting, the following statistical analyses were conducted. First, descriptive statistics determined frequencies, measures of central tendency (mean, median), and spread (standard deviation) of the surveyed population. Second, independent t-tests assessed weight bias differences across BMI categories (underweight/normal weight, overweight/obese). Third, an Analysis of Variance (ANOVA) assessed differences in weight bias across professional status (RN/LPN/CNA) and demographic data. Fourth, Spearman correlations were performed to assess associations between weight bias and nurse BMI.

Case wise deletion was used to manage missing data. SPSS 18.0 statistical software (SPSS Inc., 2009) was used to complete all analyses. Data were normalized using the square root transformation function in SPSS. Upon normalizing the data, weight bias composite scores over 7.07 were considered to be weight bias; whereas, weight bias composite scores below 7.07 were considered not weight bias.

Ethical Considerations

The study received ethics approval from the University of Florida's IRB-02 in July 2011. Revisions were made and accepted in September of 2011. Data collection began in September 2011 at both study sites. Participant IP addresses were not logged, tracked, or attached to study data to ensure anonymity.

Results

BMI calculations using the standard formula (weight (kg)/height (m2)) resulted in an underweight/normal weight group of 35 participants (31%), and an overweight/obese group of 63 participants (55.8%), with 15 missing values. Weight bias among nurses grouped by BMI was compared by independent t-test. Between BMI group comparisons on the five factors identified in the NATOOPS yielded statistically significant differences between the means of the underweight/normal weight ($t=8.556$, $df=70.680$, $p<.003$) and overweight/obese groups for Factor 3 (controllable factors contributing to obesity); wherein underweight/normal weight nurses exhibited weight bias. Overweight/obese nurses had a higher level of weight bias ($t=8.083$, $df=44.049$, $p=.286$) as compared to underweight/normal weight nurses ($t=7.8653$) for Factor 2 (characteristics of obese individuals); however, this was not statistically significant. See Table 2-2 for independent t-test results.

An ANOVA was run to determine weight bias differences between professional status (CNA, LPN, ASN, BSN, MSN). Results showed that CNAs had weight bias ($M=8.375$, $p=.138$); indicating weight bias decreased with increasing levels of education. These results, however, were not statistically significant. Refer to Table 2-3 and Table 2-4 for ANOVA results. Effect size (partial eta^2) was also determined using ANOVA in order to estimate the variability of weight bias that could be attributed to nursing professional status (Trusty, Thompson, & Petrocelli, 2004). Professional status explained 14% ($\eta 2 = .143$, $p = .138$) of variability in weight bias scores, but was insignificant. Spearman correlation was used to determine if a relationship existed between weight bias and nurse BMI. The findings indicate a weak negative correlation

between BMI and weight bias ($\rho = -0.121$, $p = .335$) such that nurses with lower BMIs had greater weight bias.

Descriptive statistics were run on a diagrammatic evaluation of body size (Appendix A). Respondents could choose more than one diagram to classify body size. Ninety-two percent of respondents correctly identified the normal weight diagram, 19% correctly identified the overweight diagram, and 96% percent correctly identified the obese diagram. The obese diagrams were commonly misinterpreted as the overweight diagram (77%). These perceptions indicate that nurses view individuals who are larger than normal weight to be obese. Overall internal consistency reliability of the NATOOPS was measured using Cronbach's alpha (.78).

Discussion

The nurses in this study exhibited weight bias. These findings are consistent with other published studies that have sought to assess weight bias among healthcare professionals, specifically nurses (Bagley et al., 1989; Brown, 2006; Crandall et al., 2001; Peternelj-Taylor, 1989; Poon & Tarrant, 2009; Puhl & Brownell, 2001; Schwartz et al., 2003; Teachman & Brownell, 2001; Watson et al., 2008). The findings in this study replicate and expand this prior research by using a rural sample of nurses, including LPNs and CNAs, as well as measuring the associations between weight bias and BMI.

Results indicate that underweight/normal weight nurses were more likely to exhibit weight bias towards obese patients, particularly in regards to obesity being controllable. These findings are significant because nurses' perceptions of the etiology of obesity are often misunderstood and a frequent cause of weight bias making increasing knowledge a key intervention strategy (Berryman et al., 2006; Bocquier et al., 2005; Brown, 2006; Campbell et al., 2000; Chambliss et al., 2004; Foster et al., 2003; Hare et al., 2000;

Harvey & Hill, 2001; Puhl & Brownell, 2001, 2006; Puhl & Heuer, 2009; Puhl, Moss-Racusin, et al., 2008; Thuan & Avignon, 2005; Wear, Aultman, & Varley, 2006). Strangely, nurses with higher levels of education (BSN and MSN) were more likely to identify obesity as a multifactorial disease, but still exhibited negative attitudes and beliefs. This is concerning because it illustrates that even those with knowledge about the condition infer behavioral blame on patients (Schwartz et al., 2003).

CNAs appeared to be more weight bias than RNs and LPNs. Not having true clinical skills, CNAs primarily are responsible for attending to patients' activities of daily living (ADL) needs, which was shown to be a source of bias. Also, CNA certification requires the least amount of educational preparation calling for a high school diploma or general education development (GED) certificate as well clinical hours and successful completion of the state certification exam. CNA programs may benefit from incorporating bariatric sensitivity training into their curriculum and educating their students on safe and effective ways of assisting with ADL tasks for obese patients.

Overweight and obese nurses may be more likely than normal weight nurses to associate negative characteristics with obese patients. Characteristics of obese individuals identified within the NATOOPS factor analysis were low self-esteem, depression, guilt, ridicule, angry, fatigue, self-conscious, socially unaccepted, and low self-confidence (Watson et al., 2008). These findings demonstrate the phenomena that overweight and obese nurses have negative attitudes and feelings towards similarly shaped patients. The attribution-value model of prejudice suggests that this group of nurses may self-reflect biases towards themselves because they also identify with these negative attributes (Crandall et al., 2001).

Correspondingly, nurses were likely to view patients as being obese when, in fact, they were overweight, which may indicate that weight bias extends beyond obesity and effects overweight individuals, as well. Nurses may also be over-reporting the number of obese patients they care for on a daily basis if they are incorrectly classifying overweight patients as obese.

The majority of participants indicated they never had attended an obesity-related educational program while in school or while working in the clinical setting. Based on these findings, a multi effort approach should target nurses' knowledge and attitudes about obesity. A bariatric sensitivity educational program that explains the role of the environment and genetics in obesity and increases awareness about the negative effects staff attitudes have on patient outcomes and quality of care may help to reduce bias.

Limitations

Several limitations of the proposed study limit interpretation of the possible findings, such as the study relies solely on self-selected nurse's individual experiences at one point in time. The cross-sectional study design that was used prevents conclusions about the causal relationships among the variables and does not follow participants longitudinally to view personally normative behaviors.

The use of convenience sampling limits the generalizability of the study findings to other populations and decreases external validity; however, it was chosen because the study sites did not have large numbers of employees. Volunteer bias is of concern, but every effort was made to engage all nurses to participate. The results also lack generalizability because participants were predominantly white women who worked as RNs with an Associate's degree; therefore, findings cannot be applied to nursing

populations in different geographic locations, races, to LPNs and CNAs, and to male nurses. Self-report height and weight for BMI measurements are subject to bias. Future studies should seek to directly collect height and weight data to provide more accurate results.

Cultural norms of obesity are also a limitation. Perceptions of obesity are cultural (Crandall et al., 2001) and rural populations tend to have higher rates of obesity. The results indicate that weight bias existed among nurses of all sizes, but that smaller nurses may be more likely to display bias. A larger sample is needed to make these claims.

Conclusion

Measuring nurses' attitudes towards obese patients is important because of the negative effects biases can have on patient outcomes and the quality of care delivered. Conducting weight bias research in rural hospital settings provide a unique perspective of the attitudes that nurses have who work in areas where obesity is prevalent. Even when obesity is a societal norm it does not serve as protective factor against biases in rural communities; thus, nurses working in these communities require as much attention as their urban counterparts. The current study determined that weight bias existed towards overweight and obese patients among RNs, LPNs, and CNAs working in a rural inpatient hospital setting through independent t-test analysis; established that there was a weak negative correlation between weight bias and nurses BMI via Spearman correlation; and found that CNAs were more likely to be weight biased than RNs or LPNs through ANOVA analysis.

The limited resources allocated to rural hospitals and dependence on the use of LPNs and CNAs for staffing may breed higher weight bias rates making further research

among this population a necessity. Utilizing an instrument, like the NATOOPS, that was specifically tailored to nurses' attitudes paints a clearer picture of nurses' perceptions and provides evidence for the need of qualitative research to clearly understand the internal and external factors that cause bias. Understanding the etiology of weight bias in nurses will make planning intervention strategies easier and more effective in the future.

Table 2-1. Body mass index (BMI) table for adults

BMI	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**
Height (inches)	**Body Weight (pounds)**																
58	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167
59	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173
60	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179
61	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185
62	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191
63	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197
64	110	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204
65	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210
66	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216
67	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223
68	125	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230
69	128	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236
70	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243
71	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250
72	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258
73	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265
74	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272
75	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279
76	156	164	172	180	189	197	205	213	221	230	238	246	254	263	271	279	287

Table 2-2. Comparison of means of total factor scores by weight category

Factor scores	Factor 1 (M±SD)	Factor 2 (M±SD)	Factor 3 (M±SD)	Factor 4 (M±SD)	Factor 5 (M±SD)
Underweight/ Normal (N = 35)	5.542(1.91)	7.865(1.02)	8.556(0.616)*	6.378(2.21)	6.253(1.50)
Overweight/ Obese (N = 63)	4.997(1.86)	8.083(0.781)	8.056(0.753)	6.212(2.01)	6.414(1.49)

A mean score of 7.07 or greater on the weight bias composite score represents weight bias.
*p< .05

Table 2-3. Weight bias composite score and professional status

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.755	6	1.293	1.693	.138
Within Groups	46.559	61	.763		
Total	54.314	67			

A mean score of 7.07 or greater on the weight bias composite score represents weight bias.
*p< .05

Table 2-4. Mean weight bias composite score and professional status

Professional Status	Mean Weight Bias Composite Score (SD)
Certified nursing assistant	8.375(.40)
Licensed practical nurse	7.010(.706)
Associate degree in nursing	6.622(.909)
Bachelor of Science in nursing	6.610(.847)
Master of Science in nursing	6.221(1.32)

A mean score of 7.07 or greater on the weight bias composite score represents weight bias.
*p< .05

CHAPTER 3
QUALITATIVE ANALYSIS OF WEIGHT BIAS IN NURSES WORKING IN RURAL HOSPITAL SETTINGS

Background

Quality patient care has become a major concern in the last two decades and nursing is an integral component. Representing the largest, single group of healthcare professionals, nurses have significant influence over the experiences and outcomes of their patients (National Quality Forum, 2004). The meaning of quality nursing care has been vague, because nurses' perspectives typically have not been included (Gunther & Alligood, 2002; Lynn, McMillen, & Sidani, 2007). Researchers identified this issue, and numerous studies have sought to define quality of care. A study conducted by Burhans and Alligood (2010) found the lived meaning of quality nursing care from practicing nurses was "meeting human needs through caring, empathetic, respectful interactions within which responsibility, intentionality and advocacy form an essential, integral foundation" (Burhans & Alligood, 2010, p. 1694).

Great efforts have been made to identify quality nursing standards and measure them through nursing and patient involvement. Redfern and Norman (1999a, 1999b) attempted this task by interviewing 96 patients and 80 nurses from three hospitals to determine what the patients and nurses identified as indicators of quality nursing care. Nurses and patients both ranked therapeutic ward atmosphere, and thorough and sensitive individualized care as important quality of nursing care indicators. Patients felt that a nurse's promotion of patient morale, prompt response to a patient's need, equity of care, and social control were significant were factors contributing to high quality; whereas, nurses believed that effective leadership and teaching and clinical supervision of student nurses and staff was essential for high quality. Findings were similar in a

study conducted by Larrabee and Bolden (2001) which found patients defined “good nursing care” as being treated pleasantly, being shown genuine care, having their needs met, and nursing competence. Lee and Yom (2007) found that when nurses’ perceptions of their performance and expectations were higher than what their patients perceived, nursing care quality was considered low to the patient. A study conducted by Williams (1998) determined that inconsistent quality of nursing care is a result of insufficient time and dissatisfaction and stress among nurses.

Current nursing quality of care research provides vital information about the similarities and differences between nursing and patient standards, but literature related to the quality of nursing care towards obese patients would be valuable in light of our country’s current health situation. Obesity has become a major health problem in America in the last two decades leading to an increase in hospitalizations due to obesity-related conditions (Han et al., 2009). The American healthcare system is being inundated with patients seeking treatment for obesity-related health problems that include heart disease, type 2 diabetes mellitus, stroke, hypertension, dyslipidemia, cancer, and respiratory, digestive and joint problems (Han et al., 2009). An analysis conducted by the Behan and Cox (2010) from the Society of Actuaries estimated that the yearly obesity-related healthcare cost is $270 billion in the United States. The analysis also demonstrated that increases in healthcare cost positively correlated with increased BMI: $72 billion for overweight and $198 billion for obesity (Behan & Cox, 2010).

Hospitalizations for obesity-related chronic diseases place an increased demand on nurses (Bertakis & Azari, 2005). During hospitalizations, nurses deliver direct patient

care; therefore, they have the greatest amount of contact with overweight and obese patients in inpatient settings and have tremendous influence over their health outcomes (Gallagher, 2010; National Quality Forum, 2004). The medical needs of an overweight or obese patient can be physically demanding and may require lifting, turning, and mobilization which can be difficult and may threaten a nurse's health (Bagley et al., 1989). A study conducted on occupational injuries in nurses, psychiatric and home health aides found that 54% of reported workplace injuries from 1995-2004 were musculoskeletal disorders (Hoskins, 2006). Twenty-seven percent of these injuries were caused by overexertion; 67% of which were caused by lifting a patient (Hoskins, 2006). The threat of injury while caring for an overweight or obese patient can be stressful and has been reported as a source of negative weight bias in nurses (Brown, 2006).

Weight bias among nurses towards obese patients often results in feelings of repulsion, resentment, dread, and discomfort when having to care for them (Bagley et al., 1989; Brown, 2006; Peternelj-Taylor, 1989; Puhl & Brownell, 2001). Nurses' failure to provide empathetic care can be linked to insufficient training and equipment, inappropriate nursing care models, and misunderstanding the etiology of obesity (Camden, Brannan, & Davis, 2008). A common misconception among nurses' and other healthcare professionals is that obesity is controllable and is the result of no self-control, overindulgence, and laziness (Berryman et al., 2006; Bocquier et al., 2005; Brown, 2006; Campbell et al., 2000; Chambliss et al., 2004; Foster et al., 2003; Hare et al., 2000; Harvey & Hill, 2001; Puhl & Brownell, 2001, 2006; Puhl & Heuer, 2009; Puhl, Moss-Racusin, et al., 2008; Thuan & Avignon, 2005; Wear, Aultman, & Varley, 2006).

The irony of these findings is that obesity research has demonstrated that obesity is actually a multifactorial disease that is a result of genetics, environment, diet, and insufficient physical activity (Center for Disease Control and Prevention, 2011b; National Institutes of Health, 2012). Other studies have found that student and registered nurses (RN) were unlikely to associate positive characteristics with obesity (Poon & Tarrant, 2009). Undergraduate nursing students and RNs associated negative words like shapeless, slow, and unattractive with obesity (Poon & Tarrant, 2009; Teachman & Brownell, 2001). Interestingly, older nurses were found to have more negative attitudes towards obese patients than younger nurses and nurses; as were nurses with lower body mass indices (BMI) (Brown et al., 2007; Puhl & Brownell, 2001)..

