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Healthy Choice, Healthy Life

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HEALTHY CHOICE, HEALTHY LIFE

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Abstract

According to the U.S. Department of Health and Human Services, unhealthy eating and inactivity cause anywhere from 310,000 to 580,000 deaths every year. How and what a child eats today will have a significant impact on his/her health throughout adolescence and adulthood. Consuming nutritious foods helps children grow, develop, do well academically and also prevents health issues, such as obesity, Type 2 diabetes, nutrient deficiencies and poor bone health. A project to empower middle school children to make healthy food choices was designed. An after school educational "Health Fair" was created using the theoretical framework of Watson's Theory of Human Caring. This Health Fair created the opportunity for children to learn the basic food groups and the recommendations for daily intake for their age group. The children learned how to create some simple meals using the recommended guidelines. Teaching children the importance of good nutrition throughout childhood will provide the foundation for a healthier more fulfilling life.

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Healthy Choice, Healthy Life

Chapter One: Introduction

A critical component to a healthy lifestyle is nutrition. From birth, the intake of vital nutrients is essential to the growth and development of a healthy individual. Good nutrition, particularly in the early years of life, is important in establishing and maintaining a good foundation for a child's future physical and mental health, academic achievement, and economic productivity (Kumar, Olson, & Schwenk, 2002; Martorell, 1999). Informal observation at a small mid-western middle school revealed the need for further nutritional education for the students. Children at this school refused to eat the hot lunches provided, and instead proceeded to eat unhealthy options elsewhere to relieve their hunger. When questioned, many of these children were unable to correctly identify the basic elements of a nutritious meal or the benefits and the consequences resulting from the lack of proper nutrition.

It is important for nurses to address the needs of the community such as poor nutrition. Watson's philosophy of Human Caring (2008) can be a significant guiding framework when educating children. "The Caritas Process of teaching-learning is more relational, trusting, exploratory, engaging, and ultimately liberating. It involves power and control with, not over, the learner" (Watson, 2008, p. 126). Problems associated with malnutrition are not just confined to small pockets of society. The potential exists that children could be struggling with malnutrition and they may not even know it. These are often children of hard-working families, with various education levels, trying to make ends meet and do not make nutrition a priority. Consequently providing nutritional

education to children at a young age could empower them with the knowledge to make healthy food choices.

Background

The issue of nutrition status and potentially malnutrition among school age children became evident when middle school children in a local community school were observed during multiple lunch periods throwing food away. Although the lunch being served was balanced and provided the recommended daily servings of fruits, vegetables, protein, grains, and dairy, the food on the lunch trays was not being eaten by the children. Tray after tray, the food was discarded into the trash with only a few bites eaten.

Guided by my observations, a nutrition survey (See Appendix A) was designed and completed with 98 fifth grade students, ages 10 to 12 years, revealed that 55% of the students always eat hot lunch and 25% of the students vary between eating hot and cold lunch at school. 64% of those students stated that they did not eat 100% of their lunch on a regular basis because they did not like it (52%): they did not have enough time to eat it (8%), or both (4%). All of the students stated that the decision on whether to eat a hot lunch or bring a cold lunch was based on the published school lunch menus.

Many of these children would be hungry after school and would grab quick snacks that were not healthy when home from school to help overcome the hunger from not eating lunch. The same survey completed with fifth graders at a local public middle school identified that 80% of the students cold lunches brought to school had been made by a family member and that the children did not know how to create a healthy lunch for themselves. More importantly, the children did not understand the importance of good nutrition which demonstrated the need to provide education for these children.

When discussing the subject of nutrition with a group of young girls ages 9-11 years, they were all able to verbalize what it means to eat nutritious foods. Each of the young girls said a nutritious diet means to “eat good foods that make you strong” (G. Thompson, K. Folkedahl, T. Sanderman, E. Kittleson, personal communication, February 4, 2013). The problem was that none of the girls were able to verbalize what “healthy” meant and why fruits and vegetables were “healthy” but candy and cookies were not healthy.

Purpose of the Project

Unhealthy dietary patterns, especially diets low in fruits and vegetables and high in fats, have been cited as the most frequently occurring chronic disease risk behavior among youths aged 12-17 years (Lowry, Kam, Collins, & Kolbe, 1996). This project will begin to teach children the importance of nutrition and how they can take control to make healthy choices, to give them a solid foundation toward staying healthy.

