

2016

Childhood obesity and nursing interventions

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Degree Type

Open Access Senior Honors Thesis

Department

Nursing

First Advisor

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Keywords

Prevention, Healthcare professional, Childhood obesity, Nursing intervention

Subject Categories

Nursing

CHILDHOOD OBESITY AND NURSING INTERVENTIONS

By

Rebecca Oswald

A Senior Thesis Submitted to the

Eastern Michigan University

Honors College

in Partial Fulfillment of the Requirements for Graduation

with Honors in Nursing

Approved at Ypsilanti, Michigan, on this date 12/12/14

Childhood Obesity and Nursing Interventions

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Senior Honors Thesis

Submitted to the Honors College

For Fulfillment of Departmental Honors

For the degree of

BACHELOR OF SCIENCE

In

Nursing

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December 2016

Eastern Michigan University

Ypsilanti, Michigan

Abstract

This paper will examine obesity and the multitude of methods for a healthcare professional to help influence their patients using health promotion techniques for those who are at risk for obesity. This paper will discuss the pathophysiology of obesity as well as childhood obesity risk factors that pertain to this disease. This paper will investigate the nursing interventions being used today to combat childhood obesity within the following settings; school, in-patient, and clinic.

Keywords: childhood obesity, nursing interventions, prevention, healthcare professional

Childhood Obesity Introduction

Obesity rates within the United States are continuing to rise at epic proportions. These rising rates have alarmed those within healthcare, because healthcare professionals now need to better understand obesity and how to treat it. All aspects of obesity such as the pathophysiology, predispositions, screenings, and treatment of the disease need to be understood, so advances can be made in decreasing the risk and number of cases of this growing epidemic.

Obesity rates among children in the United States is also rising rapidly, and nurses are in a perfect position to help, but they first must better understand the disease. Being cognizant of the risk factors and co-morbidities that develop because of obesity, will better guide interventions that nurses can implement to help fight this upward battle and lead America in a healthier direction.

Obesity

Obesity is defined as “the excessive accumulation of body fat resulting in a body mass index (BMI) that is significantly above the norm and is associated with increased risk of illness, disability, and death” (Carson-DeWitt et al., 2011). Some co-morbid conditions associated with obesity are type 2 diabetes, hyperlipidemia, and hypertension. These co-morbid conditions can lead to premature death in individuals who are obese.

Pathophysiology of Obesity

Using the definition of obesity, the disproportionate amount of adipose tissue within the body occurs for a multitude of reasons. A person may develop obesity because of prolonged immobilization, which is the result of little to no physical activity. Obesity occurs due to excessive overeating, and combined with lack of or limited physical activity. The easiest way to describe the pathophysiology of obesity is that calories in are greater than calories out. Another

theory is that obesity results from a person's metabolism and hormone irregularities, which leads to dysfunction in satiety hormones and long-term energy storage (Koshy, Bobe, & Brady, 2013). A change in someone's sensitivity to satiation hormones can lead to overeating. The development of co-morbid conditions, because of obesity is very concerning. Type 2 diabetes, hypertension, hyperlipidemia, asthma, and joint problems can quickly become not only costly for the patient, but to their overall health as well (Potter, Perry, Stockert, & Hall, 2013). Type 2 diabetes can result in insulin dependent diabetes, also known as type 1 diabetes, because the cells can become desensitized to insulin. This desensitization of insulin occurs, because a person, who has a functioning pancreas, keeps pumping out more insulin to decrease high blood sugar levels and the cells stop responding to the insulin. This progresses until the pancreas can no longer produce the amount of insulin necessary to decrease the blood sugar, and exogenous insulin will need to be supplied.

Hypertension and hyperlipidemia can lead to many cardiovascular diseases and conditions such as heart failure and coronary artery disease. These conditions are exacerbated in a patient who is obese, because they may have trouble with mobility and nutritious eating already. Asthma or difficulty breathing develops with obese patients, because lung expansion is decreased, due to excessive weight, which restricts chest wall expansion. Joint problems manifest from obesity, because prolonged extra weight on the joints causes damage. When an obese person has joint problems, it can be even harder to perform physical activity to help treat their obesity. It is important that healthcare professionals understand the pathophysiology of obesity, and the comorbidities, so they can more appropriately educate their patients who are at risk.

Predispositions and Screening

Healthcare professionals must understand the genetic predispositions in adults that can lead to obesity and screening techniques available for obesity prevention. Obesity's predispositions can be genetic, socioeconomic, and cultural. Genetics plays a large role in a person's metabolism and their hormone development. If there are underlying issues with one's metabolism and hormone secretion, this can lead to obesity. Socioeconomic status is also a predisposition to obesity, because healthier foods are more expensive than low quality foods, and poor eating habits can contribute to obesity. Interestingly, Hollowood et al., found that girls within the urban community are at higher risk for developing obesity than girls in suburbia (2013). Therefore, this knowledge guides healthcare professionals in their education of their pediatric patients as it relates to obesity prevention. Obesity can also be influenced by culture. A person's culture including, the types of foods they eat and how their culture views physical activity can influence that specific culture's obesity rates. Considering a person's predisposition to obesity related to culture and dietary beliefs must be understood by the healthcare professional so that they are able to perform appropriate and most important culturally sensitive screening for obesity. The health care provider will gather the information for the screening using a scale, measuring tape, growth charts, and skin calipers (Jensen, 2011). These tools will help determine a person's waist circumference, which should be 102cm or less for a man and 88cm or less for a woman, also will help with skin fold thickness, any person above the 95th percentile is at risk for altered nutrition (Jensen, 2011). Another tool that many healthcare professionals use for screening of obesity is calculation of a patient's BMI. The body mass index is a calculation of a person's weight (in kilograms) over the person's height (in meters squared). A BMI of 30.0 or above is an indication that a person is obese (Jensen, 2011). The BMI is not always an accurate assessment of a patient's health, since a body builder would have a large BMI, even though they

are not obese, it is their muscle that adds the extra weight, but the BMI in combination with the other methods of prescreening can give a healthcare professional a better picture of the patient's health and can help assess for risk factors to obesity. Once a patient is diagnosed with obesity there are a multitude of treatment options available.