It is concerning that healthcare professionals with negative attitudes may not be providing quality care to obese patients, which can subsequently lead to healthcare avoidance (Bertakis & Azari, 2005; Brown, 2006; Hebl & Xu, 2001). Providers spend less time with obese patients during scheduled appointments and do not provide the same patient education as they do to thinner patients (Bertakis & Azari, 2005; Hebl & Xu, 2001). A study by Amy et al. (2006) revealed a lower percentage of preventative cancer screenings among obese women despite having insurance and high access to healthcare. Weight was found to be a major barrier (83%) for undergoing preventative gynecological screenings for obese women; furthermore, women with the highest levels of obesity reported delaying preventative care because of their weight (68%). Explanations for their reluctance to seek care was past experiences with disrespectful treatment and negative attitudes by their provider, embarrassment over their weight, receiving unsought advice about losing weight, and not being provided with equipment

to accommodate their size (Amy et al., 2006). Obese women also avoided seeking healthcare if they gained weight since their last visit, would be weighed during an appointment, had to undress in an exam room, or would receive advice to lose weight (Drury & Louis, 2002).

Obese individuals should feel comfortable being regular healthcare consumers and be encouraged to properly mange their comorbities by healthcare professionals. Neglecting to receive routine preventative screenings can result in poor prognosis and exacerbation of symptoms. It is imperative that obese patients be treated fairly and respectfully by healthcare providers in order to reduce obesity-related mortality rates and to prevent creating a larger deficit in our strained healthcare system. Further evaluation of weight bias in nurses from rural hospitals using qualitative methods is needed to understand why weight bias occurs and the effects it may have on quality of patient care. The purpose of this study was to explore and understand the factors that cause or contribute to weight bias in nurses and how they affect quality of nursing care. This study hopes to accomplish this through one-on-one interviews with RNs, licensed practical nurses (LPN), and certified nursing assistants (CNA) working in a rural inpatient hospital setting by answering the following research questions (RQ):

RQ1: What factors cause or contribute to weight bias in nurses?

RQ2: How do the factors that cause or contribute to weight bias in nurses affect quality of care?

Methodology

Design

The current qualitative study was a component of a partial mixed methods equal status study. A partially mixed sequential equal status design involves conducting a

study with two phases that occur in succession, with the quantitative and qualitative phases having equal weight (Leech & Onwuegbuzie, 2009). The first component, a quantitative nursing weight bias study conducted by Garcia, Stopka, Chaney, Chaney, and Neff (2012a), sought to assess whether weight bias existed among RNs, LPNs, and CNAs in a rural inpatient hospital setting using an online version of the previously validated Nurses' Attitudes Toward Obesity and Obese Patients Scale (NATOOPS) (Watson et al., 2008). Interested participants were then interviewed for their thoughts on the factors that cause or contribute to weight bias and if weight bias affected the quality of care they provided to obese patients. These interviews occurred in private conference rooms within each participating hospital at a mutually convenient time.

Site and Sample

The quantitative and qualitative phases took place at a three rural hospitals in Southwest Florida. A rural site was chosen because higher levels of obesity are associated with rural living (Center for Disease Control and Prevention, 2011c); therefore, we can be sure that the nurses surveyed and interviewed had experience caring for obese patients. According to the American Hospital Association (2012), a hospital is considered rural if it meets at least one of the following criteria: have 100 or fewer beds, 4000 or fewer admissions, or be located outside a Metropolitan Statistical Area. All of the hospitals used in this study meet at least one of the criteria.

Hospital #1 houses 48 inpatient beds and 109 potential participants. The population of the surrounding municipality was 7,637, which consisted of 51% male and 49% female residents (U.S. Census Bureau, 2010). The U.S. Census Bureau (2010) reported that the population consisted of 53% whites, 25% African Americans, and 33% Hispanic or Latino.

Hospital #2 has 50 inpatient beds and 63 potential participants. The population of the surrounding area was 2,223, which consisted of 51% male and 49% female residents (U.S. Census Bureau, 2010). The U.S. Census Bureau (2010) reported that the population consisted of 70% whites, 7% African Americans, and 46% Hispanic or Latino.

Hospital #3 has 159 inpatient beds and 171 potential participants. The population of the surrounding area was 10,491, which consisted of 48% male and 52% female residents (U.S. Census Bureau, 2010). The U.S. Census Bureau (2010) reported that the population consisted of 76% whites, 15% African American, and 18% Hispanic or Latino.

Nursing demographics were not provided by the participating hospitals.

Hospitals 1 and 2 have little to no specialty medical services and require that patients be transferred to nearby facilities (~20 miles) if they require care outside the scope of the hospital services. Hospital #3 is the largest of the three sites and can provide specialty care, but is still considered rural.

Using a convenience sample, 16 nurses agreed to participate in the study. Respondents were predominantly female (93.8%, n=15) and ranged in age from 23 to 68 years, with an average of 47 years (SD=10.7). Respondents' races included white (93.8%, n=15) and Native American (6.3%, n=1). African-American and Hispanic/Latino nurses were not represented in the sample. Areas of nursing included medical/surgical care (18.8%, n=3), emergency care (25%, n=4), intensive care (25%, n=4), surgery (12.5%, n=2), obstetrics (6.3%, n=1), and IV therapy/other (6.3%, n=1) with one missing value. The majority of respondents held an Associates (50%, n=8) degree in nursing

(ASN) and the remaining had either a Bachelor's degree (BSN) (12.5%, n=2), master's degree (MSN) (12.5%, n=2), a license in practical nursing (12.5%, n=2), or a certification in nursing assistance (12.5%, n=2). Nursing experience ranged from 5 years or less (12.5%, n=2) to more than 25 years (18.8%, n=3). However, most nurses reported having worked between 10 to 25 years (68.7%, n=11). Over 81.3% (n=13) of the respondents reported never attending an educational program focusing on obesity. According to BMI measurements from the previous study, 50% (n=8) of the participants were obese, 12.5% (n=2) were overweight, and 25% (n=4) were normal weight with two missing values.

Procedure and Data Analysis

After Institutional Review Board (IRB) and hospital approvals were obtained from their respective Chief Nursing Officers (CNO), participants were sent emails from their respective nurse managers to participate in the main quantitative study. Participants who completed the NATOOPS were given an option at the end of the survey to provide the researcher with their email address via a free text box if they were interested in completing an interview. The message included that interviewees would receive a $10 Wal-Mart gift card as an incentive for participating. Interviews were scheduled within 48 hours of contact information receipt and completed between September 2011 and February 2012. Interviews were conducted on a volunteer basis and continued until saturation of themes occurred. A semi-structured interview design was used to elicit honest responses and to allow the participants to discuss topics of importance that may be unknown to the researcher (Wengraf, 2001).

Prior to the start of each interview, the researcher provided the participant with a unique identifier that consisted of the participant's gender, interview number, and

professional status. For example, if a female CNA participated in the third interview, their identifier would be F3CNA. The participant was asked to read the informed consent (Appendix C) and to ask any questions if they arise and to fill out the demographic survey (Appendix D). The signed informed consent and the demographic survey were placed in a manila envelope and given back to the researcher. Upon receiving the sign informed consent and demographic survey, the researcher began tape recording the question portion of the interview by reading the interview script listed in Appendix E. After all interview prompts were asked, the researcher read aloud their notes to confirm the opinions and ideas of the participant to ensure validity. The participant was also given the option to add or remove any information that was provided. At the completion of the interview, the researcher provided the participant with their incentive and reminded them to contact them with any questions or concerns.

Interviews were transcribed and all transcripts were re-read and compared to the researcher's interview notes for validity. Qualitative analysis using ATLAS.ti Scientific Software Development (2010) was conducted on the transcribed interviews. Transcriptions were uploaded individually into ATLAS.ti and analyzed using constant comparison analysis (Glaser & Strauss, 1967). Each transcript was read and broken into smaller, more manageable chunks. Each chunk was then inductively coded. Once all data were coded, they were reevaluated to ensure that similar codes were placed together and general themes were made.

The frequency of themes within the data was evaluated using thematic and constant comparison analyses. Code intensiveness was used to examine quantitative saturation of common data across the interviews. This was done to understand which

codes were used most, eliciting a greater understanding of the most important concepts reported by the participants. The more information (e.g., data units) contained in a category, the greater relevance of the category. Certain categories were allowed to possess fewer data units, as long as they still possessed enough units to merit exclusive distinction.

Results

From the nursing data, the following themes emerged as factors that cause or contribute to weight bias: patient care tasks, characteristics of obese patients, equipment needs, and nurse's perception of self. Participants expressed they attempt to give all of their patients the same level of care, but admitted that quality of care has suffered due to delays in treatment. Explanations for delays in treatment will be addressed in the Discussion section. See Table 3-1 for thematic frequencies. Participants' explanations were either personal accounts and/or what they have witnessed through their peers.

Theme 1: Patient Care Tasks

The theme "patient care tasks" was supported by 166 comments by 16 (100%) respondents. Patient care tasks included the following 4 concepts:

1) Ambulation/moving
2) Procedural
3) Education
4) Activities of Daily Living (ADL)

The task of ambulation/moving includes assisting a patient to a chair, bedside commode, bathroom, positioning or transferring them in a stretcher or bed, and walking the patient. Comments made by nurses regarding assisting obese patients with ambulation/moving included the following responses:

> By the end of your shift if you're working at the bedside and you've been repositioning or lifting higher up in the bed or getting them up in a chair, back in bed, your body is exhausted. So as soon as you get that 'we're going to transfer you to Med/Surg' it's like, 'Yes!'.
>
> Why can't they move themselves?
>
> They almost seem unwilling or they are willing to just lay there. Ya know? And they allow you to just move them completely. I mean move your legs! Do something for me!
>
> Some of us middle age people have to work 15, 20 more years. So that's the first thing, is like we hope they can move themselves because many time we don't have enough staff to move somebody extremely obese so they need to move as much as possible on their own.
>
> It seems like you can't come out and tell somebody, 'You're awfully big, I can't get you up by myself' because of all of this patient satisfaction stuff we have to do now and we have to do whatever we can to make them happy, you can't state the obvious.

Procedural tasks include inserting an intravenous catheter (IVs), inserting foley catheters, surgery prep, surgery, and examinations. Comments made by nurses regarding assisting obese patients with ambulation/moving included the following responses:

> I think that, ya know, is that, that IM (intramuscular injection) needs to be given to that 400 pound person, um, ya know, and I've got the standard inch and half needle. Is it really an IM injection or is it a SQ (subcutaneous) injection?
>
> Usually bigger people, it's just a fact of life, that their veins are deeper and they're a lot harder to get an IV on so we're like, 'Crap! I've got to get an IV on this person!'.
>
> Starting foleys on obese female patients – well, even on men, because it can be very difficult, because with a woman just assisting her in spreading her legs because I've actually done a foley catheter where it took 4 people including myself to hold back the pannis, you know a large abdomen, to hold back their legs, a person on each leg and then actually have to hold up the vaginal folds because they're so large, to get a hand in, to get a foley catheter into it, that was very difficult.

> When prepping them for surgery we have to wash the area, so you know if they're large they have some folds and you really have to make sure you get in there so they don't get an infection.

> They're more difficult to monitor them when they're on a fetal monitor because it's buried under their folds and you can't pick up the baby so you're running in there every 5 minutes.

The task of patient education includes providing the patient with information regarding their diagnosis, treatment, nutrition, discharge care, and preventive care. Comments made by nurses regarding assisting obese patients with patient education included the following responses:

> Sometimes the nurse just feels like, 'They're here for pneumonia. I'm not – they're not here for, ya know, whatever they're eating that's contributing to their obesity. I'm not gonna fix it in 4 days.' So the nurse ignores it.

> I can't give them teaching. I can't, as an obese person, tell an obese person to stop eating or get them diet information when I can't, I don't even have it down myself.

> You can say whatever, you can do teaching about nutrition, but it's like banging your head against the wall.

> I feel like I'm walking on egg shells. I feel myself, I feel more comfortable if I hear the physician addresses it with them and say it at the bedside and I feel like that's my opening to be able to provide that education and get the dietician in here to talk to them.

> We're supposed to provide education on our televisions to the patients and one patient that was overweight, we tried to do education on high blood pressure with him on the television and he was like, 'Turn that shit off, I'm not listening to that', ok, great!

> I always go back to, I wanna know how much they eat a day. 'Cause you have to eat a lot a day to get to, ya know, weigh 400 or 500 pounds. Someone's gotta be feeding them. Especially the ones that say 'oh I can't move or I can't this or I can't that I can't stand up'. And then I will always say, 'What did ya do at the home, how do you do this at home? How did you get into the hospital, did you crawl over on all fours? Did you walk in? How did ya get in here?'.

ADLs include mouth care, peri-care, bathing, combing hair, changing gowns, changing bed sheets, setting up meal tray, feeding, and ambulation (which will

addressed separately). Comments made by nurses regarding assisting obese patients with ADLs included the following responses:

> Cleaning stool or urine, it's harder to do an occupied bed change with a bigger person in the bed because there's not a lot of room to change the linens and get them cleaned up. It's just harder…it's a lot more weight to be pushing up.
>
> Yes, unfortunately you cop an attitude because 98% of the time the obese patient has a difficult time taking care of themselves which getting up to the bedside commode, wiping themselves, sometimes even as far as feeding themselves is your responsibility.
>
> You hope that they're not incontinent. You hope that they're not bed bound, hope that they can at least stand up so you can provide some hygienic care. You wish you had a room with a showering bed because sometimes you can't lift them. And, a lot of times, in this setting, we try to transfer them.
>
> If we have a 400 or 500 pound patient and they're laying in bed and doing absolutely nothing, then we automatically think, 'Oh my God. It's going to be so much work. I've gotta tug them and bathe them. How am I going to get under the extra skin?'.
>
> It drives me crazy, and you may have heard this before, if they have to use the bedside commode and they can't wipe themselves. They say, 'I can't reach back there'. And I say, 'Well how the heck do you do it at home?'.

Theme 2: Characteristics of Obese Patients

The theme "characteristics of obese patients" was supported by 146 comments made by 16 (100%) respondents. Characteristics of obese patients were both internal and external and included these 3 concepts:

1) Patient personality
   - Lazy/helpless
   - Attitude
   - Demanding
   - Stupid
   - Patient's perception of self
   - Depressed
2) Physical characteristics
   - Appearance/size
   - Personal hygiene

3) Family involvement

The patient personality characteristic of obese patients being lazy/helpless relates to nurses' feelings about the actions and motivation of obese patients. Nurses' comments regarding obese patients being lazy/helpless included the following:

> They're whiney and overly dramatic and they're like, 'Oh God, it hurts so bad,' well?
>
> I didn't getcha in that shape. Sometimes I feel like its laziness, it's just almost like a pity party on their part as far as, 'Oh, I'm so fat, I can't move'.
>
> They're in the hospital because they need help, but they also need to help themselves.
>
> If they come up here with the expectation that we are going to do everything for them to get them up, bare most of their weight as we are getting them up, then it's just frustrating and it just makes me angry.
>
> You do have those patients who are fully able to care for themselves and then once they hit the hospital they won't even lift their arm for you to put on a blood pressure cuff, you have to do all the heavy lifting, so I know that, that it's taxing on other nurses and myself.

The patient personality characteristic of attitude refers to the patients' demeanor towards nursing staff. Nurses' thoughts and feelings about obese patients' attitude included the following:

> Sometimes it's their attitude, of the patient, um, they do seem to come across that they have a non-caring attitude and I'm not sure if that's really true or, um, that's their way of expressing frustration, their anticipating that we are gonna have a hard time moving them and they're gonna be a burden…I'm not sure which.
>
> Sometimes they come off to the nurse as being hostile or what we might consider hateful or just anti-social.
>
> There's this feeling of I guess entitlement. It shouldn't take anybody more than 2 sticks to get their IV and we should have a stretcher that's larger than life.
>
> Sometimes it's very frustrating, the best way to describe it is they have a chip on their shoulder, like this is who I am and I don't need you to tell me I'm overweight and, you know, the attitude is hard and I feel that attitude

> was intensified because of my size, if another nurse who was fighting weight loss were to come in there, they would be more open or receptive.