The purpose of this project is to empower middle school children with the knowledge and skills necessary to make healthy food choices. Most children do not follow the United States (US) Department of Agriculture’s (USDA’s) Dietary Guidelines for Americans, which recommend five or more servings of fruits and vegetables a day and limiting fat intake to no more than 30% saturated fat intake (US Department of Agriculture, 2000). A study by Brady, Lindquist, Herd, and Goram (2000) demonstrated that only 5% of elementary and middle school children had eaten the recommended servings of fruits and vegetables and 9% had met the recommendations for dairy products.

Significance to Practice

Pediatric patients may grow up and grow out of their shoes but they do not always grow out of their health challenges. Malnutrition, both under-nutrition and over-nutrition, affects all aspects of pediatric nursing. It is important to address issues relating to poor nutrition as an unhealthy diet can lead to diabetes, obesity and failure to thrive (FTT). Type II diabetes accounts for 45 percent of all newly diagnosed diabetes in pediatric patients (Fagot-Campagna, Pettitt, & Engelgau, 2000). Over-nutrition (obesity) can cause hypertension, dyslipidemia and depression (Deckelbaum & Williams, 2001). In addition, a disorder associated with under-nutrition in the pediatric inpatient setting is failure to thrive (FTT). Malnutrition, from a loss of nutrients or decreased intake, can result for many different reasons. “Worldwide, malnutrition is a leading cause of morbidity and mortality in childhood, and remains the single most common cause of growth retardation in children” (Kumar, Olson, & Schwenk, 2002, p. 703).

Health care facilities have been significantly impacted by these health challenges related to malnutrition. The number of children being admitted to the hospital for ongoing care related to their childhood obesity is increasing as evidenced by a General Pediatric Unit at a large Midwestern hospital. This pediatric unit recently finished reconstructing a select number of patient rooms to be able to adequately care for gastric bypass pediatric patients. Ceiling lifts and toilets were installed, and bathroom doors were widened to accommodate higher maximum body weights. The pediatric nurses have also begun specialized training to care for these young obese patients post-operatively, as most nurses do not have the knowledge about caring for a post-bariatric child. For many

nurses working in the pediatric unit, this has been an eye opening concern of over-nutrition within the pediatric population.

Malnutrition is an often overlooked issue resulting in post-operative complications and delayed wound healing when the patient may outwardly appear to be healthy. Nurses must be able to recognize signs and symptoms of dehydration, electrolyte imbalances, infection, anemia, hypothermia and hypoglycemia that often go along with children who are malnourished. It is then, that the nurse can use their therapeutic, caring relationship to take the next step of providing education to promote a healthy outcome.

Theoretical Perspective

Caring for the health and well-being of young children requires one to develop a caring relationship based on trust. Education and role-modeling are critical in such a relationship to assist children with meeting their basic nutritional needs. Watson (2008) states “caring is a science that encompasses a humanitarian, human science orientation, human caring processes, phenomena, and experiences. Caring science includes arts and humanities as well as science” (p. 19). The basis of true nursing is a genuine caring for another human being with dignity. The transpersonal caring relationship is the center of Watson’s theory as well as the caring moment. Developing a caring, trusting relationship is a vital first step in the process of educating children on malnutrition. This needs to be done in a delicate, concise manner that creates a solid base for a positive learning environment.

The first step in developing a caring, trusting relationship is to meet with each child individually. It is necessary for the educator to create a personal bond with the

child. Questions need to be asked about body image, family dynamics, personal likes and dislikes, possible misconceptions regarding food, and a base level of understanding of nutrition. By completing this privately, the educator avoids the effects of peer pressure and any other outside influences. Communicating clearly reduces the chance of conflict and misunderstandings which will promote a positive outcome during the group activities and health fair.

The issues of malnutrition can be addressed through Watson's (2008) ninth Caritas Process. This process states, "reverentially and respectfully assisting with basic needs; holding an intentional, caring consciousness of touching and working with the embodied spirit of another, honoring unity of Being; allowing for spirit-filled connection" (p. 31) relates to the issue of malnutrition because nutrition is a basic need. "Feeding another person and helping another meet his or her basic need for nurturance, for food and fluid, requires a Caritas Consciousness" (Watson, 2008, p. 151). Brunton and Beaman (2000) identified the following caring behaviors among the top ten important behaviors reported by nurse practitioners: appreciating the person as a human being, showing respect for the person, being sensitive to the person, talking with the person, treating the person as an individual, and listening attentively to the person. These behaviors are important when educating children because of their vulnerable nature and age. Caring is required in teaching and nursing but has a special significance when children are involved due to this inexperience and genuine innocence.