Treatment of Obesity

After obesity is diagnosed in the adult patient, it is up to the healthcare provider to establish a treatment plan. The treatment options are usually done from least invasive to most invasive, unless the condition is life threatening. Most of the treatments for obesity start with diet, exercise, lifestyle and behavioral changes (Hollywood et al., 2013). A nutrition consult can be set up by the physician or nurse, which can help the patient with a meal and exercise plan, along with lifestyle changes. If diet and exercise alone are not enough, the provider may prescribe pharmaceutical options. The most often prescribed medication for obesity are anorexiant, which act upon the central nervous system to suppress appetite and increase basal metabolic rate within patients (Lilley, Collins, & Snyder, 2014). But, just using the pharmaceuticals alone, without diet and exercise will be an unsuccessful treatment option. Phentermine is a common prescribed anorexiant and is structurally like amphetamines, but has less abuse potential (Lilley et al., 2014). There is an over-the-counter antiobesity drug called orlistat which a person can talk with their physician about using. Orlistat is a lipase inhibitor, so it binds to lipases so they do not get absorbed. But, a physician should teach the patient about reducing their dietary intake of fat to less than 30% of their total caloric intake, which can reduce the gastrointestinal (GI) adverse effects, such as fecal incontinence (Lilley et al., 2014). When diet, exercise, and pharmaceuticals are not enough to treat a person's obesity, invasive options like bariatric surgery are used. For a physician to approve a bariatric surgery a patient needs to

have a BMI of 40+ or a BMI of 35-39.9 with a comorbid condition (Koshy et al., 2013). Bariatric surgeries are invasive, and although the procedures are now becoming more advanced a patient is still at risk. Proper education of what each surgery will be and how the patient's life will change after the procedure must be done. Also, obese patients have higher risks when going into surgery, because of their reduced pulmonary abilities and cardiovascular function (Potter et al., 2013). After the patient, has been educated on the risk and advantages to bariatric surgery there are a few options they can choose. There is laparoscopic adjustable gastric band, vertical sleeve gastrectomy, roux-en-Y gastric bypass, and biliopancreatic diversion with or without duodenal switch (Koshy et al., 2013). The surgery most appropriate for the patient will be decided on with the surgeon and the patient. Education is key with the treatment of obesity.

It is vital that healthcare providers understand the pathophysiology, predispositions, prescreening techniques, and treatment of obesity in adults. The pathophysiology can be due to a multitude of issues including, hormone dysfunction and sedentary lifestyle. Predispositions can be linked to genetics, socioeconomic status, and culture. Prescreening techniques include performing a BMI calculation. Treatment of obesity can range from diet and exercise to bariatric surgery. These topics discussed are important for healthcare professionals, because they can recognize and treat their patient's and improve the health of the nation.

Childhood Obesity

Childhood obesity, like obesity in the adult population, uses the BMI measurement to define the target ranges for overweight and obese in children; a BMI greater than or equal to the 95th percentile is considered obese for a child, and greater than or equal to the 85th percentile is overweight (Sorg, Yehle, Coddington, & Ahmed, 2013). Obesity is not just a disease that affects adults anymore, rather it is effecting the pediatric population at an alarming rate. One-third of the

children are obese or overweight by the age of two-years-old (Kubo et al., 2014), with eating habits established by the age of three-years-old. The specialists within the field of childhood obesity are saying that parents of obese children will outlive their children because of the health problems and conditions that ensue when obesity develops within the child (Hopkins, DeCristofaro, & Elliott, 2011). Children who are obese are more likely to carry their weight problems into adulthood. Experts have found “that an adolescent that is overweight has a 50% - 70% chance of becoming an overweight or obese adult” (Hopkins et al., 2011, p. 279). Similarly, “the Center for Disease Control (2009) reported that 80% of children who were overweight at aged 10 – 15 years were obese as adults at age 25 years, and 25% of obese adults were overweight as children” (DiNapoli, Synyk, & Waddicor, 2011, p.125). These alarming statistics mean that children will be experiencing the effects of this disease well into adulthood. Understanding the risk factors that develop within the pediatric population as it relates to obesity and prevention is going to be key in the treatment of, since management of obesity is “inefficient, ineffective, and costly” (Kubo et al., 2014, p. 2996).

Childhood Obesity Risk Factors

As previously discussed, obesity comes along with a multitude of co-morbidities. These co-morbidities are similarly to the ones effecting adults, but there are some differences. Pediatric obesity co-morbidities and risk factors are as follows:

Orthopedic problems associated with childhood obesity include slipped capital femoral epiphysis, tibia vara, and osteoarthritis. The multiple gastrointestinal conditions include nonalcoholic fatty liver disease, gastroesophageal reflux disease, gallbladder disease, and possibly an altered response to medications. Obesity places the child at risk for sleep apnea and asthma because of mechanical and inflammatory processes. Concurrent

metabolic and cardiac consequences of childhood obesity include insulin resistance and Type 2 diabetes mellitus, dyslipidemia, hyperlipidemia, proteinemia, impaired glucose tolerance, metabolic syndrome, and left ventricular hypertrophy. Psychological diagnoses and social problems also exist at higher rates in those with childhood obesity. (Hopkins et al., 2011, p. 279-280)

All of these conditions make the child's health and quality of life decline. These conditions, along with obesity are very complex and require diligent care from the healthcare team and the family. The orthopedic, metabolic, cardiovascular, respiratory, and psychosocial problems that are associated with obesity have an extreme effect on the child's daily life. The orthopedic conditions cause pain and bone deformities for the child, which can be hard on both the child and family. The metabolic conditions that develop from obesity, depending on the age at which they develop, can be taxing on the family to give insulin injections to the child. Also, it can be very traumatic to the child and parent to perform these insulin injections, even though they may be necessary for the treatment of their condition. Metabolic conditions that develop with obesity like Type 2 diabetes mellitus, this diagnosis "...alone increases the risk of acute myocardial infarction, cerebrovascular accident, or heart failure at an early age (such as in the third or fourth decade of life)" (Hopkins et al., 2011, p. 280). The cardiovascular conditions (hyperlipidemia, hypertension, hyperinsulinemia) increase the child's likelihood to be obese or overweight by 2.4 times (Hopkins et al., 2011). The respiratory conditions that follow can lead a child to activity intolerance. Asthma medications are quite costly and asthma attacks are very frightening to a child and family. Sleep apnea can lead to daytime sleepiness and therefore loss of productivity in school in children who have this condition. Psychosocial issues within children who are obese are a major concern for healthcare professionals. "Severely obese children and

adolescents have reported a low health related quality of life, one equal to that of children with cancer” (Hopkins et al., 2011, p. 280). Mental health among the obese pediatric population needs to be assessed and considered when caring for them, since this is how the majority of them are feeling about themselves. Primary care providers along with nurses should understand the risk factors of obesity and continue to read up on the new research that is being conducted in this area, since this issue is so abundant.

There are many factors that influence a child’s development, and a mother has a huge influence on this development. “The programming of obesity starts very early, even in utero, where gestational and perinatal factors affect the offspring’s obesity trajectory and metabolic imprinting” (Kubo et al., 2014, p. 2998). A newly researched risk factor for childhood obesity is maternal gestational diabetes mellitus (GDM). It has been studied that these high glucose levels desensitize the child’s cells, but also have the child over produce insulin, which therefore causes an insulin resistance in the child’s cells. This dysregulation has led to increased obesity levels in the children born from the mothers who had gestational diabetes mellitus.

In our multiethnic group of mother-daughter pairs, we observed that maternal pregnancy hyperglycemia, whether just below the diagnostic threshold of gestational diabetes mellitus or as gestational diabetes mellitus, were both associated with increased risk of childhood obesity, findings that held independent of maternal age at delivery, race/ethnicity, pregravid BMI, girls’ age, and age at onset of puberty. In addition, we found that the risk of childhood obesity was highest among offspring of mothers with gestational diabetes mellitus and pregravid obesity. (Kubo et al., 2014, p. 2999).