The patient personality characteristic of demanding concerns nurses' perceptions that obese patients require and expect more attention. Nurses' comments regarding examples of demanding obese patients included the following:

> You wish they weren't so needy. You wish they'd lay off the call bell.

> If they're always demanding something to eat, the nurses may see that more, they may see that because of them being overweight and think, 'Oh, they always want to eat'.

> They're more needy from a mental standpoint, that they, their the ones on the call bells, and it's just probably because of all the other…issues of why they are the way they are. They tend to be more needy than the average patient for whatever reason.

The patient personality characteristic of stupid refers to nurses' belief that obese patients may be less intelligent than other patients. Nurses' comments about obese patients seeming stupid included the following:

> I worked in a Newborn Intensive Care where we did get a lot of people that were on the lower end of the socioeconomic scale, so I'm not sure if they had attitude because of that or because they were heavy, but it was, there still was that thought, that thought they weren't as smart.

> I've experienced from other nurses, types of demeanors that an obese person is not as intelligent, that they do not take care of themselves as well.

> Are we talking down to them or are we just thinking they are not intelligent enough to understand because an individual could have a higher education and you're not taking that into consideration, you just think well because you're obese, you're just stupid and lazy and because you don't get up and move or know how to control your diet.

Patient's perceptions of self are nurses' beliefs about how obese patients view themselves and the resulting view of others. Nurses' comments included the following:

> I know that a lot of times how the patient sees herself would maybe affect how we see and view her.

> I know that I have had patients that think that a nurse doesn't like them because they are overweight and the nurse is like, 'No, it has nothing to do with that'.

> I think that there are patients who get, the patients pick up on a nurse's attitude. They know when they're being discriminated against for lack of better word, disparaged maybe better, they know that, they pick up on it.

The patient personality characteristic of depressed stems from nurses' comments about obese patients seeming unhappy. Examples of this included the following:

> There are some that are like, 'I don't care, they don't care about me because I'm fat', there are some that have that opinion even though they haven't been treated that way, they just feel like they're disposable people because they have no self-esteem.

> We feel that they can take better care of themselves that they have let themselves go and I suppose some that is due to depression.

> If you're in that kind of pain and you've had that kind of life and you're unable to care for yourself you're going to be down on yourself, you're going to be, 'Oh, what am I going to do, I can't take this'.

The patient physical characteristic of appearance related to nurses' feelings and thoughts about obese patients' physical appearance and size. The nurses' comments about obese patients' appearance included the following:

> You know they say that within the first few seconds that you see a person you draw an opinion about them, so maybe they see them and draw a negative opinion.

> I mean I say, my common term is they look like a Volkswagen in bed.

> I think anyone who is overweight is going to catch a lot of grief.

> They can't clean themselves like you or I would, um, many times they're un-kept, just, stink. Just dirty, nasty, long toe nails, just look like a homeless kinda person.

> How the hell can somebody get that big?

The patient physical characteristic of personal hygiene related to nurses' feelings and thoughts about obese patients' hygiene and personal care. The nurses' comments about obese patients' hygiene included the following:

> I know a lot of nurses will comment about not wanting to care for a patient because how they can't keep themselves clean.
>
> I'm obese myself and as a larger person I know that you do have to do a little bit of extra care for yourself when you are large, but I do feel somewhat of an aversion.
>
> I think that if there is an obese person that is, has poor hygiene they're looked down upon more because they're just sloppy.
>
> You can be clean and big.
>
> Honestly, if they are really dirty and filthy I get disgusted and don't understand how they can get to that or let themself get to that point.
>
> We had an obese patient come in with lots of, for lack of better way to say it, yeasty smell, in the folds, and nurses out right tell them, ya know, 'You stink, you smell horrible', just in a demeaning way.

The patient's family involvement refers to nurses' perceptions and thoughts about how an obese patient's family plays a role in their obesity. The nurses' comments about obese patients' family involvement included the following:

> Yeah, sometimes the family also, they play into it. Like they, if they have that sense of hopelessness they're like, 'No, she can't, she can't!', and they'll just enable the patient to be helpless.
>
> You get that intro to where you can actually start some education about proper diet, because chances are the patient is probably diabetic, so you really want to touch on that big time and the family brings in Burger King and McDonalds for the patient to eat. Like seriously?

Theme 3: Equipment Needs

The theme "equipment needs" was supported by 136 comments made by all 16 (100%) respondents. Equipment needs included these 2 concepts:

1) Limited number of bariatric supplies
2) Larger equipment/environment to accommodate patient's size

Having a limited number of bariatric supplies was cited as a common barrier and occasional issue for nurses when caring for an obese patient. Common bariatric supplies in need were stretchers, hospital beds, wheelchairs, bedside commodes, gowns, scales, blood pressure cuffs, lift devices, wireless fetal monitors, and speculums. The following are examples of nurses' perceptions of needs and issues related to needing bariatric supplies:

> I think not having the proper equipment is an issue. One of the patients that I had that was larger needed a vaginal exam. We didn't have the right size speculum to do it.
>
> We only have, in the ER (emergency room), one bed that is like a bariatric bed and we only have one wheelchair, when they come in the front lobby that is for obese patients and that's not morbidly obese.
>
> It's frustrating because we have older beds at our hospital and there are newer beds and they're very expensive that you can put the patient in a sitting position so you're not physical getting a patient up out of bed to sit in a chair and some can weigh the patient.
>
> We have one bedside commode and I am not sure it would hold an extremely large patient, it might, but I have my doubts.
>
> We have pretty large wheelchairs and there's, um, we have one bathroom truly for the handicap, and that gives you lots of room to manipulate around and a larger wheelchair just barely squeaks by through the door.
>
> Oh yeah, we're always searching for larger gowns. Because we have one size fits everyone gowns or one size fits most. So we have to find big gowns.
>
> The barrier with fetal monitors, we have two that will monitor, as they call it "higher BMI patients", more accurately, but we just started using those in the last couple of weeks.
>
> We have a Hoyer lift, but we need more mobility devices and sometimes you don't know where to find them.
>
> We have to put them in the equipment we have, like the bed, um, they are uncomfortable until we get that "Big Boy Bed". They just have to wait which now affects their psycho-social, now you've affected them. You have to use equipment that doesn't fit them.

> You have to make sure you have the right size blood pressure cuffs, sometimes if they're morbidly obese you may have to use a thigh cuff on an arm or wrist because their arm is even too big for the large cuff. How accurate is that? I don't know.

> We've actually had to put 2 stretchers together and lock them and put a slide board in the center to put the patient on because we didn't have a stretcher that accommodated their size.

Needing larger equipment/environment to accommodate patient size results in an inadequate size of equipment and/or amount of space for clinicians to work with or diagnose the patient safely and comfortably. The following are examples of barriers that nurses have faced when dealing with a standard size equipment/environment:

> The OR (operating room) table is not designed for obese people, I think it only holds up to 250 or 300 pounds.

> Again, CAT (computed axial topography) scan, x-ray, MRI (magnetic resonance imaging) those sorts of things cannot hold the patient's weight so we can't test them. I think they only hold up to 350 pounds. We may have to just take a plain film. The doctor works with what he has in his bag of tricks.

> Well the other rooms are just spaces with curtains between them. You have just enough space to pull the bed in and then, um, and enough room to stand on each side and may be a chair on a side, but you have to move the bed over to get the chair inside so it's very tight quarters.

> We have one of five rooms that are like this, and their primary purpose is reserved for patients that are getting blood transfusions. If a room is available we will use it so the patient has more privacy or more room to manipulate.

Theme 4: Nurse's Perception of Self

The theme nurse's perception of self was supported by 23 comments made by 6 (37.5%) respondents. Nurse's perception of self included these 3 concepts:

1) Personal struggle with weight
2) Low self-esteem
3) See self in patient

The nurses' personal struggle with weight relates to how their own experiences may affect the way that they treat obese patients. The nurses' comments about their own weight problems included the following:

> I used to be a thinner person and I myself have been the object of quite a bit of ridicule, I was a lot bigger than this, and weight is a constant battle for everybody. I feel for them.
>
> If the nurse has issues with her own weight and is disgusted by what she sees, it triggers feelings of negativity towards herself and her patient.

The nurses' characteristic of low self-esteem related to nurses' feelings and thoughts about their own bodies and appearances and how that affects the way they treat obese patients. The nurses' comments about their self-esteem included the following:

> If my self-esteem is lower that day than normal I'm more sympathetic. I know that sounds crazy. But say I'm, because I'm currently on a low carb diet again, and say I'm doing great and it's working, then I get the mindset that it can be done and everyone can do it.
>
> No one likes to look in the mirror for too long and certainly, out of that, an attitude can manifest.

The nurses' characteristic of seeing themselves in their patient related to nurses' feelings and thoughts that occurred when they pictured themselves in their patient's place. The nurses' comments about seeing themselves in their patients included the following:

> If I've had a fat week or [laughing] it's like I could be them, you know?
>
> You look and say, 'It could be me'. It can almost make you more removed from the patient because you don't want to feel that.

Theme 5: Delay in Treatment

The theme "delay in treatment" was supported by 96 comments made by 12 (75%) respondents. Participants were asked if they felt that the quality of care they provided was the same for obese patients. Delay in treatment included these 4 concepts:

1) Staffing issues/assistance
2) Equipment availability
3) Avoidance/procrastination
4) Difficult to perform patient care tasks and assessments

Staffing issues/assistance refers to issues that occurred because there was not enough staff scheduled or available to help perform a patient care task for an obese patient resulting in a delay of treatment. The following are comments related to this concept:

> There is no staffing matrix based on the weight of the patient, um, there's nothing concrete. Do I think there is going to have to be one in the future? Yes.

> Quality of care can be different because of the obese person and the amount of care that it requires to help them. Are you gonna turn them every 2 hours? Well, maybe we will make it every 4 because it's a lot of work.

> Sometimes the other nurses aren't available, the CNAs aren't available and our units aren't always staffed right.

> We may need more help than what we have as far as nursing care. We might need 3 or 4 people in there to help us and we don't have that much. We normally only have 2 of us.

> If we need help we call and say 'all hands on deck'. We call the supervisor, ER, we'll call for a man if we have a man somewhere in the hospital to help us.

Equipment availability can be an issue in rural hospitals because they may not have the room or money to fully purchase high-priced items like bariatric beds and specialty mattresses. Nurses voiced that waiting for equipment may be quick, but often

it requires waiting for items to be delivered from an external company. The following are comments made referring to equipment availability:

> We had a 650 pounder here that, um, it took us a, a couple of weeks, but we finally got them on a bariatric bed. We did everything from a care standpoint that we could with 2 staff.

> We order specialty mattresses from purchasing. In the Intensive Care Unit they already have their specialty mattresses purchased. Then in the Med/Surg area, which is the majority of the patients, they have to actually order something and they probably have to wait between12 and 24 hours.

Participants expressed that treatment was delayed to obese patients because of procrastination/avoidance. They're reasoning was typically that the amount of time it would take to assist them would be significant and could take away from their other patients. Another common explanation was a fear of injury. The following are comments that were made regarding procrastination/avoidance:

> Yeah, they may have to wait a little bit because, you hate to say it, but you may procrastinate a little bit and try to finish what you're doing and get a little extra done because you know you're going to be in that room because they're time consuming.

> Yes we do have, um, a big issue with obesity, as far as nurses caring for them. If they are too large we just won't bug them unless they absolutely need it.

> I have seen other nurses say, 'I'm not going to move her big ass.' They will leave the patient waiting and/or not do it.

Nurses often commented that care was delayed because of it was difficult to perform patient care tasks or assessments on obese patients. Many questioned the quality of vital signs and diagnoses because of alternative approaches that had to be taken. The following are comments related to delays in patient care tasks and assessments:

> I think we try to provide the same quality of care, but I think obesity can be an issue. You might have a delay in care when you have to put a foley in

> on an obese patient and you need 4 people, you have to have all 4 people available to participate so you have to wait until they're all done.
>
> I don't feel a distal pulse in their foot or ankle. Well is it because there isn't one or is it because there's a layer of padding, if you will, that covers it? That's the reality. So now you have to go get a doppler, so easy things become more difficult.
>
> We didn't have the right size speculum to do an exam, well that effects her quality of care because the point is to have everything exposed so you can properly see it and properly diagnose it, but we didn't have what we needed.
>
> If an obese person is vomiting and they need some medication to make them stop vomiting, some Zofran IV, it takes longer to get an IV on them.
>
> When the monitor lead is buried under a fold, ya know, is it really pickin' up well? Do I need to clean under that fold before I can put a monitor lead on it so it can pick it up accurately?

Discussion

The research findings illuminate factors that cause or contribute to weight bias in nurses and the effect they have on quality of care. The four factor-related themes that emerged from participant interviews provide data about how the nurses' perceptions, feelings, and beliefs about themselves, their patients, and the work environment cause or contribute to weight bias in a rural inpatient hospital setting. The corresponding sub-themes provide an in depth analysis of the unique experiences of participants and provide valuable information about where interventions may be appropriate.

Patient care tasks were commonly discussed in participant interviews. Performing or assisting with patients' ADLs, ambulating or moving, performing procedures, and providing patient education were common topics. Recurring emotions emerged when discussing particular tasks. Dread, frustration, resentment, avoidance, anger, annoyance, additional work, fear of injury (self and patient), anxiety, and pity were all used to describe feelings that the participants experienced when caring for an obese

patient. The feelings discussed are corroborated in past research among nurses from suburban and urban hospitals (Bagley et al., 1989; Brown, 2006; Peternelj-Taylor, 1989; Puhl & Brownell, 2001).

Nurses' main concern was if the patient would be able to ambulate and assist in moving themselves. Nurses questioned their own physical ability to perform ambulation tasks that would require them to use physical force to assist an obese patient. They expressed fear, anxiety, and resentment that they or their patient would be injured which is a common concern in nursing (Brown, 2006; Hoskins, 2006).

Feelings of dread, frustration, anger, avoidance were stated during interviews regarding performing procedures and assessments on patients because of the patient's size and the extra amount of work they generated (Bagley et al., 1989; Crandall et al., 2001; Peternelj-Taylor, 1989; Puhl & Brownell, 2001). Nurses mentioned that they felt the quality of care given to their other patients suffered when they also had to care for an obese patient because they would get held up in their room assisting them. The notion that "simple things become difficult" was common because of the additional help or resources need to perform a "simple" task like starting an IV or inserting a foley catheter.

Educating obese patients about the dangers of being overweight were seldom brought up by clinicians. Many felt it was too touchy a subject to discuss and that they were not going to make a difference in the patient's behaviors in a few days (Bertakis & Azari, 2005; Hebl & Xu, 2001). Typically, healthy eating and exercise were only discussed when patients were diabetic or if the physician, patient or family wanted to discuss it.

Nurses described obese patients using negative attributes like lazy, demanding, stupid, depressed, unkempt, dirty which is similar to findings made by Brown (2006) and Puhl and Brownell (2001). Nurses reported having these negative perceptions towards obese patients prior to ever meeting or assessing their patient's ability. It was only until after assessing the patient did they remove any preconceived biases that did not fit the patient. This phenomenon can be explained by the Attribution Value Model of Prejudice (Crandall et al., 2001; Heider, 1958; Weiner et al., 1988). Prejudice towards a group is generalized to all of its members until an occasion occurs where the stereotype does not fit. Simply, all obese patients do not have to fit the stereotype of helpless, lazy, and dirty; they can be individually excused from prejudice if the attributes do not fit, but the general prejudice will still exist toward the group (Crandall et al., 2001).