Educating children requires a holistic approach that includes physical, mental, emotional and spiritual healing. Watson's core concepts formulate the practice of loving-kindness, enabling the authentic presence of deep belief and cultivating one's own

spiritual practice towards' wholeness (Watson, 2013). It is important to have a sensitivity of what food and eating means to the children and their families. The many different ethnic and cultural groups in this country has resulted in diverse food preferences and eating habits. Watson (2008) states, "the cultural significance of habits, familiarity of certain tastes, smells, and so on, are laden with emotions that are embodied, pre-conscious, and often unconscious" (p. 151). Through the use of the caring, trusting relationship that has been developed between the educator and the child, questions can be asked about the child's specific food habits in order to have any hope of providing culturally appropriate advice for modifying traditional eating patterns to prevent and treat malnutrition. During the educational process with this project, it will be important to remember how different cultural backgrounds and family beliefs could influence the ability to accept the information given to them and their ability to make changes in their current eating habits. Involving family members in the education sessions is also effective in promoting interest with any new "healthy" recommendations.

One of the activities that will be helpful in achieving the health goals is the Caritas Process related to genuine teaching-learning experiences within a caring relationship (Watson, 2008). Although an understanding that the educator and student both teach and learn from each other, teaching-learning is concerned with enhancing a child's response to nutritional concerns. Watson's (2008) Caritas Process of Genuine Teaching-Learning directs the educator to "stay within the other's frame of reference" (p. 125) which directly affects how a person educates children. A child's frame of reference, when it comes to eating and food, is that the child is hungry and needs to eat food to overcome that hunger. Many times the process of overcoming hunger does not take into

consideration the type of food used to full-fill that need. Taking the time to develop a caring, trusting relationship with the child by getting to know the child's usual food choices, likes, dislikes, family cultures and general viewpoints related to food and eating will promote a positive learning environment. Teaching can be enhanced by making the educational material age appropriate and fun to learn.

“A Caritas teaching-learning process depends upon the nurse's ability to accurately detect another's feeling's, thoughts, readiness, mood, and so on, and then to connect with and access the other's perception's, feelings, concerns, knowledge, and understandings” (Watson, 2008, p. 126). This is extremely important when educating children because the educator needs to know if the child understands the material being presented. If the child does not understand, or does not accept the information, whether for cultural beliefs or other reasons, the educator must make adjustments to promote a positive and successful learning experience.

Through the process of educating, children can be empowered to make healthy food choices that will have a positive effect on their future. In nursing, empowerment can be defined as a process between the nurse and the patient intended to facilitate healthy behaviors (Hokanson Hawks, 1992). The empowerment process is meant to promote and enhance one's ability to meet their own needs or solve their own problems. The goal of this project is to educate middle school children which will in the end empower them. When faced with decisions regarding nutrition, and what foods they should choose to eat, children need to be able to have the knowledge necessary to make the best choices. Feste and Anderson (1995) developed an empowerment philosophy that combines knowledge, skills and an improved self-awareness regarding values and needs

to reach one's goals. At the completion of this project, given the required education and consequent confidence, each child will be empowered to find meaning in one's own existence, discovering inner power and control and self-healing. Consequently, caring with an empowerment approach will always assume the child's perspective.

A critical component to a healthy lifestyle is good nutrition. Education needs to begin at an early age and through informal observation it has been noted that middle school children lack this basic knowledge of nutritious foods. Using Watson (2008, 2013) as a guide, and by creating a caring relationship, this project will focus on building the foundation needed in health education for middle school children to be empowered about eating healthy foods. Chapter two will explore the literature relating to nutritional guidelines, and two forms of malnutrition which include under-nutrition and over-nutrition, and methods used to teach children.

Chapter Two: Literature Review

Patterns established during middle school years have been shown to be influential in the development of adult health-related habits (Leger & Nutbeam, 2000). Given that poor diet and inactivity result in more than 300,000 preventable deaths per year and that chronic disease accounts for 60 percent of medical care expenditures in the United States (National Center for Disease Prevention and Health Promotion, 2013), a high priority must be given to developing effective interventions. In order to positively influence the health of children, it is important to understand the recommended nutritional guidelines, the affects of both under-nutrition and over-nutrition, and the best ways to educate children to make healthy food choices.