Throughout the research of mothers with GDM and their children having obesity is having a positive correlation. The other maternal risk factor studied in the last study was maternal obesity

before birth as well. “Childhood growth trajectories of etiological subgroups of large for gestational age newborns” by Xie, Wang, Xiuhong, & Xiaozhong examined maternal GDM effects on children also had similar results to the previous study by Kubo et al., (2014). This study inspected whether newborns who had mothers with GDM or diabetes mellitus in utero placed them at higher risk for different metabolic disorders. This study found that,

The large for gestational age and overweight/or obesity before pregnancy + diabetes mellitus subgroup had ‘continuous high rising’ trajectory of BMI z score from age 9 months to 4 years, suggesting that this subgroup of large for gestational age newborns might be particularly at high risk of childhood obesity. We suspect that this unique BMI trajectory may be related to programming of fetal metabolic dysfunction, shared unhealthy family environment, and/or parental overfeeding practices. (Xie, Wang, Xiuhong, & Xiaozhong, 2016, p. 64)

So, not only did Xie et al., (2016) discover a correlation with GDM and childhood obesity, but they also discussed reasons as to why this correlation exists. Understanding why the correlation occurs is key to prevention and treatment strategies. The Xie et al., (2016) reviewed the causes as follows:

First, mothers with both overweight/or obesity before pregnancy + diabetes mellitus tend to have high levels of insulin resistance. Maternal insulin resistance and its corresponding hyperglycemia can result in fetal hyperinsulinemia and greater adipogenesis, both of which are well-established risk factors for childhood obesity. Second, these mothers and possibly other adult family members tend to live unhealthy lifestyles, including high intake of energy-dense food and lack of physical activity. Third, these mothers also may

adopt unhealthy feeding practices, such as early introduction of solid food, over-feeding, and frequent use of high-sugar and high-fat solid food. (Xie et al., 2016, p. 64)

The metabolic changes that occur when a fetus is exposed to high levels of glucose during development have been known to lead to childhood obesity and insulin resistance in the child. However, close glucose monitoring can thwart this issue for mothers with GDM or diabetes before pregnancy. Unhealthy lifestyles are a huge risk factor for the child, since the child usually adopts the nutritional habits of the parents. The last factor Xie et al., (2016) mentioned in regards to childhood obesity correlation with GDM was in relation to feeding patterns. Feeding patterns are extremely important for development. A newborn should be breastfed or bottle fed until six months of age, since this provides complete nutrition for the child. Solid foods can be introduced after six months, but should not be used as exclusive source of nutrition for the child. Weaning a child from breastmilk and/or formula to solid foods is done over time by replacing one bottle feed or breastfeed with one solid feeding. Parents should make sure that their solid food choices are nutritional and appropriate, and not high sodium and high sugar content foods for their child. Those types of unhealthy food choices can lead to an unhealthy lifestyle as well as predispose the child to multiple conditions such as hypertension, Type 2 diabetes mellitus, and hyperlipidemia.

The final study regarding GDM that was examined was “Growth and obesity through the first 7 y of life in association with levels of maternal glycemia during pregnancy: A prospective cohort study” by Yeyi et al., (2016) considered how fasting plasma glucose (FPG) levels of mothers during pregnancy effected their offspring’s chances of developing obesity long-term. During this study, it was discovered that,

Women's FPG concentrations during pregnancies complicated by GDM were significantly and positively associated with offspring birth size (i.e., ponderal index, macrosomia, and large for gestational age) after adjustment for prepregnancy BMI. The statistically significant association did not persist in infancy but reappeared at 7 y. Taken together, these findings suggest that the long-term impact of maternal glycemia during pregnancy on offspring growth and obesity might be age specific, particularly apparent at birth and later ages, and might vary by levels of glycemia. (Yeyi et al., 2016, p. 797-798)

Yeyi et al., (2016) considers the varying levels of glycemia and the effects it has on the child in utero. Blood glucose can be monitored and controlled throughout pregnancy, so that the mother and child are not exposed to hyperglycemia. All three of these studies have reported that high levels of glucose in utero can lead to childhood obesity and metabolic dysregulation for the child after birth. If healthcare professionals can help combat the hyperglycemia with tight glucose control and education to mothers about the effects of hyperglycemia on a fetus, the medical field would be moving in the right direction in preventing childhood obesity.

Nursing Interventions for Schools

Childhood obesity interventions have been implemented at schools and even in the preschool settings as well. "...children who are overweight or obese in their preschool years are five times more likely to carry their weight issues into adulthood" (Tyler, Fruh, & Mulekar, 2014, p. 199). With this alarming statistic, it is no wonder experts are trying to apply effective obesity prevention tactics within the school systems.

"A systematic review of interventions to promote physical activity in the preschool setting" by Temple and Robinson (2014) found that, "... overweight five-year-olds were four times as likely as normal weight children to become obese by eighth grade" (p. 274). Knowing

that eating habits are established at the age of three and that an overweight five-year-old is four times more likely to become obese by eighth grade puts more pressure on the healthcare system to implement strategies to impede this issue. Temple and Robinson (2014) found that,

...measured physical activity via accelerometers, U.S. preschool children spent more than 60% of their active time in light activity, more than 6 hours each day being sedentary, and spent only 15 minutes per day in moderate-to-vigorous physical activity. Average daily moderate-to-vigorous physical activity in preschool-aged children has been found to vary from 12 minutes to 36 minutes per day, and time spent in sedentary activity has been found to range from 217 minutes to 389 minutes per day, dependent on the childcare center they were attending. (p. 275)

This systematic review by Temple and Robinson (2014) showed that preschoolers are not getting enough physical activity. Decreased physical activity is a risk factor for obesity, thus supporting why childhood obesity rates are rising. This systematic review discussed interventions to combat physical inactivity for a preschool-aged child, while at preschool. “Environmental changes appear to show promise in increasing physical activity in this age group. Playground markings and the introduction of small play equipment or recycled materials may be feasible for preschools with limited budgets” (Temple & Robinson, 2014, p. 282). If a district does not have a large budget the study suggested that a playground with less equipment would increase moderate-to-vigorous activity, because the children would have more room to run around and/or play. The use of recycled materials inside the classrooms helped intrigue the preschoolers’ minds and kept them active, rather than being sedentary.

Moving from preschool interventions, there are multiple studies being done on childhood obesity interventions in school settings from grades K-12. The reason scientists chose to study childhood obesity interventions within a school setting is because,

Schools serve as an excellent venue to provide students with the opportunity for daily physical activity, to teach the importance of regular physical activity to build skills that support active lifestyles. Schools have access to school nurses who can provide screening, counseling and continuum of care. (Wright, Giger, Norris, & Suro, 2012, p. 728)

The school setting provides a lot of opportunities for education and health information that the child can be exposed to by their teacher, peers, staff, and school nurse. The school is also ideal for interventions because, "...children spend many waking hours and consume one third to one half of their daily calories in schools" (Quelly, 2014, p. 292). Taking these facts into account and using them to the interventionists' advantage is how great plans came about to prevent childhood obesity.