Patient hygiene elicited strong feelings of dread and frustration from nurses. They admitted that foul odors immediately caused negative feelings and a desire to avoid the patient. They also felt frustrated that patients could not tell that they smelled or did not seem to care that they did. Medically, nurses explained that obese patients that were unclean typically had skin infections within their skin folds that, if not cared for, could create serious health problems. They did concede that it was probably more difficult for obese patients to clean themselves, but they still held them responsible.

Family involvement was described as a nuisance, frustration, and barrier to providing adequate care to an obese patient. Nurses felt that family members typically enable the patient making them demanding and needy towards the nurse. They also felt that family members undermined their authority and the health of the patient by bringing in fast food for the patient to eat. While many nurses addressed this issue for

the sake of the patient's health, others felt that they needed to pick their battles and that the patient would continue eating poorly once discharged so there was no point bringing it up.

Equipment needs was a major issue for nurses (Frank, 1993). They reported needing more bariatric supplies to provide competent and efficient care to the patient. The participating rural hospitals did have a limited supply of bariatric supplies on hand, but had the ability to order special supplies when needed. Wait times for supplies were reported to take anywhere from five minutes to two weeks to obtain. Nurses explained that they would have to make do with the supplies and equipment they had until the ordered supplies arrived or the patient was discharged or transferred. They also explained that diagnostic and surgical equipment could not accommodate a morbidly obese patient. Standard radiological equipment cannot hold more than 350 pounds so obese patients needing certain x-rays or scans would have to transferred to another facility or not receive the exam. Doctors would be forced to find alternative methods to come to a diagnosis.

Nurses admit that they have withdrawn themselves from their patients when they have put themselves in their situation. They explained that the way in which they perceive themselves has an effect on how they view and treat obese patients. It was found that nurses who had previous struggles with weight felt sympathy and pity for obese patients. They were also more likely to view obesity as a disease process. Nurses who admitted to having low self-esteem or body image issues tended to procrastinate or avoid interacting with obese patients and had more negative feelings towards them. Crandall et al. (2001) explains that when an individual perceives an

attribute as negative in another person they will have a prejudice towards them. If they, too, possess the same attribute they will also have negative feelings towards themselves, which can manifest as depression.

Quality of care was reported to be affected by the nurses' perceptions, feelings, and beliefs about themselves, their patients, and the work environment cause or contribute to weight bias. Nurses reported that though they attempted to provide the same care, assistance, and treatment it was often delayed. Delays were a result of staffing issues, equipment availability, nurse's procrastination/avoidance, and the increased complexity of performing patient tasks on obese patients.

Staffing issues played a major role in treatment delays. Nurses reported having to wait for other staff members, who may have to come from other units, to become available to assist with helping with an obese patient. Quality of patient care has been directly linked to nurse staffing by Aiken, Clarke, and Sloane (2002) who found that nurses' reported inadequate staffing resulted in fair or poor quality of care. Poor staffing has also been found to increase job dissatisfaction and burnout in nurses which may heighten negative attitudes towards patients.

As mentioned in Theme 3, bariatric equipment is limited in the participating hospitals. When equipment is not readily available patients and nurses are forced to make due with what resources are available. An obese patient with bed sores will have to be cared for in a standard hospital bed making turning and cleaning the patient difficult for nurses. Unfortunately, the rural hospitals used in this study are in financial distress and purchasing needed bariatric items is not a possibility. Further from reality are the hospitals purchasing diagnostic equipment that can accommodate morbidly

obese patients. As mentioned before, morbidly obese patients will often times not receive a radiological scan or surgery unless they are sent to another facility. In non-life threatening cases, physicians have to find alternative methods to diagnose and treat.

In many on the themes, nurse procrastination and avoidance was noted. Patient care tasks that require a significant amount of time, are physically taxing, or odorous cause nurses to postpone or avoid the patient. Many explain that procrastination occurs so they can manage their lower acuity patients, who are “easier” to care for, first so that they are not kept waiting; the irony is that the obese patient is then forced to wait. Other nurses admit to avoiding obese patients because they believe they are needy and demanding and do not want to be stuck in their room. Nurses also avoid obese patients when they see themselves in the patient. They explain that it is scary to think that they could be in their patient’s position one day so they shun them to avoid their feelings. Despite nurses’ feelings, it is ethically inappropriate to avoid patients for any reason.

Understanding the factors that cause or contribute to weight bias and how they affect quality of care are important. Obese patients typically have multisystem health problems and need are frequent healthcare consumers. They deserve to be given compassionate care and attention despite how time consuming or unpleasant the task may be. In an effort to measure quality of nursing care the American Nurses Association (1994) launched the *Safety and Quality Initiative* to explore and identify the relationship between nursing care and patient outcomes. By 1997, the National Database of Nursing Quality Indicators was created to define quality indicators and test data collection methodology and instruments (National Database of Nursing Quality Indicators, 2012). The National Database of Nursing Quality Indicators (2012) identified

the following three indicators: nursing-sensitive indicators reflect the structure (supply of nursing staff, skill, education/certification), process (nursing assessment, intervention, and RN job satisfaction), and outcomes (improve if there is a greater quantity or quality of nursing care, related to institutional care) of nursing care. These quality indicators are enforced and regularly evaluated in the hospital system not only to ensure that patient safety and care are adequate, but they are also major components for Medicare reimbursement (Centers for Medicare and Medicaid Services, 2012; Welton, 2008).

Limitations

Several limitations of the proposed study limit interpretation of the possible findings, such as the study relies solely on self-selected nurse's individual experiences at one point in time. Volunteer bias is of concern, but every effort was made to engage all nurses to participate. Recall bias may also pose a problem in participants.

The use of convenience sampling limits the generalizability of the study findings to other populations including the area used in this study; however, it was chosen because the study sites did not have large numbers of employees. The results also lack generalizability because participants were predominantly white women who worked as RNs with an Associate's degree; therefore, findings cannot be applied to nursing populations in different geographic locations, races, to LPNs and CNAs, and to male nurses. African-Americans, Hispanics, and Latinos were not represented in this study, but make up close to half of the population of the rural communities studied. Future research should focus on recruitment strategies within these underrepresented populations in order to provide a true understanding of the weight bias phenomenon in the researched rural communities.

Conclusion and Implications for Future Research

Weight bias in nurses is an issue in rural inpatient hospital settings that has quality of care implications. Obese patient's needs must be taken seriously and dealt with appropriately to prevent them from avoiding healthcare. Nurses must be able to overcome their initial biases towards obese patients in effort to prevent negative attitudes and actions from interfering with the quality of care they provide. Hospital administrators should focus on creating a weight based staffing matrix to ensure that patient care occurs in a timely and safe manner. Though the cost of increased staffing may be an issue, administrators need to remember that Medicare reimbursement is partially dependent on patient satisfaction scores. Hospitals need to also consider seeking grant funding to purchase commonly rented bariatric supplies, such as stretchers and mattresses, in order to provide comfort to obese patients in a timely manner. Nurses may benefit from educational or training opportunities that provide evidence-based knowledge of the impact that nursing care has on patient outcomes with an emphasis on nursing-sensitive measures. Annual nursing competencies can serve as the evaluative measure. Future qualitative research should be done on a larger random sample of rural RNs, LPNs, and CNAs in different areas of the United States to offer generalizability of findings.

Table 3-1. Themes for factors that cause or contribute to weight bias and effect on quality of care.

Factors by Theme	Comments
Theme 1: Patient are Tasks	**166**
Ambulation/moving	79
Procedural	30
Education	30
Activities of Daily Living (ADL)	27
Theme 2: Characteristics of Obese Patients	**146**
Patient personality	79
Lazy/helpless	30
Attitude	29
Demanding	7
Patient's perception of self	6
Depressed	4
Stupid	3
Physical characteristics	46
Personal hygiene	42
Appearance/size	4
Family involvement	21
Theme 3: Equipment Needs	**136**
Limited number of bariatric supplies	80
Larger equipment/environment to accommodate patient's size	56
Theme 4: Nurse's Perception of Self	**23**
Personal struggle with weight	13
Low self-esteem	5
See self in patient	5
Theme 5: Delay in Treatment	**96**
Equipment availability	41
Staffing issues/assistance	25
Difficult to perform patient care tasks and assessments	20
Avoidance/procrastination	10

CHAPTER 4
THE USE OF MIXED METHODS AND PROPOSED SOLUTIONS TO WEIGHT BIAS IN NURSES WORKING IN RURAL HOSPITAL SETTINGS USING THE SOCIAL ECOLOGICAL MODEL

Background

Obesity has become a major health problem. Obese patients typically suffer from multiple comorbities and, therefore, are frequent healthcare consumers (Bertakis & Azari, 2005; Centers for Disease Control and Prevention, 2010; Han et al., 2009). Nurses represent the largest, single group of healthcare professionals and have the greatest exposure to obese patients (National Quality Forum, 2004). Having significant influence over the experiences and outcomes of their patients, nurses must be aware of the special needs and characteristics of this special population.

Weight bias is a common social issue that obese individuals face in all aspects of their lives. Numerous studies indicate that weight bias pervades interpersonal relationships, the workplace, schools, and the healthcare system leaving those who are obese with feelings of shame, guilt, and low self-esteem (Puhl & Brownell, 2003; Puhl, Moss-Racusin, et al., 2008; Schwartz et al., 2003). What is most troubling about weight bias is it has become a cultural norm in established countries including the United States increasing 66% over the past decade (Andreyeva et al., 2008). The overwhelming negativity towards obese individuals does not come without consequence. Weight bias may have significant effects on an obese individual's psychological and physical health (Puhl & Heuer, 2009, 2010). Evidence exists that weight bias may interfere with the successful implementation of obesity prevention strategies; as well as healthcare access and quality of care (Puhl & Heuer, 2010).

Providing compassionate and quality care is essential in ensuring obese patients remain regular healthcare consumers. A lower percentage of obese women are seeking preventative cancer screenings despite having insurance and high access to healthcare; weight was found to be a major barrier (Amy et al., 2006). Reluctance stemmed from past experiences with disrespectful treatment and negative attitudes by their provider, embarrassment over their weight, receiving unsought advice about losing weight, and not being provided with equipment to accommodate their size (Amy et al., 2006). Other reported reasons for avoiding healthcare included weight gain since the last visit, being weighed during an appointment, undressing in an exam room, or receiving weight loss advice (Drury & Louis, 2002).

Nurses' failure to provide empathetic care can be linked to insufficient training and equipment, inappropriate nursing care models, and misunderstanding the etiology of obesity (Camden et al., 2008). Healthcare professionals need to abort the mindset that obesity is controllable and, instead, recognize that it is a multifactorial disease in which genetics and the environment play a vital role (Berryman et al., 2006; Bocquier et al., 2005; Brown, 2006; Campbell et al., 2000; Center for Disease Control and Prevention, 2011b; Chambliss et al., 2004; Foster et al., 2003; Hare et al., 2000; Harvey & Hill, 2001; National Institutes of Health, 2012; Puhl & Brownell, 2001, 2006; Puhl & Heuer, 2009; Puhl, Moss-Racusin, et al., 2008; Thuan & Avignon, 2005; Wear, Aultman, & Varley, 2006). Some studies suggest that educating nurses about the etiology of obesity would be effective in reducing bias, but this has been found to be incorrect. Schwartz et al. (2003) found that physicians and nurses who specialized in bariatric care still had weight bias, illustrating that even those with knowledge about the condition

infer behavioral blame on patients (Schwartz et al., 2003). Sadly, nursing curricula and competencies do not address problems or solutions for caring for an obese patient and there are scarce resources available in rural hospitals.

Recent research into nurse weight bias and quality of care has supplied valuable information regarding its effects on patient attitudes and outcomes (Larrabee & Bolden, 2001; Lee & Yom, 2007; Mold & Forbes, 2011; National Quality Forum, 2004). However, many studies of weight bias and quality of care do not provide detailed information on rural nurses or sufficient information on what causes weight bias and how it affects quality of care. Rural communities tend to have a higher incidence of obesity than urban areas and face limited staffing and equipment (Center for Disease Control and Prevention, 2011c); thus, nurses working in rural areas are more likely to have regularly cared for obese patients and may be more likely to experience weight bias. Rural hospitals may benefit from bariatric sensitivity programming to educate their nursing staff to reduce or prevent weight bias. Moreover, previous nursing weight bias studies limited participation to nurse practitioners, registered nurses (RN), and nursing students excluding licensed practical nurses (LPN) and certified nursing assistants (CNA) who are an integral part of the healthcare team in rural hospitals.

A study conducted by Garcia, Stopka, Chaney, Chaney, and Neff (2012a; 2012b) attempted to fill these gaps by surveying nurses (RNs, LPNs, and CNAs) in three rural hospitals using the previously validated Nurses Attitudes Toward Obesity and Obese Patients Scale (NATOOPS) (Watson et al., 2008) and by conducting interviews with participants to determine the reasons for their bias and the effects it had on quality of care. A partially mixed methods sequential equal status design was used in which

quantitative and qualitative elements were conducted during two separate phases using the same convenience samples (Leech & Onwuegbuzie, 2009). The findings were comparable to those from similar studies conducted in different regions in which nurses reported to having negative feelings and attitudes towards obese patients (Brown, 2006; Brown et al., 2007; Poon & Tarrant, 2009; Puhl & Brownell, 2001; Schwartz et al., 2003; Teachman & Brownell, 2001; Watson et al., 2008). Common feelings expressed were frustration, stress, avoidance, victim blaming, anger, fear of injury, dread, and the belief that obesity was controllable. Common characteristics used to describe obese patients by normal weight and overweight and obese nurses were lazy, unkempt, depressed, difficult attitude, and stupid. Quality of care was found to be effected by the combination of the stated feelings and perceptions along with having limited bariatric equipment and staffing, which resulted in delays in treatment.

There seems to be a lack of overall guidance from a practice standpoint to provide nurses with the necessary knowledge and support they need to reduce their bias. Commonly employed nursing care models, which provide the guidelines for nursing practices, do not even address bariatric sensitivity. The hospitals used in the previous studies conducted by Garcia et al. (2012a; 2012b) all employed the patient-centered care (PCC) model to guide nursing practice. PCC is widely popular and is endorsed by majoring governing bodies in healthcare which emphasize the importance of quality care and patient satisfaction (Centers for Medicare and Medicaid Services, 2005; Institute of Medicine, 2001b).

The Institute of Medicine (IOM) defines PCC as “a partnership among practitioners, patients, and their families (when appropriate) to ensure that decisions

respect patient's wants, needs, and preferences and that patients have the education and support they need to make decisions and participate in their own care" (Institute of Medicine, 2001b, p. 7). Nursing intervention methods emphasize the patient's individual values and beliefs which builds a deeper understanding of the patient's perspective of their health status (Lauver, Ward, Hedrick, & et al., 2002; Wolf, Lehman, Quinlin, Zullo, & Hoffman, 2008). Patients are not viewed as their disease and can negotiate their care in a respectful and dignified environment (McCormack, 2004).

PCC ultimately seeks to improve communication, promote patient involvement, and create a positive relationship between the nurse and patient (Robinson, Callister, Berry, & Dearing, 2008). Nurses must be able to equally adapt to each of their patient's individual needs (Wolf, Lehman, Quinlin, Zullo, et al., 2008). Often times patient's expectations may not be appropriate for their diagnosis and may affect their prognosis. During these instances, nurses have to negotiate and find a level of treatment that is appropriate and amendable for the patient (Lyon, 1989). Patient care plans are unique for each patient and are created through the interactions of the nurse-patient relationship (Lauver et al., 2002).