Children who do not consistently access nutritious and adequate amounts of food necessary for a healthy life put themselves at risk for illness and a weakened immune system. The already immature immune system of young children makes them especially vulnerable to nutritional deprivation and as a result, the ability to learn, grow, and fight infections is adversely affected (Black, Morris, & Bryce, 2003; Haerens, 2009; Martorell, 1999; Mehta et al., 2013).

Children now live in a society that has changed dramatically over the last thirty years. Many of these changes – such as both parents working outside of the home, longer work hours by both parents, changes in the school food environment, and more meals eaten outside the home , affect what children eat, where they eat and how much they eat. Technology, such as the use of computers and video games, along with television viewing, often occupy a large percentage of children’s leisure time and potentially can influence levels of physical activity for children. Years ago children needed to go outside

and create play activities for themselves, but current technology provides games already designed for them with easy access for use which decreases the need for individual creativity and physical activity.

Nutritional Guidelines

Childhood malnutrition prevention involves maintaining energy balance at a healthy weight while protecting overall health, growth and development, and nutritional status. The balance is between the energy an individual consumes as food and beverages and the energy expended to support normal growth and development, metabolism, thermogenesis, and physical activity (Koplan, Liverman, & Kraak, 2005). Although the goal of energy intake equaling energy expenditure seems pretty basic, in reality it can be extremely complex when considering the multitude of biological, psychological, socio-cultural and environmental factors that affect both sides of the equation and the interrelationships between these factors (Dehghan, Akhtar-Danesh, & Merchant, 2005; Spear et al., 2007). The nutritional requirements, based on the Dietary Guidelines for Americans 2010, will discuss the new food pyramid.

Many children and adults do not know how many calories they should be eating in a day or how these calories should be divided up between the food groups. Most children know and understand the five food groups – fruits, vegetables, proteins, grains, and dairy – but they do not understand how to eat well-balanced meals. The new food pyramid dietary guideline was revised to reflect proper food portions.

MyPlate – The New Food Pyramid

On January 31, 2011 Dietary Guidelines for Americans 2010 was released and in June 2011, MyPyramid was replaced with MyPlate. Every five years the Dietary

Guidelines for Americans is updated through a joint effort by the Department of Agriculture and the Department of Health and Human Services (U.S. Department of Agriculture, 2014). “For the first time in the history of the Dietary Guidelines, the 2010 version strongly emphasizes the importance of a healthy body weight and balanced diet for kids” (Ward, 2011, p. 19).

MyPlate illustrates the five food groups using a familiar mealtime visual, a place setting (Figure 1). It is designed to remind Americans to eat healthfully; it is not intended to change consumer behavior alone. The goal of the Dietary Guidelines (2010) is to provide authoritative advice about consuming fewer calories, making informed food choices, and being physically active to attain and maintain a healthy weight, reduce risk of chronic disease, and promote overall health.

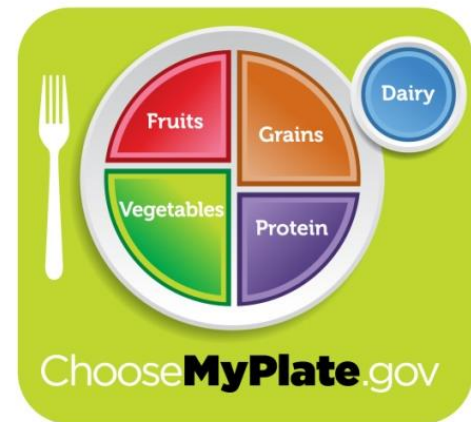


Figure 1: MyPlate

“The total number of calories a person needs each day varies depending on a number of factors, including the person’s age, gender, height, weight, and level of physical activity” (U.S. Department of Agriculture, U.S. Department of Health and Human Services, 2010, p. 13). The amount of protein, fruits, vegetables, grains, and dairy that children need every day is linked to their calorie needs.

Protein is crucial for good health, especially in children. With protein, it’s possible to get what you need with any number of protein-rich foods. Lower-fat animal and plant foods should dominate your protein choices, no matter what your age or stage of life. MyPlate combines all meat, poultry, seafood, beans, peas, eggs, soy products,

nuts, and seeds into the proteins food group, formerly known as the meat and beans group. One of the main focuses of the 2010 guidelines and MyPlate is to educate people on lower-fat protein-packed options, such as fat-free and low-fat milk and yogurt, cottage cheese, and other soy products. When looking at the MyPlate, protein should take up almost $\frac{1}{4}$ of the plate (United States Department of Agriculture, 2014).