The study "Impact of nurse-directed, coordinated school health program to enhance physical activity behaviors and reduce body mass index among minority children: A parallel-group, randomized control trial" focused on the inner-city population, which is at high-risk for obesity. This study wanted to find out the effectiveness and response to a nurse coordinated comprehensive school health program, which would be family-centered, because when in the practice of pediatrics, the care must be family-centered. This study found out that,

Despite the initial gender differences, both males and females had improved health outcomes post-intervention. This current study demonstrates that it is possible for nurse to successfully address childhood obesity during a critical period in their lives and

increase health outcomes for both males and females, through a culturally appropriate, multifaceted educational and environmental change approach and involves the community, schools, families and students. (Wright et al., 2012, p. 734)

Wright et al., (2012) was an impressive study in the fact that it incorporated school nurses in childhood obesity interventions. Nursing is a profession that looks at the patient holistically, so health promotion and education is a large portion of nursing care. This study also involved the community within the intervention, which is a common practice for a holistic approach. It was found that,

Community-based participatory research (CBPR) has been recommended as an effective way to bring collaborative stakeholders from the university and the community setting all together to create partnerships to prevent health disparities in childhood obesity. Through CBPR, each partner brings resources to the table, including funding, research skills, leadership, and staff-support to create an intervention program that is based in the community, thus giving crucial services to children who may not otherwise have access to them. (Wright et al., 2012, p. 728)

Using interdisciplinary methods to prevent and treat childhood obesity is what the experts are finding is effective. Collaboration among the community, family, school, and healthcare field is how these interventions are achieved. Some researchers are figuring out that, “school-based health clinics are becoming increasingly common, and while they are designed to provide services in conjunction with the child’s primary care provider, the school clinic often becomes the primary place of health care for students” (Sorg et al., 2013, p. 20). Many children of low socioeconomic class will avoid seeing the doctor, because of the cost and access, but if they can see the school clinic or nurse it can often be their first chance at intervention..

School nurses offer important services to their school systems. Without school nurses the schools would be a lot less healthy and safe. In “The role and impact of nurses in American elementary schools: A systematic review of the research” article by Lineberry and Ickes, it stated the services a school nurse/clinic should provide,

...assessment of health complaints, medication administration, and care for students with special health care needs; a system for managing emergencies and urgent situations; mandated health screening programs, verifications of immunizations, and infectious disease reporting; and identification and management of students’ chronic health care needs that affect educational achievement. (Lineberry & Ickes, 2015, p. 23)

These services offer many benefits to the students and staff of the school for which they provide for. It is vital that a school nurse provides these services as they are very important not just for the child, but the community. Reporting infectious disease outbreaks is an imperative job, and is also time sensitive. Providing health screenings is also a very effective way that nurses can screen children for obesity and other health risk that they may have. “Body mass index (BMI) measurement is not the most widely accepted method used for screening for overweight and obesity in children in the United States” (Hopkins et al., 2011, p. 278). Using correct measurements and screening tools is key to identifying children who are at-risk for obesity. One of the many diseases that develops with obesity is diabetes mellitus, and a child may need insulin. “...school nurses must be trained and available to measure their glucose levels, recommend meals and snacks that meet their carbohydrate needs, and administer insulin as necessary” (Lineberry & Ickes, 2015, p. 31). School nurses are not only educating children on health management, but they are also teaching faculty. Different types of this teaching include:

School nurses provide education to teachers on student health records, enabling them to more directly access critical information related to their students and engage in conversations with students, parents, nurses, and other school personnel to provide a safer environment for students. School nurses provide education to teachers on other aspects of health such as nutrition, encouraging teachers to deliver nutrition curriculum to their classes in a train-the-trainer model. (Lineberry & Ickes, 2015, p. 29)

Safety is always a priority for a nurse. So, educating the teachers on different health topics, and providing the teacher with a better way of communicating with the child's family will create a safer and trusting environment. As it pertains to childhood obesity, having the school nurse educate the teachers on nutrition and then present the information to their classrooms is an excellent way to get critical information to the masses. "School teachers and administrators should regularly collaborate with school nurses for the delivery of health-related curriculum in classrooms and schoolwide" (Lineberry & Ickes, 2015, p. 31). Within the healthcare field, interdisciplinary work is encouraged, because it allows people from their expertise and field to collaborate and figure out a solution to a problem. Nurses can use their health and sciences background to educate the teachers and administration on health-related issues (i.e. obesity, nutrition, etc.) while the teachers can use their education background to come up with interactive ways to engage the kids to get the information across.

A school nurse is a key component in thwarting childhood obesity. Every school nurse has many responsibilities and tasks they must fulfill daily. The last study looked at a school nurses' barriers to childhood obesity interventions. This study worked off from a philosophy which was,

A theoretical framework guided by Bandura's model of health promotion using social cognitive theory directed this research into school nurse practices to improve the health of children. In this theoretical framework, self-efficacy is described as negatively affecting perceived barriers and positively influencing perceived benefits and childhood obesity prevention (COP) practices. (Quelly, 2014, p. 292)

The school nurses work under the structure of self-efficacy, or the belief in themselves to perform a task that will lead to a specific outcome. Under this self-efficacy philosophy, the nurse views barriers in their care as negative, but if given tools to overcome barriers then the nurse can achieve their goal. Tools to overcome barriers can be education, prioritization, and resources. "Most school nurses perceived barriers to COP included inadequate, inappropriate, and/or negative parental responses, insufficient time and excessive workloads, and limited school and community resources" (Quelly, 2014, p. 294). When a parent hears that their child has a disease, such as obesity, this may be a negative reflection on them and they may become upset. De-escalating a situation and learning how to therapeutically communicate is part of a nurse's job. Insufficient time and a hefty workload as a school nurse is expected, but prioritizing care and utilizing proper resources within the school system is vital to obesity prevention. "Effective interventions to promote school nurse COP self-efficacy should include activities such as observation, demonstration/return demonstration, role-playing, and verbal encouragement from an instructor or a mentor" (Quelly, 2014, p. 300). These activities are used throughout the nursing profession as effective methods of teaching. Demonstration/return demonstration, also known as teach-back, is a highly effective method used in the clinical setting, and now being used as a COP technique by school nurses. Verbal encouragement works very well in the

pediatric population, because of positive reinforcement. If school nurses use more self-efficacy they can deliver better, safer care to children, and help curb childhood obesity.

Nursing Interventions for In-Patient

Nurses that work inside the hospitals can help prevent obesity as well. A child may be admitted to the hospital because of a complication related to obesity. “Experts recommend that children entering the hospital be screened for obesity and that specific nutritional and educational plans be in place” (Tyler et al., 2014, p. 199). Even in-patient settings are working toward battling childhood obesity, and they are working from secondary prevention, but also primary prevention with nutritional information too.