PCC has been listed as a national quality aim for healthcare system improvement by the IOM (Institute of Medicine, 2001a). It has also been recommended by the Centers of Medicare and Medicaid Services (CMS) (2005) as one of twelve actions for quality improvement. It is not a criterion for insurance reimbursement, but rather a model that impacts policies related to credentialing, licensure, medical education, and quality of care assessment (Epstein et al., 2005; Robinson et al., 2008).

Though the use of PCC is widely supported, there have been issues in its implementation. A report by the Agency of Health Research and Quality (AHRQ) (2005) found that patients reported never experiencing patient-centered care despite the institutions use of it. The effectiveness of PCC was also pilot tested and retested in a bariatric setting with no significant improvement in length of stay, infection, falls, post-operative complications, quality of care, satisfaction level, or perceptions of nursing care between the two studies (Wolf, Lehman, Quinlin, Rosenzweig, et al., 2008); however, nurses felt they were able to positively impact patient's pre-operative preparation.

Figure 4-1 depicts the cyclic nature of a PCC model used by the participating hospitals. The figure implies that the patient is centrally located in the framework of the hospitals with nurses playing a key role. Currently, each hospital employs annual competencies for their staff to complete to ensure that nurses are up to date on current, evidence-based policies and procedures. Competency training modules cover patient confidentiality, fire safety, back safety, natural disasters, radiation safety, medication error prevention and patient safety, corporate compliance, elder care, child abuse, domestic violence, workplace safety, blood borne pathogens, restraints education, transmission precautions of infectious diseases, AccuCheck meter education, blood bank banding review, blood transfusion and reaction review, organ donation education, catheter-acquired UTI, patient education improvement, end-of-life training, growth and development in infants and children, injury prevention, diversity in healthcare, occurrence reporting, advanced directives, patient rights, and electrical safety. Bariatric sensitivity training is entirely absent and has direct implications for nursing care and patient outcomes as previously stated. The RESPECT model is a simple, cost-effective

way to fill the bariatric patient care gap in PCC by providing empathetic care training strategies (Bejciy-Spring, 2008).

The purposes of this study were: 1) to summarize the quantitative and qualitative data presented by Garcia, Stopka, Chaney, Chaney, and Neff (2012a; 2012b) and 2) to propose potential points of inervention within the context of the ecological perspective. The following research question (RQ) will be answered by this study:

RQ1: Do interview themes support RN, LPN, and CNA weight bias found in survey responses?

RESPECT Model

The RESPECT model was developed in response to the National Association of Bariatric Nurses (NABN) position paper (2007) that called for the nursing profession to provide safe and equal care to obese patients. The model emphasizes the following seven concepts of cultural sensitivity: 1) rapport; 2) environment/equipment; 3) safety; 4) privacy; 5) encouragement; 6) caring/compassion; and, 7) tact (Bejciy-Spring, 2008). These seven concepts were adapted from the NABN's guiding principles and serves as a framework for "establishing and maintaining successful professional relationships" within the obese patient population (Bejciy-Spring, 2008; National Association of Bariatric Nurses Position Statement, 2007). Figure 4-2 represents the vicious cycle of weight bias that obese patients endure and the resulting positive impacts from implementing the RESPECT model. Each concept will be discussed briefly.

Rapport

Rapport was defined as "an interpersonal relationship of connection, empathy, and understanding that helps establish a foundation for trust, confidence, and collaboration" (Bejciy-Spring, 2008, p. 50). Building rapport with patients is key in developing the

nurse-patient relationship that is vital to PCC and is the foundation of creating a culturally sensitive relationship and environment (Bejciy-Spring, 2008). Bejciy-Spring (2008) recommends the following actions to build nurse-bariatric patient rapport:

Environment/Equipment

The environment provided to obese patients has a significant effect on their comfort and safety. Bejciy-Spring (2008) considers providing a bariatric friendly environment and equipment to be fundamental elements of sensitive care because they promote independence, mobility, participation, and improve quality of care and life. The following are recommendations made by Bejciy-Spring (2008) to promote mobilization and independence for obese patients:

Safety

As discussed in the qualitative study, movement and mobilization of obese patients elicited fear and dread in nurses. The fear not only existed for themselves, but also their patients. Identifying critical safety concerns of nurses and patients and addressing them properly can help promote the development of trust in the nurse-patient relationship (Bejciy-Spring, 2008).

Privacy

Patient privacy and dignity are key quality of care indicators and are important to obese patients. Trust can be developed and maintained by ensuring patient privacy, confidentiality, and by preserving their dignity (Bejciy-Spring, 2008).

Encouragement

Motivation and attitude can have a profound effect on the health outcomes of an obese patient, but can be challenging. Many obese patients healthcare journeys have been long and arduous which can lead to discouragement, disappointment, and

frustration (Bejciy-Spring, 2008). Motivation from nurses may just give patients enough hope to actively participate in their treatment, further fostering the trust between nurse and patient.

Caring/Compassion

Caring is a "process based on concern or interest in actions that contribute to good, worth, dignity, or comfort of another human being" (Bejciy-Spring, 2008, p. 53). Caring requires a reciprocal relationship of connectedness and respect between the nurse and patient (Carter et al., 2008). A major component of caring is compassion which is "the sympathetic emotion and awareness of other someone's needs or distress combined with a desire to assist that person and alleviate the suffering" (Bejciy-Spring, 2008, p. 53; von Dietz & Orb, 2000). The qualities of caring and compassion allow nurses to be present for their patients and help to establish sensitive, respectful care.

Tact

Obese patients are commonly the victims of jokes, crude comments, ridicule, stereotyping, and teasing (Puhl & Brownell, 2003; Puhl, Moss-Racusin, et al., 2008; Schwartz et al., 2003; Wear, Aultman, Varley, & Zarconi, 2006). Tact can be effectively used to establish trust, rapport, and a productive nurse-patient partnership (Bejciy-Spring, 2008). Nurses must be able to speak and interact with patients without offending them keeping in mind the situational circumstances, feelings, viewpoints, values (Bejciy-Spring, 2008).

Methods

A partially mixed sequential equal status design was used to organize both components of the Garcia et al. (2012a; 2012b) nursing weight bias studies. The parent

study had two phases that occurred in succession using both quantitative and qualitative phases that carried equal weight (Leech & Onwuegbuzie, 2009).

Sites and Sample

A convenience sample was used for the quantitative and qualitative phases which took place at a three rural hospitals in Southwest Florida. According to the American Hospital Association (2012), a hospital is considered rural if it meets at least one of the following criteria: has 100 or fewer beds, 4000 or fewer admissions, or located outside a Metropolitan Statistical Area. All of the hospitals used in this study meet at least one of the criteria.

Hospital #1 houses 48 inpatient beds and 109 potential participants. The population of the surrounding municipality was 7,637, which consisted of 51% male and 49% female residents (U.S. Census Bureau, 2010). The U.S. Census Bureau (2010) reported that the population consisted of 53% whites, 25% African Americans, and 33% Hispanic or Latino.

Hospital #2 has 50 inpatient beds and 63 potential participants. The population of the surrounding area was 2,223, which consisted of 51% male and 49% female residents (U.S. Census Bureau, 2010). The U.S. Census Bureau (2010) reported that the population consisted of 70% whites, 7% African Americans, and 46% Hispanic or Latino.

Hospital #3 has 159 inpatient beds and 171 potential participants. The population of the surrounding area was 10,491, which consisted of 48% male and 52% female residents (U.S. Census Bureau, 2010). The U.S. Census Bureau (2010) reported that the population consisted of 76% whites, 15% African American, and 18% Hispanic or Latino.

Nursing demographics were not provided by the participating hospitals.

Hospitals 1 and 2 have little to no specialty medical services and require that patients be transferred to nearby facilities (~20 miles) if they require care outside the scope of the hospital services. Hospital #3 is the largest of the three sites and can provide specialty care, but is still considered rural.

The quantitative study had a nurse response rate of 42.9% (N=113). Respondents were predominantly female (83.2%, n=94) and ranged in age from 20 to 79 years, with an average of 47 years (SD=12.4). Respondents' races included white (72.6%, n=84), Hispanic/Latino (8.9%, n=10), black (4.4%, n=5), Asian/Pacific Islander (3.5%, n=4), other (3.5%, n=4), and Native American (0.9%, n=1). Areas of nursing included medical/surgical care (23.9%, n=27), emergency care (21.2%, n=24), intensive care (17.7%, n=20), surgery (12.4%, n=14), obstetrics (8%, n=9), and IV therapy/other (2.7%, n=3). The majority of respondents held an associates (ASN) (43.4%, n=51) or bachelors (18.6%, n=21) degree in nursing (BSN) and the remaining had either a master's degree (MSN) (5.8%, n=6), a license in practical nursing (LPN) (8.8%, n=10), or a certification in nursing assistance (CNA) (3.5%, n=4). Over 86.8% (n=102) of the respondents reported caring for 1 or more obese patients on a daily basis and 68.1% (n=77) had never attended an educational program focusing on obesity. Nursing experience ranged from 5 years or less (20.4%, n=23) to more than 25 years (18.5%, n=21). However, most nurses reported having worked between 10 to 25 years (54.9%, n=62).

In the qualitative study, 16 nurses agreed to participate in interviews. Respondents were predominantly female (93.8%, n=15) and ranged in age from 23 to

68 years, with an average of 47 years (SD=10.7). Respondents' races included white (93.8%, n=15) and Native American (6.3%, n=1). African-American and Hispanic/Latino nurses were not represented in the sample. Areas of nursing included medical/surgical care (18.8%, n=3), emergency care (25%, n=4), intensive care (25%, n=4), surgery (12.5%, n=2), obstetrics (6.3%, n=1), and IV therapy/other (6.3%, n=1) with one missing value. The majority of respondents held an ASN (50%, n=8) and the remaining had either a BSN (12.5%, n=2), MSN (12.5%, n=2), a LPN (12.5%, n=2), or a CNA (12.5%, n=2). Nursing experience ranged from 5 years or less (12.5%, n=2) to more than 25 years (18.8%, n=3). However, most nurses reported having worked between 10 to 25 years (68.7%, n=11). Over 81.3% (n=13) of the respondents reported never attending an educational program focusing on obesity. According to body mass index (BMI) measurements from the previous study, 50% (n=8) of the participants were obese, 12.5% (n=2) were overweight, and 25% (n=4) were normal weight with two missing values.

Procedures

After Institutional Review Board (IRB) and hospital approvals were obtained from their respective Chief Nursing Officers (CNO), participants were sent emails from their respective nurse managers to participate in the main quantitative study during the Fall of 2011. The NATOOPS was adapted to a web-based version and imbedded in each hospital's intranet. RNs, LPNs, and CNAs that completed the survey also provided their height and weight, which was used to calculate BMI using the standard formula (weight (kg)/height (m^2)).

Participants who completed the NATOOPS were given an option at the end of the survey to provide the researcher with their email address via a free text box if they were

interested in completing a 30-minute interview. The message included that interviewees would receive a $10 Wal-Mart gift card as an incentive for participating. A phenomenological approach was used to determine the factors that cause or contribute to weight bias and the nurses' perception of quality of care through semi-structured interviews. Interview probes were written to elicit conversation and participants were encouraged to speak freely. Interviews were scheduled within 48 hours of contact information receipt. Interviews were conducted on a volunteer basis and continued until saturation of themes occurred.

Data Analysis

Within the quantitative study, descriptive statistics determined frequencies, measures of central tendency (mean, median), and spread (standard deviation) of the surveyed population. Second, independent t-tests assessed weight bias differences across BMI categories (underweight/normal weight, overweight/obese). Third, an analysis of variance (ANOVA) assessed differences in weight bias across professional status (RN/LPN/CNA) and demographic data. Finally, Spearman correlations were performed to assess associations between weight bias and nurse BMI. SPSS (2009) was used in all of the aforementioned analyses.

Qualitative analysis consisted of constant comparison analysis which was used to derive themes from the qualitative interviews and code intensiveness was done to illustrate quantitative saturation of common data across the interviews. ATLAS.ti (2010) qualitative analysis software was used to organize transcripts and perform analyses.

Results

Quantitative and Qualitative Findings

The quantitative study sample consisted of an underweight/normal weight group of 35 participants (31%), and an overweight/obese group of 63 participants (55.8%). Independent t-test between BMI group comparisons indicated that underweight/normal weight nurses believed obesity is controllable ($t=8.556$, $df=70.680$, $p<.003$). Overweight/obese nurses displayed negative feelings regarding characteristics of obese individuals ($t=8.083$, $df=44.049$, $p=.286$); however, this was not statistically significant. ANOVA results indicated weight bias decreased with professional status and that CNAs had weight bias ($M=8.375$, $p=.138$); however, CNA weight bias was not statistically significance. Professional status explained 14% ($\eta^2=.143$, $p=.138$) of variability in weight bias scores, but was insignificant. There was a weak negative correlation between BMI and weight bias ($\rho= -0.121$, $p=.335$) such that nurses with lower BMIs had greater weight bias.

Using a phenomenological approach, the qualitative study sought to determine the factors that caused or contributed to weight bias and how weight bias affected quality of care. Five themes emerged through constant comparison analysis and code intensiveness: 1) patient care tasks (166 comments); 2) characteristics of obese patients (146 comments); 3) equipment needs (136); 4) nurse's perception of self (23 comments); and 5) delay in treatment (96 comments). Themes will be organized in the Ecological Model and also identify intervention points.

Ecological Model

The nature of weight bias is a complicated, multifacted public health issue. Though knowledge is key in overcoming weight bias, behavior change requires multiple

efforts. An ecological perspective emphasizes the interaction between and interdependence of factors within and across all levels of problem behaviors (Glanz, Rimer Barbara, & Institute, 2005). By applying an ecological perspective we are able to focus on an individual's interactions with their physical and socio-cultural environments and can formualte tailored intervention strategies at each level.

Two key concepts of the ecological perspective identify intervention points: the interactive behavioral effects of multiple layers of influence and reciprocal causation where the individual both shapes and is shaped by the social environment (Glanz, Lewis, & Rimer, 2002; Glanz et al., 2005). McLeory et al. identified the concept of multiple layers of influence which helps to systematically guide interventions (K. R. McLeroy, D. Bibeau, A. Steckler, & K. Glanz, 1988). The five levels of influence of the Ecological Model are intrapersonal, interpersonal, organization, community and public policy (Figure 4-3). The upcoming sections identify intervention points within the ecological model using the RESPECT model and results presented in this study.

Intrapersonal

Intrapersonal factors are those items relating to the individual, such as attitudes, beliefs, knowledge, demographics, and psychological characteristics (Glanz et al., 2002). Health education is very effective at changing behavior at the intrapersonal level, but requires more than increasing knowledge for the behavior change to last. Behavior change requires acquiring the necessary skills that help to facilitate and maintain changes.

The results of this study provided a glimpse into the attitude, perceptions, and beliefs of nurses regarding obesity. Future interventions addressing intrapersonal factors of weight bias should provide information tailored to the individual. The

RESPECT model suggests nurses focus on demonstrating care and compassion towards their patient during times of insecurity or judgment (Bejciy-Spring, 2008). For example, nurses who find themselves withdrawn or avoiding their patient because of their own body issues should focus on accepting themselves and their patient while recognizing that their patient also has feelings and insecurities, as well as unique qualities and capabilities (Bejciy-Spring, 2008).

Conversely, nurses who successfully lost weight were more likely to blame their patient for being obese. Using themselves as the ultimate example, nurses who lost weight felt like there was no excuse why anyone could not succeed in losing weight if enough effort was put forth. These nurses should recognize that obesity is a disease process that is often times uncontrollable. Instead of blaming obese patients, these nurses should be encouraging and educating interested patients on the benefits of adopting healthy behaviors and self-acceptance to gain independence in a tactful manner.