A second section of MyPlate demonstrates that $\frac{1}{4}$ of the plate should be covered with fruit. Any fruit or 100% fruit juice counts as part of the Fruit Group. Fruits may be fresh, canned, frozen, or dried, and may be whole, cut-up, or pureed (United States Department of Agriculture, 2014). Eating fruit provides health benefits – people who eat more fruits and vegetables as part of an overall healthy diet are likely to have a reduced risk of some chronic diseases. Fruits provide nutrients vital for health and maintenance of your body.

A third section of MyPlate is for vegetables and connects to the fruit section. It should equal approximately $\frac{1}{4}$ coverage of the plate. Occasionally the fruit and vegetable sections of some visual examples will be combined on one-half of the plate. Eating vegetables as part of an overall healthy diet may reduce the risk for heart disease, including a heart attack and stroke. Vegetables are important sources of many nutrients, including potassium, dietary fiber, folic acid, vitamin A and vitamin C (United States Department of Agriculture, 2014).

The last section on the MyPlate is the Grains group. Grains are important sources of many nutrients, including dietary fiber, several B vitamins (thiamin, riboflavin, niacin, and folate), and minerals (iron, magnesium, and selenium). Most Americans consume enough grains, but few are whole grains. At least half of all the grains eaten should be

whole grains. Any food made from wheat, rice, oats, cornmeal, barley or another cereal grain is considered a grain product (United States Department of Agriculture, 2014).

The last section of MyPlate is the Dairy Group. All fluid milk products and many foods made from milk are considered part of this food group. Most dairy group choices should be fat-free or low-fat. Foods made from milk that retain their calcium content are part of the group. Foods made from milk that have little to no calcium, such as cream cheese, cream, and butter, are not. Calcium-fortified soymilk is also part of the dairy group (United States Department of Agriculture, 2014).

MyPlate's intent is positive. It's all about including nutrient-rich foods, not about what to leave off your plate, or out of your cup. Focusing on what you can eat decreases feelings of deprivation and allows you to focus on what you can do to make your diet, and your family's, better.

The Dietary Guidelines for Americans 2010 emphasizes three major goals:

1. Balance calories with physical activity to manage weight.
2. Consume more certain foods and nutrients such as fruits, vegetables, whole grains, fat-free and low-fat dairy products, and seafood.
3. Consume fewer foods with sodium (salt), saturated fats, trans fats, cholesterol, added sugars, and refined grains.

Childhood malnutrition prevention involves maintaining energy balance at a healthy weight while protecting overall health, growth and development, metabolism, thermogenesis, and physical activity (U.S. Department of Agriculture, 2014).

Malnutrition: Under-Nutrition

Acute hunger or starvation, as often highlighted on TV screens, is the result of high profile crisis like war or natural disasters, which starve a population of food, yet emergencies account for very few of hunger's victims. The less visible form of hunger or daily undernourishment affects many more children, especially in developing countries. For these victims, hunger is much more than an empty stomach. They must live for weeks, even months, on significantly less than the recommended 2,300 calories per day that the average child needs to lead a healthy life (U.S. Department of Agriculture & U.S. Department of Health and Human Services, 2010; Haerens, 2009). Undernourishment affects many children in the United States and can go undetected without a proper understanding of the condition.

“Pediatric malnutrition (under-nutrition) is defined as an imbalance between nutrient requirement and intake resulting in cumulative deficits of energy, protein, or micronutrients that may negatively affect growth, development, and other relevant outcomes” (Mehta et al., 2013, p. 2). Besides the hunger resulting from an empty stomach, there is also the hidden hunger of micronutrient deficiencies which make people susceptible to infectious diseases, impaired physical and mental development, reduced work productivity and increased risk of premature death (World Health Organization, 2013; Haerens, 2009; Mehta et al., 2013).

The lack of energy created by the deficiency of calories is then compensated by the body by slowing down its physical and mental activities. Since a hungry mind cannot concentrate, and a hungry body does not take initiative, a hungry child loses all desire to play and study. Malnutrition also weakens the immune system. Deprived of the proper

nutrition, children are especially vulnerable and become too weak to fight off disease and may die from common infections like measles, pneumonia, malaria and diarrhea. Each year, almost 11 million children die in the United States before reaching the age of five and malnutrition is associated with 53 percent of these deaths (Black, Morris, & Bryce, 2003; Caulifield, De Onis, Blossner, & Black, 2004; Haerens, 2009; Martorell, 1999; Mehta et al., 2013).