Nurses are qualified to deliver health promotion information to children and their families regarding obesity. “Regardless of which prevention or intervention is selected for treatment, professional nurses are prepared educationally to provide care for children with alterations in health which would optimally position them to care for children who are overweight” (Snethen, Treisman, Buseh, & Kelber, 2014, p. s101). Registered nurses all have been educated on how to care for a child who is overweight and obese, therefore there should not be an issue in-patient when taking care of this pediatric population. Although, review of the literature is suggesting that nurses are finding themselves to be deficient when providing care to obese or overweight children.

Despite the American Academy of Pediatrics (AAP) recommendations, many providers do not discuss obesity prevention due to their perceived lack of knowledge on the topic related to assessment, treatment, and counseling, and many providers commonly do not take proper weight and height measurements but rely only on clinical impressions to

determine overweight and obesity status in the pediatric population. (Tyler et al., 2014, p. 199)

According to the literature, this lack of knowledge is a common barrier for nurses. “Pediatric patients may not receive education about obesity while in an in-patient unit for many different reasons including lack of time and lack of knowledge” (DiNapoli et al., 2011, p. 125). This perception, or self-efficacy, of the nurses’ knowledge on obesity plays a big role in whether education will take place. “The review of the literature demonstrated that although overweight and obesity education is cost effective, healthcare providers report being ill-equipped to provide such education...as their lack of control over what happens in the home setting” (DiNapoli et al., 2011, p. 126). Obesity management is seen over an extended period of time. The in-patient setting generally only allows the nurse to set and see-through short-term goals, with a patient. A nurse in an in-patient setting can feel helpless to what occurs after the child leaves the hospital, regarding the child’s long-term goals. The in-patient nurse can aid the child and their family with obesity management by setting long-term goals with the child during a hospital stay, and the primary care can follow up at a later date. This goal-setting, both short and long-term, with the patient can alleviate the vulnerability nurses are feeling toward their patient’s outcomes after they are discharged.

Nursing Interventions for Pediatric Nurse Practitioners

Pediatric nurse practitioners (PNPs) are in a pivotal role for primary, secondary, and tertiary prevention of childhood obesity. “According to the AAP, one valuable way to prevent childhood overweight and obesity is for providers to include an obesity prevention discussion with parents at each well-child examination in the ambulatory setting” (Tyler et al., 2014, p. 199). Primary prevention is the way healthcare is moving toward. Education on obesity

prevention and the co-morbidities that come along with this disease is far less costly than treatment of obesity and these conditions.

Another role a PNP can take on is secondary prevention of obesity. Each child during a well-child visit should be screened for overweight and obesity risk factors and the presence of the disease. Nurses should make sure that their measurements are accurate for height and weight, when calculating BMI. Additionally, a factor that some healthcare professionals forget about is that around fall and winter time the children will be wearing more clothes and heavier boots, so making sure their weight is as accurate as possible is a vital component in the screening process.

Tertiary prevention is a huge way in which PNPs are involved in the obesity epidemic. Throughout the management of childhood obesity, a PNP is in many different roles for the patient and the family,

When treating an obese child in the primary care setting, the PNP serves as diagnostician, educator, and care coordinator. In accordance with the AAPs recommendations on family-centered care, the PNP must form a collaborative relationship with the family and educate them as to why their involvement is essential to the child's success in a weight management program. (Sorg et al., 2013, p.17)

The PNP must take control of the child's health and advocate on their behalf. Advocating for the child's health helps the PNP form a collaborative bond with the family and patient, which makes for better patient outcomes and safer patient care.

Safe patient care is what healthcare teams strive for and by putting checks and balances in place hospitals can achieve safer environments for patients. After a patient's BMI screening places them in the 95th percentile, then the PNP can direct the patient's care accordingly. Before

a PNP can start treating a child with obesity there are a few checks and balances to make sure the diagnosis of obesity is correct.

Prior to initiating a weight-loss program, the PNP must rule out organic causes of obesity in the child. Hormonal conditions such as hypothyroidism, genetic syndromes, gene associations, and illnesses such as polycystic ovarian syndrome and Cushing disease are potential causes of childhood obesity. After establishing a diagnosis of primary obesity, the PNP should determine if there is a presence of or risk for developing health conditions that from obesity...A complete review of systems is necessary when initiating an obesity treatment plan; the review of systems must be comprehensive and aimed at detecting any obesity-related complications. (Sorg et al., 2013, p. 17-18)

The extensive assessment process of the child is to make sure they are not misdiagnosed with obesity and to evaluate whether there are obesity driven co-morbidities present that must be treated. Once the child has the diagnosis of obesity and has started a treatment plan, they can be referred to specialists if clinically indicated. The problem noted in the literature was the small number of specialists accessible. There are a limited number of obesity specialists available for referral, especially in rural and medically underserved areas. An estimated 66% of nurse practitioners practice in outpatient primary care facilities, and 20% of these are located in rural or frontier settings where access to specialty medical services is limited (Sorg et al., 2013, p. 14). A PNP should take these numbers into consideration when referring the child to a specialist. A different solution would be to reach out to other professions that could be of help, such as a registered dietitian, physical therapist, or personal trainer. Another solution would be that in an underserved area the PNP is going to have to be multiple roles for managing a child's case who has obesity, and the nurse must adjust accordingly.

The article, “How can primary care providers manage pediatric obesity in the real world?” by Hopkins et al., (2011) discussed how PNPs can manage obese children following the Expert Committee Recommendations.

The ‘Expert Committee’ guideline, endorsed by 15 professional organizations was published in 2007. This clinical practice guideline provides an overview of the subject, recommendations regarding screening and clinical evaluation, and evidence-based intervention and management. The Expert Committee recommends using a staged treatment plan integrating evidence-based effective treatment options. (Hopkins et al., 2011, p. 280)

This staged treatment plan to manage childhood obesity has a total of 4 stages and with each stage the intensity increases.

Stage 1 – is the ‘prevention-plus’ tier. At this stage, overweight and obese children and families focus on healthy lifestyle (eating and activity) that lead to prevention of obesity in an effort to normalize BMI. The entire family is encouraged to partake in lifestyle changes. Motivational Interviewing is used, which incorporates family, patient, and provider involvement in goal setting. (Hopkins et al., 2011, p. 280)

During this stage the emphasis is on prevention with the added healthy lifestyle education. Motivational Interviewing is a therapeutic communication technique used in nursing that has numerous benefits, such as increasing intrinsic motivation, client-centered, and goal-oriented.

Stage 2 – if after 3 – 6 months, the child has not achieved appropriate weight loss goals, the provider is to then advance the obesity treatment to the next stage (structured weight management). During this stage, the aim is to advance support and increase specific goals

using behavior monitoring (diet and activity logs) and positive reinforcement methods.

Office visits need to take place monthly. (Hopkins et al., 2011, p. 282)

At this stage, the PNP increases support with the child and family. The nurse should continue to provide positive feedback during office visits, and make sure goals are S.M.A.R.T. (specific, measurable, attainable, realistic, and time-based) for the child's weight-loss. Monthly office visits will allow the PNP to check in with the child to make sure they are achieving their goals, and adjust them if necessary.