Victim-blaming was also common among respondents. Much of the blame was being placed on obese patients' ability to change their lifestyle. Many nurses expressed confusion when trying to understand how people become obese and why they do not lose weight.

Ways in which nurses may be able to learn methods for conveying care, compassion, and tact could be during a mandatory workshop or annual bariatric competencies. Workshops or competencies can increase knowledge by discussing the causes of obesity focusing on the role that genetics and the environment play; as well as, educating nurses how their attitudes negatively impact patient care.

Understanding how to safely use bariatric assistive equipment may decrease the level of fear nurses experience when ambulating or moving obese patients. Nurses need to become familiar with commonly used handling aids (lifts, gait-belts, stand-assist aids, friction-reducing aids) and be able to teach patients how to effectively assist in their movement. Annual assistive device competencies should be developed to assess body mechanics and assistive device operation.

Interpersonal

The interpersonal level of the model relates to the physical environment and social network of the individual (Glanz et al., 2002). Weight bias behaviors are interpersonal by nature, where relationships, social networks, and culture aid in the development of an individual's social identity, support and role definition. An individual's families', friends' and peers' attitudes and beliefs concerning their perceptions of obese patients will help shape their intention and participation in those behaviors.

Since social norm plays a role in the acceptability of the weight bias, peer education programs should be considered. The mandatory workshops could include storytelling by an obese patient who can speak about their experiences with weight bias and discuss its effects. Obese nurses could also serve as guest speakers, because they can talk about their feelings about how peers' biases affect them and the work environment. Rapport building exercises can help nurses learn how to approach obese patients in a tactful manner and increase care and compassion by teaching nurses how to look beyond the patient's body size.

Family involvement was a theme that emerged from interviews. Nurses' reported patient's family members often undermined nursing authority, would bring in fast food, and enable the patient. Nurses explained they seldom addressed any family issues

because it could cause them trouble and they did not feel like reprimanding them would have any long term effects. The RESPECT model suggests nurses focus on demonstrating care, compassion, and tact towards their patient and their family members while promoting patient safety (Bejciy-Spring, 2008). Family members should be educated upon visitation that the patient is on a prescribed diet by their physician that has to be upheld during the patient's hospital stay. They should also be prohibited from bringing in any outside food or drink into the units.

Institutional

The institutional level is characterized by commercial organizations, social institutions, associations, and clubs with rules, regulations, policies, and informal structures (Glanz et al., 2002). Weight bias prevention interventions should occur first at the nursing school level where the curriculum can highlight obesity as a disease and the consequences of weight bias from an emotional and financial standpoint. At the clinical level, a bariatric training module can be incorporated into the current annual competency training schedule to assess knowledge retention from workshops.

Moving beyond knowledge, we acknowledge resources in the institutional environment can help or hinder quality of patient care. The limited availability of bariatric equipment cause delays in treatment and great frustration among staff, which was reported to decrease quality of care. Appropriately sized equipment, such as beds, wheelchairs, bedside commodes, toilets, chairs, exam tables, and lifting devices should be used consistently. Correct size instruments and supplies, like blood pressure cuffs, and IV and syringe needles, should also be available and easily accessible. Patient rooms should be clean and accessible for obese patients and bariatric equipment; therefore, doorways, hallways, patient and exam rooms, and showers and bathrooms

should be able to safely accommodate the size and weight of obese patients. New equipment technology should be researched and evaluated for bariatric patient usage (Bejciy-Spring, 2008).

Nurse staffing matrices should account for patient acuity. Currently, nurse staffing is only dependent on the number of patients in each unit and does not take into account acuity. The level of acuity is the complexity of the patient's condition and the amount of care required to provide safe and competent care. Therefore, a nursing unit with three patients may only be given a RN and CNA during a shift, but two of the patients are obese and need ambulation and moving assistance every two hours. Conversely, a nursing unit with eight patients may be given two RNs, a LPN, and a CNA even though their patients are fully independent. Staffing matrices that disregard patient acuity breed an environment of preventable accidental injury, nurse burnout, and can severely alter the quality of care that can be given.

Community

The community is a broader level of the hospital environment as it also includes surrounding areas. The community is both physical as well as functional and includes standards among groups and social network norms (Glanz et al., 2002). All three of the communities involved in the study have weekly farmers markets for their residents, but they are located in the epicenter of each town. Providing satellite markets in other populated areas of the community may help to serve a greater number of residents. Also, providing transportation by county-owned school buses could bus residents into the epicenter and provide access to those without transportation.

Each hospital could also provide the community with monthly health education courses at the hospital, churches, or in a community-owned building. Monthly programs

can focus on topics that are chosen by the community and can provide nurses with opportunities in building rapport with community members. County-wide health fairs within the schools, churches, and/or community activities (i.e. county fairs, rodeos, parades, etc.) may also provide opportunities to nurses to interact with the community and, in turn, reduce victim blaming by showing nurses that obesity extends beyond the individual and is a community problem that requires attention. Engaging in community-based activities may provide the hospital with opportunities for funding through state or federal agencies.

Public Policy

Local, state, and federal policies and laws outline the public policy level in the ecological model (Glanz et al., 2002). This level can provide greater influence and accessibility to resources or establish policy against weight bias. At the hospital level, policy can be made that requires mandatory workshops and annual competencies for bariatric sensitivity training. Incident reports can also be tailored to identify witnessed weight bias infractions by peers or patients in order to identify those who may need further intervention.

At the national level, nursing credentialing and certifying bodies can test bariatric care knowledge and sensitivity skills by including them in national exams. The inclusion of evidence-based bariatric sensitivity would lead nursing schools to adopt such training into their curricula. A major step that must be taken for either of these two suggestions to happen is the healthcare community has to view obesity as a clinical diagnosis. Additionally, mandating that nursing student clinical rotations include bariatric facilities will allow early exposure to sensitivity practices.

Discussion

The quantitative and qualitative methods used in this study indicate that nurses working in a rural hospital setting have weight bias against obese patients.

The survey significantly demonstrated that normal weight nurses believed obesity was controllable (Factor 3) which was also expressed by interview participants. Nurses commonly argued that obese patients could lose weight is they would eat properly and exercise. Similarly, nurses who identified obesity as a multifactorial disease still expressed that they did not understand why obese patients did not take control of their lifestyles. These nurses tended to be RNs whom were taught in school the etiology of obesity so it's clear that increasing knowledge is not enough to prevent nurses from blaming patients for their behaviors.

According to the survey, nurses with lower BMIs were more likely to be weight biased than nurses with higher BMIs. Interestingly, more than half of the participants in both studies were either overweight or obese which was similar to the original NATOOPS study; however, weight bias was still prevalent. The current quantitative study did not have many under weight nurses participate which may indicate that the surveyed areas were heavier. Testing more under weight and normal weight nurses may help to clarify this statistical claim.

Both data sets indicated nurses have negative attitudes related to characteristics of obese patients (Factor 2). Characteristics identified in the interviews that supported survey measures included obese patients being angry and depressed. Interestingly, nurses from both BMI categories did not identify obese patients with the stereotypical characteristics found in Factor 4 of the survey, but the interviewed nurses did. Interviewed nurses commonly perceived obese patients as being lazy, helpless, and

unkempt. In fact, when patients were identified as lazy or helpless the nurses were more likely to experience feelings of dread, anger, frustration, resentment, avoidance, and victim blame. Patient hygiene also elicited strong feelings of avoidance, dread, disgust, frustration, and repulsion. The feelings expressed about obese patient characteristics in interviews aligned with the nurse responses to obese patients tested in the NATOOPS and in the literature. This validates that these feelings are also prevalent in rural populations.

Survey results indicate that nurses did not have negative attitudes about the supportive roles they have in caring for obese patients (monitoring food intake, weight management programs, and emotional support) described in Factor 5, but this was not supported by interview findings. Family member involvement tended to interfere with monitoring food intake and emotional support. Family members commonly enabled the patient by doing everything for the patient, repeatedly ringing the call light for the patient, and bringing in fast food. Many nurses expressed they did not bother educating the patient and family members on the importance of independence and healthy eating because they would not have the patient long enough to change their behavior. The nurses who did bring up these issues were often angered when the patient and family did not listen. Other nurses were uncomfortable discussing the patient's weight because they did not want to offend them. They were only comfortable moving forward with healthy lifestyle education if the patient or physician wanted to discuss it. Interview findings also indicate that nurses felt obese patients were depressed and had low-self esteem. Some nurses explained that if they felt a patient was sad they would try to be kind and supportive towards them without directly addressing what was bothering them.

Conversely, other nurses chose to avoid engaging themselves with the patient so they did not have to deal with their problem.

The NATOOPS did identify nurses' feelings towards obese patients in Factor 1. Though significance was not found among this factor in the quantitative study, it was brought up regularly among interviewed nurses. Feelings of irritation, impatience, frustration, stress, and discomfort were often associated with bariatric equipment needs. Nurses explained that not having the appropriately sized equipment made caring for obese patients difficult, more time consuming, and stressful. They also noted that poor staffing created additional problems because if assistive equipment was not available they needed extra hands to assist them. Nurses explained that since dealing with a shortage of bariatric supplies was so common they associated caring for obese patients are being extremely difficult.

Limitations

Using multiple methods to explain one phenomena can lead to more error (Fielding & Fielding, 1986). Much thought and research went into choosing the methods used for each study. The selected methods were supported in the literature and with any research may be difficult to replicate. Replication of the methods would allow the researcher to determine the accuracy of their research.

The quantitative and qualitative studies rely solely on self-selected nurse's individual experiences at one point in time. The cross-sectional study design that was used prevents conclusions about the causal relationships among the variables and does not follow participants longitudinally to view personally normative behaviors.

The use of convenience sampling limits the generalizability of the studies' findings to other populations including the area used in this study; however, it was chosen

because the study sites did not have large numbers of employees. Volunteer bias is of concern, but every effort was made to engage all nurses to participate. Recall bias is also of concern. The results also lack generalizability because participants were predominantly white women who worked as RNs with an Associate's degree; therefore, findings cannot be applied to nursing populations in different geographic locations, races, to LPNs and CNAs, and to male nurses. African-Americans, Hispanics, and Latinos were not represented in this study, but make up close to half of the population of the rural communities studied. Future research should focus on recruitment strategies within these underrepresented populations in order to provide a true understanding of the weight bias phenomenon in the researched rural communities.

Cultural norms of obesity are also a limitation. Perceptions of obesity are cultural (Crandall et al., 2001) and rural populations tend to have higher rates of obesity. The results indicate that weight bias existed among nurses of all sizes, but that smaller nurses may be more likely to display bias. A larger sample is needed to make these claims. The results may not be transferred to hospitals without a similar environment and culture. The sampled hospitals have scarce resources and staffing and are situated in areas of low socio-economic means with high rates of obesity. In addition the data collection was conducted during a specific amount of time and thus does not follow respondents longitudinally to view personally normative behaviors.

Conclusion

Method triangulation was an effective way of reinforcing weight bias findings. Qualitative analyses helped to support and provide a deeper understanding of quantitative significance. The findings also further validate nursing weight bias research currently in the literature, but among an underserved population. Gaining a broader

understanding of weight bias among rural nurses will help researchers to target point of change and develop useful tailored interventions.

The ecological model can be difficult to operationalize and apply to behavior changes; however, the current study aids to specifically define the interacting behaviors of weight bias and intervention strategies appropriate at each level.

Further research should focus on continued assessment of weight bias in nurses working in different populations. Additional efforts should be made to include LPNs and CNAs in research in order to better inform educational strategies during their training. Qualitative measures should be used to further understand the causes of weight bias among nurses. Multiple method approaches should also be considered to gain a broader understanding and deeper appreciation of weight bias.

The researcher also suggests testing the proposed interventions for feasibility and cost effectiveness. Though caution must be applied in generalizing the results, the proposed study would provide a comprehensive description of weight bias in nurses working in a rural population and aid in addressing the gap of the knowledge base.