The bodies of malnourished children struggle to do normal things such as grow and resist disease. For them, physical activity becomes very difficult and even learning abilities can be diminished. Eliminating malnutrition involves sustaining the quality and quantity of food a person eats, as well as adequate health care and a healthy environment. Malnutrition has to be fought by giving the malnourished children the food and nutrients they need. There are several types of malnutrition and each form depends on what nutrients are missing in the diet, for how long and at what age (Haerens, 2009).

The most basic kind of malnutrition is called protein-energy malnutrition which results from a diet lacking in energy and protein because of a deficit in all major macronutrients, such as carbohydrates, fats and proteins (Bryce, Boschi-Pinto, & Shibuya, 2005; Haerens, 2009). Marasmus, another type of malnutrition, is caused by a lack of protein and energy with sufferers appearing skeletally thin. In extreme cases, it can lead to Kwashiorkor, in which malnutrition causes swelling including a so-called 'moon face'. Other forms of malnutrition though less visible, but equally deadly are usually the result of vitamin and mineral deficiencies that can lead to anemia, scurvy, pellagra, beriberi and exophthalmia and ultimately, death (Bryce, Boschi-Pinto, & Shibuya, 2005; Haerens, 2009).

Deficiencies of iron, vitamin A and zinc are ranked among the World Health Organization's top ten leading causes of death through disease in developing countries. Iron deficiency is the most prevalent form of malnutrition worldwide, affecting millions of people. Iron forms the molecules that carry oxygen in the blood, so symptoms of a deficiency include tiredness and lethargy (Bryce, Boschi-Pinto, & Shibuya, 2005, Haerens, 2009). "Health consequences include premature birth, low birth weight, infections, and elevated risk of death. Later, physical and cognitive developments are impaired, resulting in lowered school performance" (Haerens, 2009, p. 72).

Vitamin A deficiency weakens the immune system of children increasing their vulnerability to disease, can cause night blindness, and growth retardation (Bryce, Boschi-Pinto, & Shibuya, 2005; Haerens, 2009). According to Haerens (2009) "An estimated 250,000 to 500,000 vitamin A-deficient children become blind every year, half of them dying within 12 months of losing their sight" (p. 72). Zinc deficiency also contributes to growth failure and weakened immunity in young children. It is linked to a higher risk of diarrhea and pneumonia, resulting in nearly 800,000 deaths per year in the U.S.(Black, Morris, & Bryce, 2003; Caulifield, De Onis, Blossner, & Black, 2004).

Iodine deficiency affects 780 million people worldwide. Affecting 140 million preschool children in 118 countries and more than seven million pregnant women, it is also a leading cause of child blindness across developing countries (Haerens, 2009). The clearest symptom is a swelling of the thyroid gland called a goiter (Delange, De Benoist, Pretell, & Dunn, 2001; Haerens, 2009), but the most serious impact is on the brain, which cannot develop properly without iodine causing a grave, irreversible form of mental

retardation, such as cretinism (Black, Morris, & Bryce, 2003; Caulifield, De Onis, Blossner, & Black, 2004; Delange, De Benoist, Pretell, & Dunn, 2001; Haerens, 2009).

“Malnutrition in the first 2 years of life leads to irreversible damage to cognitive functions and physical capacity, and it is transmitted across generations as malnourished mothers give birth to low-birth weight children” (Ahmed, Haque, Ahmed, & Cravioto, 2009, p. S201). Since it is a complex process to maintain proper nutrition in children, both physical and psychosocial components must be dealt with when malnutrition is assessed (Kumar, Olson, & Schwenk, 2002).

The association between malnutrition and patients’ outcome has been researched for different diseases and medical fields. Large studies show a close association between malnutrition and increased complication rate, mortality, length of hospital stay and costs (Correia & Waitzberg, 2003). Through primary prevention this statistic could be decreased with early nutritional education.

Malnutrition: Over-Nutrition

Insufficient caloric intake is not the only reason for malnutrition today (Ahmed, Haque, Ahmed, & Cravioto, 2009; Medical News Today, 2013; World Health Organization, n.d.). Imbalanced or excessive consumption of nutrients can cause a type of malnutrition called over-nutrition (Medical News Today, 2013). Over-nutrition leads to being overweight which can then develop into obesity (World Health Organization, n.d.). There are many reasons a child can become overweight, which simply means, weighing more than what is recommended (Centers for Disease Control and Prevention, 2012). It could be from excess fat or also from bone, muscle or water in the body (Okie, 2005; PubMed Health, 2012).