Stage 3 – once again, if goals are not met, recommendations are to advance to the next stage, incorporating comprehensive multidisciplinary interventions which also increase the intensity of behavioral changes. A multidisciplinary team with experience in childhood obesity should be in place or available, including a behavioral counselor, registered dietician, exercise specialist, as well as the coordinating primary care provider who continues to monitor medical issues and promote support with the family. (Hopkins et al., 2011, p. 283)

At this stage, is when the introduction of multidisciplinary approaches will be incorporated into the child's care. Since the child's weight-loss goals were not achieved, the PNP needs to bring in specialists who can integrate their expertise into the child's treatment plan. The PNP will still need to observe the patient for signs of co-morbidities and/or complications from obesity.

Stage 4 – if goals for weight reduction for the severely obese child are not met with stage 3 interventions, then a referral to a tertiary center for specialized interventions is indicated. These interventions encompass pharmacologic treatment, a very low calorie diet, and bariatric surgery. (Hopkins et al., 2011, p. 283)

For this stage, the PNP will have to consult an obesity specialist on what the next treatment option should be for the child. The specialist might suggest medications along with a strict diet or surgery, if that is the safer option. Throughout all four stages the nurse must do what is safest and best for the child and family.

The Expert Committee Recommendations effectiveness were reviewed in “The impact of the 2007 Expert Committee Recommendations on childhood obesity preventive care in primary care settings in the United States” by Tanda and Salsberry (2014). “The Expert Committee Recommendations (ECRs) also called for collaborations among communities, schools, families, and healthcare providers to create an environment to support healthy food choices and physical activities” (Tanda & Salsberry, 2014, p. 242). The ECRs were responsible for the staged treatment plan to manage childhood obesity for PNPs and other healthcare providers. After implementing the recommendations “the current study was aimed at investigating the impact of the ECRs on childhood obesity preventive care provisions at the primary care practice level using a representative sample of preventive care visits in the United States” (Tanda & Salsberry, 2014, p. 242). The ECRs were put into place to help in prevention and treatment of childhood obesity for the clinical setting. The study showed that “the ECRs had no impact on the frequencies of obesity diagnosis or on frequencies of the service provisions among patients with an obesity diagnosis” (Tanda & Salsberry, 2014, p. 248). So, the care for children with obesity did not improve after the ECRs were put into place. The article discussed in detail what else the ECRs effected.

A report from Medical Expenditure Panel Survey conducted through the Agency for Healthcare Research and Quality (AHRQ) showed that in 2008, only 50% - 34% of parents reported that their healthcare providers talked about healthy diet and exercise,

respectively, during visits to their children's healthcare providers in the past 2 years" (Tanda & Salsberry, 2014, p. 248).

Although this number seems low, it is higher than it was before the ECRs were executed. Educating children and their parents on healthy lifestyles is the main component of preventing obesity in children. The study "found that patients with an obesity diagnosis received the obesity preventive services at consistently higher rates than the general population; however, the proportions of patients receiving the obesity preventive counseling did not change" (Tanda & Salsberry, 2014, p. 248). It is vital that primary prevention be wide-spread and encompass every child, and not only the children who already have an obesity diagnosis.

Another element lacking from the child's treatment plan was nutritional and exercise information. When treating obesity, a healthy lifestyle including diet and exercise is a major component to this treatment plan. The study found "that only a handful of these children were provided with diet/nutrition or exercise counseling. For example, of visits made by non-Hispanic Black children in 2008 - 2009, 22% were provided with diet/nutrition and 21% with exercise counseling" (Tanda & Salsberry, 2014, p. 248). A diet and exercise is not treatment enough for childhood obesity though.

A randomized, controlled study of overweight and obese children aged 3 to 5 years shows that providing parents with information about healthy diet and exercise alone is inferior to more comprehensive multidisciplinary treatment approaches for successful weight reduction in these children. (Tanda & Salsberry, 2014, p. 248)

Therefore, the treatment of obesity in children is interdisciplinary, because educating the patient and their family is a good start to the process, but the other experts from different fields can offer the child a lot.

To improve upon the Expert Committees Recommendation's in the future there must be changes that occur. The study discussed "future efforts include advocating for changes in governmental, institutional, and insurance policies that encourage streamlining of childhood obesity preventive programs, which may include establishment of provider education programs and user-friendly documentation and reimbursement systems" (Tanda & Salsberry, 2014, p. 249). Nurses should be supporting childhood obesity programs, and if their hospital does not have one in place they would be instrumental in starting the conversation.

A major nursing intervention for childhood obesity is teaching the child and parents the 5-2-1-0 Let's Go plan. This program was developed, because experts discovered that, Obesity increases with the following consumptions patterns: increased intake of sugar-sweetened beverages, calorie-dense snacking, larger portion sizes, more restaurant food, and an increased intake of processed foods. Another major contributor to obesity is decreased physical activity levels, more television time and computer viewing, and less time playing outside. (Tyler et al., 2014, p. 200)

After using the data collected from studies that showed these correlations, the 5-2-1-0 Let's Go program was invented. The program was "developed by the Maine Center for Public Health in association with the Harvard Prevention Research Center" (Tyler et al., 2014, p. 200).

The program is for children from ages 2 – 18 and the numbers are represented as follows:

5 – increase the number of fruits and vegetables eaten daily to five.

2 – decrease television or computer screen time to less than two hours per day.

1 – increase physical activity to one or more hours per day.

0 – eliminate sugar-sweetened beverages to zero. (Tyler et al., 2014, p. 200)

The nurse, whether a PNP or RN, would educate the patient and family on this program and what each number means and why they are important for health. “Many states across the country have adopted this program in an effort to decrease childhood obesity. The CDC has recognized the program as an effective tool to fight childhood obesity” (Tyler et al., 2014, p. 200). This program can be utilized by nurses in a multitude of care settings, and should be because it has been shown to work.

Family-Centered Care

In the pediatric population, a nurse must recognize that a key component to their care is the child’s family. Family-centered care is a practice often pushed for in the pediatric field, since the family is the deciding force for the child, usually. “Although there is a general consensus among researchers and health professionals that the family environment is a major factor in a child’s adiposity, literature recognizes that the family is an influential change agent in a child’s health” (Sorg et al., 2013, p. 16). Many times, the child has developed obesity as a result of their home-life, but the support and impact the family can have on the child’s treatment plan is much greater. Family-centered care facilitates a child’s obesity management and recognizes the child’s journey to a healthy lifestyle.

The social nature of the family creates an environment that allows for support, which is crucial in the treatment of obesity. A home life that promotes healthy family habits is essential to treating the obese child. Behavioral interventions such as dietary modifications are more likely to become long-term lifestyle changes when presented to the entire family rather than directed pointedly at changing one individual’s attitudes and habits. (Sorg et al., 2013, p. 16)

Family-centered care is used so the child feels supported and the family can remain unified when undergoing the interventions needed for managing the child's obesity. By using the family-centered care approach, the child is more likely to make these healthy choices into a lifestyle. When having, the whole family participate it allows for the program to benefit the entire family. "Changes in parental BMI are also a strong predictor for changes in child BMI" (Sorg et al., 2013, p. 17). BMI of the child will decrease when their parent is using the nutritional and exercise information within their household. It is an amazing care model that not only effects the nurse's patient, but the entire family in becoming healthier long-term.