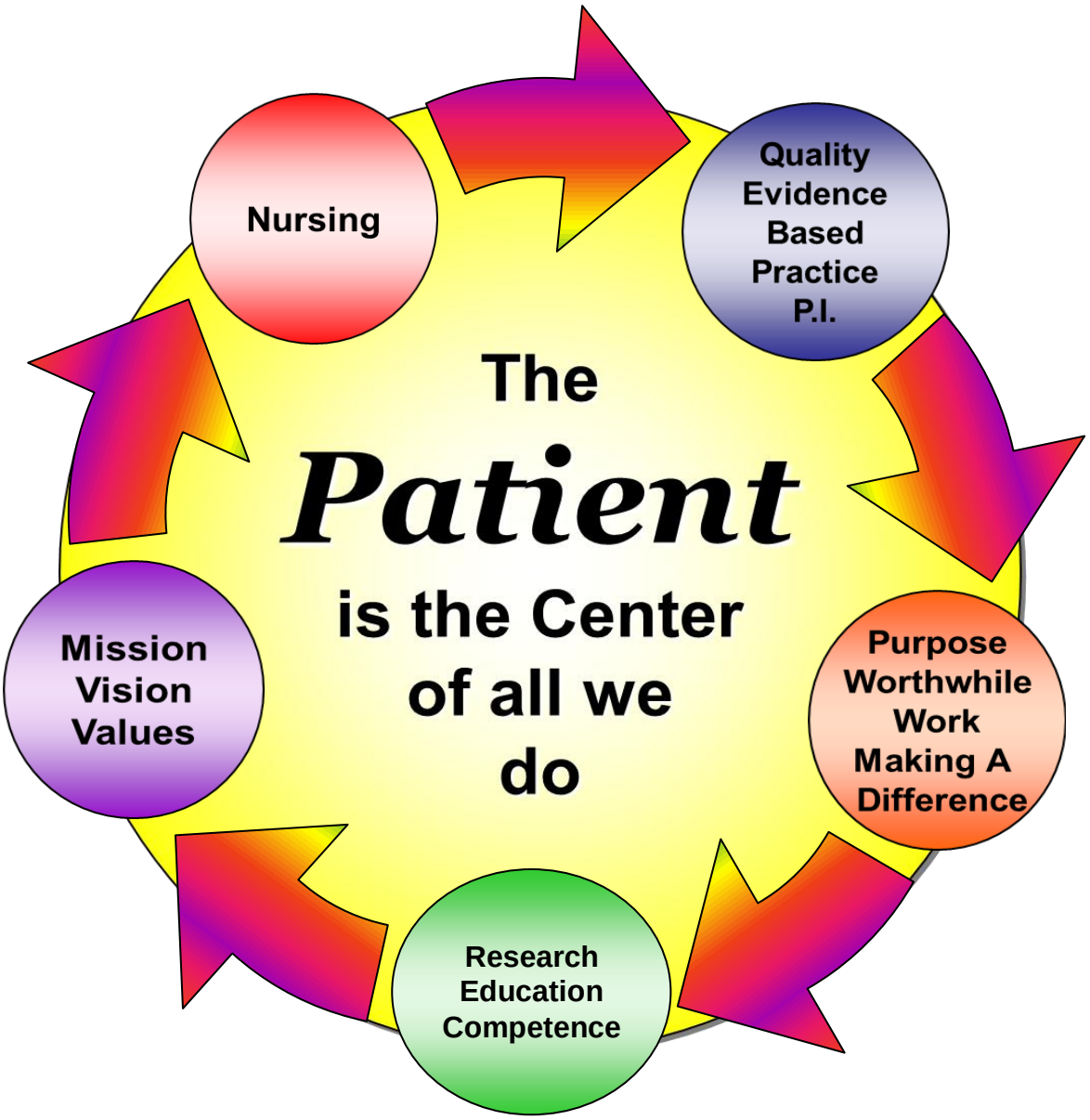


Figure 4-1. Patient-Centered Care (PCC) Model

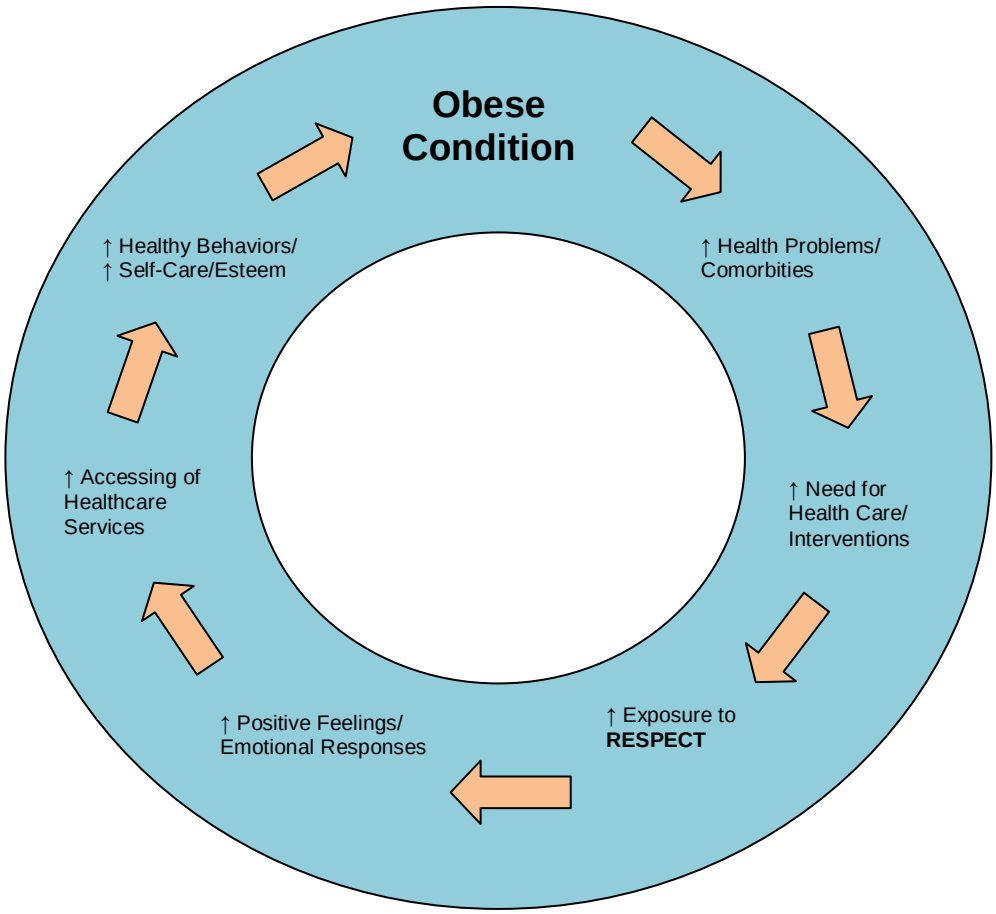


Figure 4-2. Breaking the Vicious Cycle of Obesity with RESPECT adapted from Bejciy-Spring, S.M. 2008. R-E-S-P-E-C-T: a model for the sensitive treatment of the bariatric patient. *Bariatric Nursing and Surgical Patient Care, 3,* page 54, Figure 2.

Figure 4-3. The Ecological Model

CHAPTER 5
CONCLUSIONS

Background

The prevalence of obesity in the United States continues to be a major health problem and has triggered an increase in weight bias and discrimination in the United States and its healthcare system (Andreyeva et al., 2008). Obese patients typically suffer from multiple comorbities and, therefore, are frequent healthcare consumers and victims of nursing weight bias (Bertakis & Azari, 2005; Centers for Disease Control and Prevention, 2010; Han et al., 2009). Nurses represent the largest, single group of healthcare professionals and have the greatest exposure and significant influence over the experiences and outcomes of their patients (National Quality Forum, 2004). The negativity displayed by nurses towards obese individuals may have significant effects on an obese individual's psychological and physical health and may interfere with the successful implementation of obesity prevention strategies and treatment (Puhl & Heuer, 2009, 2010). Sadly, nursing curricula and competencies do not address problems or solutions for caring for an obese patient.

Nurses and nursing assistants working in rural hospitals were of great interest in the current study because of their increased exposure to an obese population, scarce resources, and a lack of representation in weight bias literature (Center for Disease Control and Prevention, 2011c). The aim of this study was to determine if weight bias existed among nurses working in a rural hospital setting towards obese patients and assess how weight bias affected quality of nursing care. This was accomplished through a partially mixed methods sequential equal status approach that was presented in Chapters 2, 3, and 4 of this manuscript. The specific purposes were to: 1) evaluate if

weight bias exists among nurses in a rural inpatient hospital setting using the Nurses Attitudes Toward Obesity and Obese Patients Scale (NATOOPS); 2) identify the factors that cause or contribute to weight bias among nurses and how care may differ for an obese patient through semi-structured interviews; 3) determine if interview themes support weight bias survey measurements. The triangulated findings provided insightful evidence for intervention strategies using each level of influence of the Ecological Model of Health Behavior (K. McLeroy et al., 1988).

Results

Body mass index (BMI) calculations from the quantitative study resulted in an underweight/normal weight group of 35 participants (31%), and an overweight/obese group of 63 participants (55.8%), with 15 missing values. Between BMI group comparisons on the five factors yielded statistically significant differences between the means of the two weight categories for Factor 3 ($t = 3.069$, $p < .003$); wherein underweight/normal weight nurses described obesity as controllable. Overweight/obese nurses identified negative characteristics to obese patients as compared to underweight/normal weight nurses for Factor 2; however, this was not statistically significant. Analysis of variance (ANOVA) was conducted to assess differences in weight bias between registered nurses (RN), licensed practical nurses (LPN), and certified nursing assistants (CNA). The results indicate that CNAs had weight bias ($M=8.375$, $SD=.40$, $p=1.38$); however, CNA weight bias was not statistically significant. A spearman correlation was conducted to determine if a relationship existed between weight bias means and nurse BMI. The findings indicate a negative correlation between BMI and weight bias ($\rho = -0.121$, $p = 0.335$) such that nurses with lower BMIs had greater weight bias.

The qualitative study sought to determine the factors that caused or contributed to weight bias and how weight bias affected quality of care. Five themes emerged through thematic and constant comparison analyses and code intensiveness: 1) patient care tasks (166 comments); 2) characteristics of obese patients (146 comments); 3) equipment needs (136); 4) nurse's perception of self (23 comments); and 5) delay in treatment (96 comments).

The ecological perspective was used to identify points of intervention in each level of influence to which the RESPECT model was employed to fill the gaps of the Patient-Centered Care (PCC) model used by the hospitals.

Intrapersonal attitudes, perceptions, and beliefs of nurses regarding obesity included believing obesity is controllable, low self-esteem of the nurse, and victim blaming (Glanz et al., 2002). The RESPECT model suggested nurses focus on demonstrating care and compassion towards their patient during times of insecurity or judgment (Bejciy-Spring, 2008).

Interpersonal relationships and the physical environment included social norms such as the acceptability of the weight bias among peers (Glanz et al., 2002). The RESPECT model recommended rapport building exercises that can help nurses learn how to approach obese patients in a tactful manner and increase care and compassion by teaching nurses how to look beyond the patient's body size (Bejciy-Spring, 2008).

Institutional levels of influence included commercial organizations, social institutions, associations, and clubs with rules, regulations, policies, and informal structures (Glanz et al., 2002). Major institutional issues included no standardized bariatric educational modules, limited bariatric equipment, and inappropriate staffing

matrices. The RESPECT model suggested making mandatory annual bariatric sensitivity competencies, providing appropriately-sized bariatric equipment and supplies accessible, and using an acuity-based staffing matrix that will provide a safer environment for the patient and nurse (Bejciy-Spring, 2008).

Community policies and programs were non-existent in terms of providing the rural communities with knowledge about obesity or access to healthy affordable foods. The RESPECT model recommended using community –based interventions, like health fairs, to build rapport within the community using caring, compassionate, and tactful communication.

Public policy involves all local, state, and federal policies and laws (Glanz et al., 2002). No policy exists in national licensure or certification agencies that require nursing students or working nurses to engage in bariatric sensitivity training. Placing RESPECT model strategies into nursing school curricula will allow student nurses to be exposed to respectful practices early on in their career.

Implications

Public health promotion initiatives are successful when they move beyond knowledge of protective factors and incorporate multiple strategies outside of personal behavior and knowledge. This is especially true among complex behaviors like weight bias. Having a broader understanding of the factors that cause or contribute to weight bias in a rural hospital setting emphasize the need for engaging in a multi-level intervention approach. An ecological perspective helps to highlight the interaction between and interdependence of factors within and across all levels of problem behaviors (Glanz et al., 2005). By applying an ecological perspective we are able to focus on an individual's and their interactions with the physical and socio-cultural

environments. In the case of this study, the researcher was able to identify that rural hospitals tend to have limited bariatric resources and staff, which had an effect on nurse biases and quality of care. By understanding the multiple levels of influence, researchers are able to provide viable and realistic recommendations to elicit behavior changes.

Future Research

Further research should focus on continued assessment of weight bias in nurses working in different populations. Additional efforts should be made to include LPNs and CNAs in research in order to better inform educational strategies during their training. Qualitative measures should be used to further understand the causes of weight bias among nurses. Multiple method approaches should also be considered to gain a broader understanding and deeper appreciation of weight bias.

African-Americans, Hispanics, and Latinos were not well represented in this study, but make up close to half of the population of the rural communities studied. Future research should focus on recruitment strategies within these underrepresented populations in order to provide a true understanding of the weight bias phenomenon in the researched rural communities.

The researcher also suggests testing the proposed interventions for feasibility and cost effectiveness. Though caution must be applied in generalizing the results, the proposed study would provide a comprehensive description of weight bias in nurses working in a rural population and aid in addressing the gap of the knowledge base.

APPENDIX A
NURSES ATTITUDES TOWARD OBESITY AND OBESE PATIENTS SCALE
(NATOOPS)

Instructions:

Please read each statement carefully before responding. Mark a straight line across the given line at the point which indicates how you feel about obesity. Your line can occur any place on the given line.

For example: I like to eat ice cream.
Seldom_____Often

1. Obese adults overeat.
   Seldom_____Often

2. Obese adults exercise.
   Seldom_____Often

3. Obesity is influenced by one's family environment.
   Seldom_____Often

4. Nurses feel uncomfortable when caring for obese adult patients.
   Seldom_____Often

5. If given the choice, nurses would prefer not to care for obese adult patients.
   Seldom_____Often

6. Obese adult patients would prefer to be put on a weight management program while in hospital.
   Seldom_____Often

7. Obesity is treatable.
   Disagree_____Agree

8. Obese adult patients need more emotional support than other patients.
   Seldom_____Often

9. Nurses should monitor the food intake of obese adult patients more carefully than that of non-obese patients.
   Disagree_____Agree

10. Obese adult patients are more self-conscious than normal weight patients.
    Seldom_____Often

11. Obesity can be prevented by self-control.
Disagree_____Agree

12. Obese adults can lose weight if they change their eating habits.
Disagree_____Agree

13. Obesity is a matter of lifestyle.
Seldom_____Often

14. I feel the same about caring for an obese patient as a normal weight patient.
Seldom_____Often

15. Caring for an obese adult patient is more frustrating than caring for a normal weight patient.
Seldom_____Often

16. I feel more irritated when I care for an obese adult patient than a normal weight patient.
Seldom_____Often

17. I feel more impatient when caring for an obese adult patient than a normal weight patient.
Seldom_____Often

18. I feel disgust when I am caring for an obese adult patient.
Seldom_____Often

19. I feel indifferent to the obesity when I am assigned to an obese patient.
Seldom_____Often

20. It is difficult to feel empathy for an obese adult patient.
Seldom_____Often

21. I'd rather not touch an obese adult patient.
Disagree_____Agree

22. Caring for an obese adult patient is more emotionally draining than caring for a normal weight patient.
Seldom_____Often

23. Caring for an obese adult patient is more stressful than caring for a normal weight patient.
Seldom_____Often

24. Caring for an obese adult patient repulses me.
Seldom_____Often

25. Obese adults are self-indulgent.
Seldom_____Often

26. Obese adults are unkempt.
Seldom_____Often

27. Obese adults are lazy.
Seldom_____Often

28. Obese adults are self-confident.
Seldom_____Often

29. Obese adult patients are depressed.
Seldom_____Often

30. Obese adults feel socially accepted.
Seldom_____Often

31. Obese adults experience unresolved anger.
Seldom_____Often

32. Fatigue is a problem for obese adults.
Seldom_____Often

33. Obese adult patients are the subjects of ridicule.
Seldom_____Often

34. Obese adult patients feel guilty.
Seldom_____Often

35. I would rather work with a normal weight person than an obese person.
Disagree_____Agree

36. Obese people have a lower opinion of themselves than normal weight people.
Seldom_____Often

NURSES ATTITUDES TOWARD OBESITY AND OBESE PATIENTS SCALE (NATOOPS) DEMOGRAPHIC DATA QUESTIONNAIRE

1. Gender ___Female
   ___Male

2. Age in years _____

3. Race _____ White
   _____ Black/African American
   _____ Hispanic
   _____ Latino
   _____ Asian/Pacific Islander
   _____ Native American
   _____ Other – Please specify _____

4. Highest level of education (check one)
   ___ Diploma in Nursing
   ___ Bachelor's degree in Nursing
   ___ Master's degree in Nursing
   ___ Doctorate degree in Nursing
   ___ Specialty certificate
   ___ Degrees other than in Nursing (please specify):

   _____

5. Please estimate your annual household income:
   _____

6. Area(s) of nursing in which you are currently employed (please specify):
   _____

7. Shift you predominantly are scheduled to work: _____

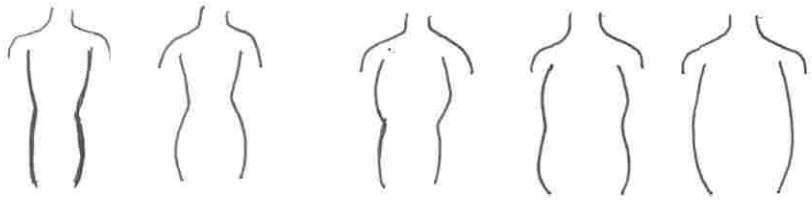
8. How many years have you been employed as a nurse?
   _____

9. Have you attended any educational program that focused on obesity?
   ___ no
   ___ yes (explain the type and state the approximate hours)
   _____

10. On a daily basis how many people do you care for whom you think are overweight or obese?

___ none
___ 1 or 2
___ 3 or more

11. Please label each of the diagrammatic figures below according to your interpretation of normal weight (NW), overweight (OW), or obese (OB).



a)_____ b)_____ c)_____ d)_____ f)_____

12. Height _____in

Weight _____lbs

APPENDIX B
NURSES ATTITUDES TOWARD OBESITY AND OBESE PATIENTS SCALE (NATOOPS) INFORMED CONSENT

Protocol Title: Assessing attitudes toward obesity in nurses and its effect on quality of care.

Please read this consent document carefully before you decide to participate in this study.

Purpose of the research study:

To determine if attitudes exist towards obese patients among registered nurses (RN), licensed practical nurses (LPN), and certified nursing assistants (CNA) in a rural hospital setting and to identify the factors that effect quality of patient care in an effort to establish the need for an obesity-related patient care competency.

What you will be asked to do in the study:

You will be asked to complete the Nurses' Attitudes Toward Overweight and Obese Patients Survey using a secure link and private IP address. The survey should take no longer than 20 minutes to complete.