Although there are multiple etiologies related to the development of obesity, it has been proven that obesity occurs when energy intake exceeds energy expenditure (Dehghan, Akhtar-Danesh, & Merchant, 2005). The imbalance between calories consumed and calories used can result from the influences and interactions of a number of factors, including genetic, behavioral and environmental factors. It is the interactions among these factors, rather than any single factor, that affects the development of obesity (Barbour, 2011).

“The U.S. Surgeon General has identified overweight and obesity as “the fastest growing cause of disease and death in America” (Barbour, 2011, p. 70). In 1980, the obesity rate for children aged 2-5 was 5%, for children aged 6-11 was 6.5%, and the rate for adolescents aged 12-19 was 5%. By 2008, the obesity rate for children aged 2-5 had risen to 12.4% and for children 6-11 had risen to 19.6%, while the rate for adolescents had reached 18.1% (Ogden, Carroll, & Curtin, 2010; Barbour, 2011; Rao, 2006). Worldwide, more than 2.6 million people die each year from the higher health risks associated with being overweight or obese (Melnyk, Small, & Moore, 2008).

There is an extensive list of physical and health consequences of childhood obesity including: cardiovascular disease, metabolic syndrome, hyperlipidemia, insulin resistance, diabetes, hypertension, asthma, sleep apnea, stroke, orthopedic complications, and fatty liver disease (Berg, 2004; Dehghan, Akhtar-Danesh, & Merchant, 2005; Hassink, 2006; Melnyk, Small, & Moore, 2008; Must & Strauss, 1999; Okie, 2005; Rao, 2006; Riis, Grasen, Strobino, Ahmed, & Minkovitz, 2012; Wofford, 2008). More than 60 percent of overweight children 5 to 10 years of age had at least one risk factor for cardiovascular disease, such as elevated blood pressure or serum insulin levels or

dyslipidemia, and 25 percent had two or more risk factors (Freedman, Dietz, Srinivasan, & Berenson, 1999). Conditions associated with obesity, such as sleep apnea and gall bladder disease, tripled in children and adolescents between 1979-1981 and 1997-1999 (Wang & Dietz, 2002). For the first time in history, the life expectancy of the current generation of children may be shorter than that of their parents (Ohshansky et al., 2005; Rao, 2006).

While some of these health risks may be easily observed by society, obesity also contributes to psychosocial risks, which may be less obvious. The psychosocial impact of obesity upon children is mainly the result of how such children are perceived by their peers and adults. Overweight and obese children are subjected to both subtle and blatant forms of isolation, unfairness and bullying. The impact is profound and can last a lifetime. Consequences of this can include depression, social isolation, diminished self-esteem, behavioral problems, poor body-image, and reduced quality of life (Barbour, 2011; Mustillo et al., 2003; Puhl & Latner, 2007; Rao, 2006; Schwimmer, Burwinkle, & Varni, 2003).

Both the overweight and the underweight suffer from malnutrition, a deficiency or an excess in a person's intake of nutrients and other dietary elements needed for healthy living. Both conditions share the same potential for sickness and disability, lower levels of productivity, and shortened life expectations. Prevention and treatment are essential for children who suffer from malnutrition and needs to begin with proper education at an early age.

Educating Children

Teaching and learning go hand in hand. Effective learning is only accomplished when the teaching has been effective. It is important to use various methods of teaching to accommodate the learning styles of the children. There are seven styles of learning which include visual, aural, verbal, physical, logical, social and solitary (Blue Mango Learning, 2014; Learn Dash, 2014). Each of the types has specific techniques associated to it that correspond to areas of the brain where the information is processed. As people get older they begin to understand how they learn best. Each style will be discussed and all are important to know and understand to be able to provide the best educational experience possible.