The nursing profession is taught that before starting an intervention the nurse must assess the knowledge base of the family. Using the nursing process of assessment, diagnosis, plan, intervention, and evaluate. "Upon initiating a family-based obesity intervention, the PNP must thoroughly assess the family's strengths, weaknesses, motivation, and readiness for change, and potential barriers to success" (Sorg et al., 2013, p. 18). Once a full assessment of the family is done, the PNP can then start to form goals for the child and family, but the PNP must include them in the goal-setting. Including the family and child in on the goal-setting builds trust and it a major component in family-centered care. Another duty of the PNP in family-centered care is education.

Another role of the PNP is to provide education to the family regarding current dietary guidelines and to discuss the influence parents and other family members exert on a child's food choices. Families may be directed to the MyPlate website (www.choosemyplate.gov), which provides current, interactive information to help determine dietary recommendations based on an individual's gender and age. (Sorg et al., 2013, p. 19)

Proper dietary information is important for the management of a child with obesity. The MyPlate.gov website has a myriad of correct and useful information, so if the family needs a reference or wants to become more informed after the visit they can. The website shows viewers how to read nutrition labels, which is a huge factor in health literacy. The MyPlate website will create a plate specific to the child based off their age and gender, but does not consider their BMI. Also, the PNP should educate the family on the 5-2-1-0 Let's Go program so it pertains to physical activity and dietary information as well.

There will be difficulties throughout their child's obesity management. Managing obesity is a long process, and often the child develops health complications related to obesity which make the treatment more complex. "Parents should be prepared for potential barriers and setbacks throughout their child's weight-loss journey, but they must also be aware of the large influence they have on their child's dietary and activity habits" (Sorg et al., 2013, p. 19). PNPs, when using family-centered care, must support the parents as much as they support the patient, because without the parents' supporting the child, their chances of following the treatment program are slim. Also, it is extremely taxing on the family unit managing obesity and the health conditions that develop alongside obesity, therefore the nurse must be available to provide a safe-place for the family to release their thoughts and concerns. The nurse can create an open environment, one in which the child's treatment can flourish by allowing open communication and providing therapeutic communication back, and when there are set-backs in the treatment plan the nurse plans accordingly.

It is not productive to blame parents for a child's weight problem; rather, nurses can empower parents to promote healthy eating and physical activity in their children by encouraging them to make the following lifestyle modifications: make high-calorie, fatty,

or sugary foods less available in the home. Keep a large variety of fruits, vegetables, and other low-calorie snacks, such as air-popped popcorn, in the home. Limit eating to the kitchen or dining room. Use smaller dinnerware. Increase family physical activity. (Budd & Peterson, 2015, p. 44)

Condemning the parents will not help form a trusting and therapeutic relationship with them, so the nurse should instead utilize them, as the valuable resource they are in treating their child's obesity. The nurse needs to facilitate the family environment and educate the family and child on strategies that enable weight loss.

Barriers for Nursing Interventions

When understanding a plan of action, it is good to consider the obstacles. There are a multitude of barriers for the nursing interventions for childhood obesity. There have been studies done to understand the kinds of difficulties an intervention will face when implemented, because eventually the healthcare team wants a successful plan. "In one qualitative study, general practitioners and office practice nurses reported that their role was to raise the issue of a child's weight, but ultimately obesity was a social and family problem" (DiNapoli et al., 2011, p. 126). This belief that the torch of responsibility is passed to the family and society rather than the healthcare professionals is a major barrier to obesity nursing interventions in children. This same study,

...Identified nurses' denial and ambivalence and parent's denial as barriers to providing obesity education to patients. The authors demonstrated that nurses believed the children would naturally grow out of their weight problem...more than 75% of the providers surveyed admitted they did not participate in activities directed toward preventing

obesity. Still, more than half of respondents in this same study reported that preventing childhood obesity should be a high priority. (DiNapoli et al., 2011, p. 126)

The issue with this logic is that the nurses are not providing education on an issue they find an important, because they believe the obese and/or overweight children will grow out of their obesity. The lack of knowledge on obesity as a disease is where the true barrier lies with this barrier, because then the nurses would be able to provide education the parents confidently. This is vital since “multiple studies have demonstrated that parents believe that healthcare professionals are the preferred source of information about childhood weight management compared with others who routinely interact with them such as teachers” (DiNapoli et al., 2011, p. 126). If parents are relying on nurses for education about their child’s health, then the nurses need to deliver accurate and consistent information to the family.

The greatest barrier to nursing interventions for childhood obesity is self-doubt in the nurses’ ability to educate patients and their families. “Some providers do not feel competent in addressing obesity in children. Personal characteristics of practitioners such as their own weight, eating habits, and exercise may influence their approach and management of obesity” (Hopkins et al., 2011, p. 279). The nurse may feel judged or hypocritical for their unhealthy habits, if they are educating a child and their family on how to live a healthy lifestyle.

There may be external and internal factors influencing the families’ ability for the child’s obesity treatment plan to be successful. “Reasons for the low rate of obesity preventive care provisions, especially for disadvantaged populations, may be complex. Poverty, single parenthood, and living in an unsafe neighborhood may become obstacles to developing healthy dietary habits and engaging in physical activities” (Tanda & Salsberry, 2014, p. 248). A health management program would be harder to follow in a lower socioeconomic status, one income,

and when the child cannot play outside because of the dangerous region they live in. The nurse must account for these barriers when brainstorming a plan for their patient. Nurses need to confront the main obstacles experienced by families and children, which are financial, psychological and social. To achieve this nurses must be able to effectively communicate and facilitate a productive group conversation, so that everyone's thoughts, feelings, and needs are being heard.

However, professionals felt they did not have good enough communication skills to tackle the issue effectively. The latest guidelines issued by National Child Measurement Programme acknowledges the difficulties inherent in talking to parents about their child's weight. It recommends use of the term 'very overweight' instead of 'obese' in recognition of the latter terms emotional stigma. (Penn & Kerr, 2014, p. 19)

If the nurse uses language that is less stigmatizing to discuss the child's health condition and treatment plan, then the parents will have a more open conversation. Also, the unit could hold communication seminars on how to effectively communicate, so that education with family and patients runs smoothly.

Another barrier for a child to receive obesity prevention from a nurse is the nurse's perception that their efforts are ineffective. "Even if screening and diagnosis take place, a perceived 'futility of involvement' also exists in the minds of many providers. This may also be related to providers' repeated failed attempts in managing obesity" (Hopkins et al., 2011, p. 279).

Healthcare providers can become discouraged after multiple failed efforts at treating a child's obesity, but it is important for the healthcare professionals to understand that it is an uphill battle managing obesity. Emotional support for the family and child is a necessity that cannot be

ignored, so the provider should make sure there is adequate support for the family to hopefully alleviate the struggle the child is facing. This may help the provider with compliance.