Risks and Benefits:

Minimal risk is associated with participation. Potential benefits include providing the rationale for designing an obesity-related patient care competency for nurses (RNs, LPNs) and clinical support staff (CNAs) to improve nursing care and patient outcomes. The study will also give insight into the factors and barriers that contribute to weight bias providing the participants the opportunity to have their confidential and anonymous opinions and recommendations heard by the administration without risk of penalty or termination.

Compensation:

You will not be compensated for participating in this research.

Confidentiality:

Your identity will be kept confidential to the extent provided by law. Your information will be assigned a code number. The codes and corresponding survey responses will be kept in a locked file in the principal investigator's office. When the study is completed and the data have been analyzed, the list will be destroyed. Your name or code will not be used in any report and your personal responses will not be disclosed to your supervisor or hospital administration. We will not record your name or email address or

connect them with your responses unless you choose to participate in a voluntary, one-on-one interview with the PI. The PI, Co-PI, and Supervisor will not log IP addresses, track IP addresses, or attach IP addresses to information. Your name will not be used in any report, presentation, or publication.

Voluntary participation:

Your participation in this study is completely voluntary. There is no penalty for not participating.

Right to withdraw from the study:

You have the right to withdraw from the study at anytime without consequence.

Whom to contact if you have questions about the study:

Janelle Garcia, Doctoral Candidate, Principal Investigator
Department of Health Education and Behavior
University of Florida
garciajt@hhp.ufl.edu
(352)392-0583 ext. 1283

Christine Stopka, PhD
Department of Health Education and Behavior
University of Florida
cbstopka@hhp.ufl.edu
(352)392-0583

Whom to contact about your rights as a research participant in the study:

IRB02 Office, P.O. Box 112250, University of Florida, Gainesville, FL 32611; (352)392-0433.

Agreement:

I have read the procedure described above. I voluntarily agree to participate in the study and I have received a copy of this description.

Please select the appropriate box:

□ I agree to participate

□ I do not agree to participate

APPENDIX C
SEMI-STRUCTURED INTERVIEW INFORMED CONSENT

UF | Institutional Review Board
UNIVERSITY of FLORIDA

INFORMED CONSENT FORM
to Participate in Research, and

AUTHORIZATION
to Collect, Use, and Disclose Protected Health Information (PHI)

INTRODUCTION

This is a research study of the attitudes of nurses toward obesity and its effects on quality of care.

Could participating in this study offer any direct benefits to you?

No, as described on page 131.

Could participating cause you any discomforts or are there any risks to you?

No, as described on page 3.

Please read this form which describes the study in some detail. I will also describe this study to you and answer all of your questions. Your participation is entirely voluntary. If you choose to participate you can change your mind at any time and withdraw from the study. You will not be penalized in any way or lose any benefits to which you would otherwise be entitled if you choose not to participate in this study or to withdraw. If you have questions about your rights as a research subject, please call the University of Florida Institutional Review Board (IRB) office at (352) 846-1494. If you decide to take part in this study, please sign this form on page 135.

GENERAL INFORMATION ABOUT THIS STUDY

1. Name of Participant ("Study Subject")

_____

2. What is the Title of this research study?

Assessing attitudes toward obesity in nurses and its effects on quality of care.

3. Who do you call if you have questions about this research study?

Janelle Garcia, Principal Investigator. Telephone: (352)392-0583 ext. 1283. Email: garciajt@hhp.ufl.edu

4. Who is paying for this research study?

There is no sponsor for this study.

5. Why is this research study being done?

The purpose of this research study is to determine what attitudes exist towards obese patients among registered nurses (RN), licensed practical nurses (LPN), and certified nursing assistants (CNA) in a rural hospital setting and to identify the factors that effect quality of patient.

You are being asked to be in this research study because of your unique experiences and perspectives as a nurse who has cared for an overweight or obese patient.

WHAT CAN YOU EXPECT IF YOU PARTICIPATE IN THIS STUDY?

6. What will your role be as a participant in this study?

Nurses who choose to enroll in this study will participate in a one-on-one interview where they will have the opportunity to share their thoughts about caring for overweight and obese patients and the factors that affect the quality of their care. Interviews will be audio taped and a note-taker will be present during the interview. The audio-taped information will be transcribed without your name. The tapes will be destroyed at the end of the study.

If you have any questions now or at any time during the study, please contact Janelle Garcia, in question 3 of this form.

7. How long will you be in this research study?

The interview will last approximately 30 to 45 minutes.

WHAT ARE THE RISKS AND BENEFITS OF THIS STUDY AND WHAT ARE YOUR OPTIONS?

8. What are the possible discomforts and risks from taking part in this research study?

You may feel uncomfortable talking about your experiences during the interview. If you feel uncomfortable at any time during the interview, we will stop the discussion. You may leave the room at any time. You do not have to answer anything that you do not wish to answer. Also, if you state something and would prefer to have it stricken from the transcription and the subsequent data analyses please let the interviewer know at any time before, during or after the interview and they will make a note to remove your comment.

If you wish to discuss the information above or any discomforts you may experience, please ask questions now or call the PI or contact person listed on the front page of this form.

9a. What are the potential benefits to you for taking part in this research study?

There is no direct benefit to you for participating in this research study.

9b. How could others possibly benefit from this study?

Information learned through this study may provide information about the barriers nurses face when caring for an overweight or obese patient and provide the rationale for increased resources and empathy training.

10c. How could the researchers benefit from this study?

In general, presenting research results helps the career of a scientist. Therefore, Janelle Garcia will complete the research requirements necessary for her doctoral degree and may benefit if the results of this study are presented at scientific meetings or in scientific journals.

11. What other choices do you have if you do not want to be in this study?

The option to taking part in this study is doing nothing. If you do not want to take part in this study, tell the Principal Investigator and do not sign this Informed Consent Form.

12a. Can you withdraw from this study?

You are free to withdraw your consent and to stop participating in this study at any time. If you do withdraw your consent, you will not be penalized in any way and you will not lose any benefits to which you are entitled.

If you decide to withdraw your consent to participate in this study for any reason, please contact Janelle Garcia at (352)392-0583.

If you have any questions regarding your rights as a research subject, please call the Institutional Review Board (IRB) office at (352) 846-1494.

12b. If you withdraw, can information about you still be used and/or collected?

If you withdraw, information about you will not be used or collected.

12c. Can the Principal Investigator withdraw you from this study?

You may be withdrawn from the study without your consent for the following reasons:

(1) You did not qualify to be in the study because you do not meet the study requirements. Ask the Principle Investigator if you would like more information about this.

WHAT ARE THE FINANCIAL ISSUES IF YOU PARTICIPATE?

13. If you choose to take part in this research study, will it cost you anything?

It will not cost you anything to participate in this research study.

14. Will you be paid for taking part in this study?

After completion of the interview, you will be given a $10 Wal-Mart gift card.

15. How will your information be collected, used and shared?

If you agree to participate in this study, the Principal Investigator will collect information about your attitudes towards obese patients. In order to do this, the Principal Investigator needs your authorization The following section describes what information will be collected, used and shared, how it will be collected, used, and shared, who will collect, use or share it, who will have access to it, how it will be secured, and what your rights are to revoke this authorization.

The following information may be collected, used, and shared with others:

The interview will be tape-recorded and ongoing field notes will be taken associated with your responses. Only Janelle Garcia will listen to the tape recordings. You will

be assigned a code name prior to the interview preventing your name from being used in the tapes and transcripts.

This information will be stored in locked filing cabinets or on computer servers with secure passwords, or encrypted electronic storage devices.

16. For what study-related purposes will your information be collected, used, and shared with others?

Your information may be collected, used, and shared with others to make sure you can participate in the research, through your participation in the research, and to evaluate the results of the research study. More specifically, your information may be collected, used, and shared with others for the following study-related purpose(s):

To gather information about the attitudes and barriers of nurses who care for overweight or obese patients.

Once this information is collected, it becomes part of the research record for this study.

17. Who will be allowed to collect, use, and share your information?

Only certain people have the legal right to collect, use and share your research records, and they will protect the privacy and security of these records to the extent the law allows. These people include the:

- the study Principal Investigator, Dr. Christine Stopka, and Dr. Beth Chaney associated with this project.
- the University of Florida Institutional Review Board (IRB; an IRB is a group of people who are responsible for looking after the rights and welfare of people taking part in research).

18. Once collected or used, who may your information be shared with?

Your information may be shared with:

- the study sponsor –Institutional sponsor - the University of Florida (who is not paying for this study)

Otherwise, your research records will not be released without your permission unless required by law or a court order.

19. If you agree to take part in this research study, how long will your information be used and shared with others?

Your information will be used by Janelle Garcia, Dr. Christine Stopka, and Dr. Beth Chaney until the end of the research study, May 2012.

You are not required to sign this consent and authorization or allow researchers to collect, use and share your information. Your refusal to sign will not affect your employment. However, you cannot participate in this research unless you allow the collection, use and sharing of your protected health information by signing this consent and authorization.

You have the right to review and copy your information. However, we can make this available only after the study is finished.

You can revoke your authorization at any time before, during, or after your participation in this study. If you revoke it, no new information will be collected about you. However, information that was already collected may still be used and shared by Janelle Garcia, Dr. Christine Stopka, and Dr. Beth Chaney, if the researchers have relied on it to complete the research. You can revoke your authorization by giving a written request with your signature on it to the Principal Investigator.

SIGNATURES

As an investigator or the investigator's representative, I have explained to the participant the purpose, the procedures, the possible benefits, and the risks of this research study; the alternative to being in the study; and how the participant's information will be collected, used, and shared with others:

Signature of Person Obtaining Consent and Authorization	Date

You have been informed about this study's purpose, procedures, possible benefits, and risks; the alternatives to being in the study; and how your protected health information will be collected, used and shared with others. You have received a copy of this Form. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask questions at any time.

You voluntarily agree to participate in this study. You hereby authorize the collection, use and sharing of your protected health information as described above. By signing this form, you are not waiving any of your legal rights.

Signature of Person Consenting and Authorizing	Date

APPENDIX D
SEMI-STRUCTURED INTERVIEW DEMOGRAPHIC SHEET

1. Gender
___Female
___Male

2. Age in years _____

3. Race _____ White
_____ Black/African American
_____ Hispanic
_____ Latino
_____ Asian/Pacific Islander
_____ Native American
_____ Other – Please specify
_____

4. Highest level of education (check one)
___ High school diploma/GED
___ CNA certification
___ LPN certification
___ A.S. in Nursing (RN certification)
___ Bachelor's degree in Nursing
___ Master's degree in Nursing
___ Doctorate degree in Nursing
___ Specialty certificate
___ Degrees other than in Nursing (please specify):
_____

8. Please estimate your annual **household** income (circle the choice that best fits):

$5,999 or less	$48,000-$59,999
$6,000-$11,999	$60,000-$89,999
$12,000-$23,999	$90,000-$119,999
$24,000-$35,999	$120,000 or more
$36,000-$47,999	

9. What's your employment status (circle the choice that best fits):

Full-time	Per diem
Part-time	Seasonal

10. Area(s) of nursing in which you are currently employed (circle the choice that best fits):

Emergency Department	Obstetrics/Labor & Delivery/Nursery
Intensive Care	Operating Room/Recovery Room
Medical/Surgical	Other (please specify):_____

11. Shift you predominantly are scheduled to work (circle the choice that best fits):

7a-7p	7a-3p	9a-5p	10a-10p
7p-7a	3p-11p	5p-1a	Other (please specify): _____

12. How many years have you been employed as a RN/LPN/CNA? (circle the choice that best fits):

1-5 years	16-20 years
6-10 years	21-25 years
11-15 years	>25 years

13. Have you attended any educational program that focused on obesity?

___ no

___ yes (explain the type and state the approximate hours):

_____

14. On a daily basis how many people do you care for whom you think are overweight or obese?

___ none

___ 1 or 2

___ 3 or more

APPENDIX E
SEMI-STRUCTURED INTERVIEW SCRIPT

Shared with Interview Participants Prior to Beginning the Interview Discussion

You have agreed to be interviewed for the study entitled "Assessing Attitudes of Nurses Toward Obesity and its Effects on Quality of Care". You are receiving a copy of this note for your references. The purpose of this study is to determine what attitudes exist towards obese patients among registered nurses (RN), licensed practical nurses (LPN), and certified nursing assistants (CNA) in a rural hospital setting and to identify the factors that effect quality of patient. This project was reviewed by the University of Florida Institutional Review Board 02.

This is a voluntary study and you may leave the interview at any time. Your responses are confidential. The discussion will be audio recorded and the recording will be destroyed once it is transcribed. There will be no identifiers used when the recording is transcribed. Please contact the Principal Investigator Janelle Garcia, Doctoral student at the College of Health and Human Performance, University of Florida, FLG building RM 71, PO Box 118210, Gainesville, Florida 32611 or by email at garciajt@hhp.ufl.edu or by phone (352) 392-0583 with any questions.

One last thing, because we are taping our discussion I ask that you please try to avoid drumming your fingers on the table, or tapping your pen or pencil on the table. Also, try to avoid tapping your feet on the table legs or chairs. I want to avoid anything that may affect the quality of our tape recording.

Thank you again for your participation and cooperation! Are you ready to begin?

Questioning:

To start I would like to give you an identifying number. The sole reason for this is to aid in the transcription process. Please write your number on the tent card provided so I can identify you by this number.

OK great- let's start with the first question: Remember, this is a discussion so talk freely.

1. Can you describe the process of admitting an overweight or obese patient to your unit?

2. Can you describe the feelings or thoughts that you or your peers experience when an overweight or obese patient is going to be admitted to your unit?
   - Can you explain why you or your peers have these feelings?
   - Do any specific characteristics of the patient cause you or your peers to have these feelings?

3. Can you describe the feelings or thoughts that you or your peers experience when caring for an overweight or obese patient?
    - Can you explain why you or your peers have these feelings?
    - Do any specific characteristics of the patient cause you or your peers to have these feelings?
    - Does any particular patient-related task cause you or your peers to have these feelings?

4. What barriers do you face when caring for an overweight or obese patient?

5. What other factors affect how you care for an overweight or obese patient?

6. Can you discuss how quality of care may differ between overweight/obese patients as opposed to normal or underweight patients?

We are almost at the end of our time. I am going to summarize what we have talked about today and you can tell us if I have interpreted your thoughts correctly.

Closing Comments:

Before we end, I'd like to ask you if there's anything else you'd like to say on the topic of caring for overweight and obese patients as we have described it today. Is there anything we haven't mentioned that would be important to know?

Is there anything you would like to have stricken from the record? You will not be penalized in any way.

Thank you so much for coming today. Your time is very much appreciated and your insights have been very helpful.

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BIOGRAPHICAL SKETCH

Janelle Garcia was born in Parma, Ohio. The fourth out of five children, she grew up mostly in Arcadia, Florida. Janelle graduated from DeSoto County High School in 2002. She earned a Bachelor of Science in biomedical science with a minor in biomedical physics from the University of South Florida (USF) in 2005. After graduating with her bachelor's degree, Janelle worked as a Study Coordinator/Research Associate at H. Lee Moffitt Cancer Center and Research Institute in the Department of Health Outcomes and Behavior under Dr. Paul Jacobsen until she relocated for her graduate studies.

Janelle received a Master of Science in applied physiology and kinesiology with a concentration in human performance from the University of Florida (UF) in 2008. During Janelle's master's studies she interned with the University Athletic Association at UF in the strength and conditioning department under Coach Mickey Marotti. She also successfully obtained her Certified Strength and Conditioning Specialist certification through the National Strength and Conditioning Association.

Upon graduating with her master's degree, Janelle entered a doctoral program at UF in the Department of Health Education and Behavior. As a doctoral student, she worked as a teaching and research assistant. Janelle received her Ph.D. in August 2012. Her research interests include obesity prevention, weight bias in the health professions, and physical fitness and wellness. Janelle plans to work in worksite health promotion and conduct obesity-related research after graduating.