Nurses, on the floor and PNPs, need to understand that interventions will have barriers. The most common on the nurses' side is a communication difficulty, and on the patient side it could be environmental factors such as home-life, income, and single parent household. The key to seeing the obstacles in the way of the treatment plan is to plan ahead for them, and have solutions ready for the child and their family.

Healthcare Biases on Obesity

One of the most prevalent issues within healthcare today is healthcare biases on obesity. With the obesity rates skyrocketing, meaning more patients needing to be taken care of with obesity, this issue has come to light. "Research has demonstrated that when excess weight is the health concern, healthcare professionals have reported having an anti-fat bias. Anti-fat bias appears to occur across health care disciplines" (Snethen et al., 2014, p. s104). An anti-fat bias can affect the care a patient receives, especially a child who is obese or overweight. Hospitals, schools, and clinics are supposed to be pushing for obesity prevention, but perhaps the anti-fat bias is the reason the numbers are still low for prevention rates in these areas.

The article, "Exploring future nurses' attitudes and beliefs related to childhood overweight" by Snethen et al., (2014) was a study inspecting nursing students and their biases on obesity in children. "The purpose of this investigation was to examine the attitudes and beliefs of prenursing students and students in the clinical nursing major about children who are overweight" (Snethen et al., 2014, p. s102). Snethen et al., (2014) had some key discoveries on the attitudes of nursing students towards children who are obese. "Major findings emerging from the study were that undergraduate nursing students, whether enrolled at the prenursing level or in

the clinical nursing major, hold some negative perceptions of overweight children” (Snethen et al., 2014, p. s103). The negative perceptions they found in this study included:

...that children who are overweight were not as self-confident and are ashamed of their weight, and that people do not feel as comfortable being around them...the prenursing students’ responses suggested that they held more negative attitudes about the attributes of children who are overweight, such as being untidy and being more emotional...it suggested in the findings that overweight individuals are less valued because it is believed they have poor eating habits, therefore there is no empathy for their weight concerns. A significant number of the prenursing students did not perceive that overweight children could experience a high quality of life. (Snethen et al., 2014, p. s103-s104)

These negative opinions can affect the care children receive. Educating within nursing programs about obesity and how to deliver sensitive care is important. There are many misconceptions about childhood obesity that should be addressed in nursing school, so that future emerging nurses can provide appropriate care to patients. Even an implication of a nurse not having empathy towards a patient is an unacceptable outcome of obesity bias.

The psychosocial problems that are associated with childhood obesity are as detrimental to children’s health as the physical effects. Childhood obesity can result in social discrimination and stigmatization, which can contribute to low self-esteem, social and academic problems, and lifelong consequences. (DiNapoli et al., 2011, p. 126)

Healthcare professionals must take the time to understand obesity as a disease, so that they do not let biases cloud their care. Once a provider is cognizant of the harmful effects an

unsupportive and bias healthcare worker can have on a child who has obesity's treatment plan, it may help them change.

There was another article, "The obesity epidemic, part 2: Nursing assessment and intervention" by Budd and Peterson (2014) that developed a solution for patient-centered care, that was specific for patients with obesity. Healthcare professionals needed a way to deliver sensitive care to obese patients. This plan was established because,

Obesity is often associated with a lack of willpower and viewed as the result of overeating. Obese individuals are often perceived as lacking in self-discipline, lazy, or less intelligent than those who are not obese. Bias against obese people is widespread and often takes the form of discrimination in work and educational settings. (Budd & Peterson, 2015, p. 38)

With prevalent obesity bias, around today, this model was developed to alleviate patients from becoming victims of the bias. One of the first steps of healthcare workers is to assess their biases before beginning care.

Other frameworks used to appreciate the underpinnings of the obesity epidemic have emphasized the need for nurses to examine their personal beliefs, values, and stereotypical assumptions, with the goals of adoptions a more open and nonjudgmental approach and of showing obese patients respect, rather than blaming them for their size or behavior. (Budd & Peterson, 2015, p. 38)

Patients will receive better care when a healthcare professional can evaluate themselves about their biases before giving care. Budd and Peterson (2015) went on to analyze the obesity bias within healthcare professionals and they concluded "obesity bias among healthcare providers found that all groups had negative perceptions of and attitudes toward obese people"

(p. 39). Now that the study figured out that this bias existed they wanted to improve the situation at hand. “The Ohio State University Medical Center developed the RESPECT Model, which is intended to foster compassionate care for obese patients” (Budd & Peterson, 2015, p. 39). The RESPECT Model is as follows:

R – rapport grounded in courteous and considerate communication and behavior.

E – environments that can be used effectively, safely, and comfortably with bariatric patients (blood pressure cuffs, chairs, beds to accommodate for obese patients).

S – safety of patients and staff.

P – privacy of patients in keeping with an overall consideration of patient’s dignity.

E – encouragement of patients to set realistic goals.

C – caring and compassion, as opposed to victim blaming behavior.

T – tact in dealing with all patients, family members, and other professionals involved in the care of bariatric patients. (Budd & Peterson, 2015, p. 39)

The RESPECT Model is a useful solution in dealing with healthcare bias. This model is simple and easy to remember, plus the key to it is always just respect the client, family, and interdisciplinary team. A nurse can assess their biases, then use the RESPECT Model when providing care to an obese child. More research is coming out monthly on childhood obesity and biases, so soon there will be more recommendations on how to handle obesity bias within the healthcare field.

Conclusion

In conclusion, obesity is a disease that is a major health concern, not just in adults but in children as well. Healthcare providers will want to understand the pathophysiology of obesity, because the disease rates are rising. More patients will be coming into the hospital with obesity

related co-morbidities daily and healthcare workers will need to know the true etiology or pathophysiology of obesity.

Childhood obesity is an epidemic in the United States. It is vital that nurses are educated on the risk factors for childhood obesity. The United States is pushing childhood obesity prevention programs in schools, primary care offices, and hospitals. Nurses are at the forefront of the prevention programs, but they need to have proper education on obesity as a disease and how to discuss this with families.

Nursing interventions for childhood obesity included, but were not limited to, screening BMIs, education on healthy lifestyle, and presentations at schools and clinics. The key to all the nursing interventions were accuracy of the information taken and given during the intervention.

Barriers to nursing interventions for childhood obesity management programs were ineffective communication, lack of belief in ability to perform effective obesity management, and inability to educate successfully on healthy lifestyle. These barriers could be amended by an in-service for the nursing staff on communication, obesity management, and healthy lifestyle programs.

The final point discussed was in regards to healthcare biases on obesity. When healthcare providers have negative attitudes towards obese patients and it is affecting their care of that patient, then it is an obvious problem. Patient safety is a top priority of any nurse, and healthcare provider. But, when biases are involved it can cloud their judgement and therefore maybe patient safety is no longer in the front of their mind. Also, empathy is lost when anti-fat bias is gained.

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