The visual style uses pictures and images and people often like to watch how a process is done to learn it. The aural style uses sound or music. People who use this style can learn by listening to the instructions, process or sequence of events. The verbal style includes using words, either written or in speech. This style of learning has the person writing out what they are learning and/or repeating it in a speech format. The physical style is considered the “hands on” way of learning. This style uses the hands, body and sense of touch. This is a very popular way of learning in nursing. It is very common to hear new nurses say “I learn best by just doing it”. The logical style is a very mathematical approach that uses reasoning and systems. People who use this style often use lists to extract important information and apply it in a systems format to be able to see the big picture. The social style is when people learn best in groups or with other people in general. Role playing is often used when educating using this style. Last is the solitary style that is considered to be very intrapersonal since most people who learn

through this style prefer to do it alone using self-study (Blue Mango Learning, 2014; Learn Dash, 2014).

Understanding the different styles of learning is important when planning a project that's sole purpose is to educate. The different learning styles affected the way this project was set up. Activities were presented and completed using the various learning methods which guaranteed a higher success rate of increasing children's knowledge level on the multiple health topics. Chapter three will discuss the development of an educational program to empower middle school children to make healthy food choices.

Chapter Three: Development of an Innovative Program

Mothers and other busy people often wish for a balanced life with fewer chores, less work, and more time spent relaxing with family and friends. Achieving balance in any area of life is not easy, especially when it comes to nutrition. It takes vigilance to monitor yourself so that you don't take on too many projects, forgo regular exercise, raid the kitchen every night, or all of the above! It is not easy to achieve, but balanced nutrition is a worthy goal. Balanced nutrition is the cornerstone of good health. Educating young children on how to achieve that balance and then how to maintain the healthy lifestyle into adulthood is the key. This chapter will discuss the development of an educational program for middle school children and a visual metaphor created in relation to the program.

Program Development

My project involves working with children afterschool to teach them in a fun way about how to make the food choices necessary to live a healthy lifestyle. According to Watson (2008) "learning is more than receiving information, facts, or data. It involves a meaningful, trusting relationship that is inter-subjective; the nature of the relationship as well as the form and context of teaching affects the process" (p. 125).

To promote a fun learning environment, I plan to create a "Health Fair" on a Saturday afternoon with four activity stations and three adults assisting with the activities. Middle school children between the ages of 9-11 years would be present. They will begin their day by having their height, weight, and body mass index measured. This is to give them a basic understanding of their current health status. The kids will chart their results on a growth chart for girls or boys ages 2 to 20 years that shows

stature-for-age and weight-for-age percentiles (Centers for Disease Control and Prevention, 2000). The children will enjoy this because they will be able to see where they fit on the growth curve and how they compare to the other children.

The discussions after this activity will lead to how a person's health can be affected depending on their growth chart. If they are above the 95th percentile, they should exercise more and eat fewer calories, but if they are only at the 5th percentile then should increase their calories. Through the entire discussion, it will be made clear that the children need to talk to their family doctor and follow his/her recommendations about any weight or health concerns.

The next activity will demonstrate to the children what the recommended daily allowances for healthy eating are with the MyPlate. MyPlate visually represents what portions of food should be on a healthy plate. Bowls will be set out with pretend food and the children will be able to practice dishing up a meal onto their plates. Each child will be able to take a real MyPlate home with them.

Another activity will be a game called Mission Nutrition (Centers for Disease Control and Prevention, 2013). The children will be able to access the program on the computer and answer nutritional questions during an interactive game. The questions will contain information about nutrients found in food like protein, vitamin C, carbohydrates, etc. The children will be given a paper with websites for other games about nutrition to play in the future.

During our time together, I will ask the children to identify foods they have eaten in the past that fit into the food groups on the MyPlate. This will allow them to build self-esteem through enactment of healthy choices. Another variation of this is to have the

children consider the foods eaten at home and identify a healthy alternative. The children can talk about their healthy request with their parent or guardian because it is known that family influence on eating patterns is substantial (Ohshansky et al., 2005). Children overcome barriers to healthy eating by improving their access to healthy alternatives.

Children will have the opportunity to read labels of common foods and identify the fat content to bring further awareness to the nutritional value of food. To assist in raising the consciousness of fat in foods, test tubes of fat displayed in unappetizing ways would be shown to the children. Hopefully this activity will foster healthier food choices.

Another station will involve children preparing healthy snacks in small groups. They will be taught to calculate the total fat and calorie content of their snack, distributed at the end of class. This activity could build self-efficacy through enactment and is designed to help children overcome barriers to food. Discussion of ingredients and recipes will be given to the children to share with their families to promote access to healthy alternatives. Knowing how to prepare fruits and vegetables can be a barrier for some adolescents.

The final activity will be a “Make and Take” task where the children will be able to learn how to make a nutritional lunch. They will be provided ingredients for chicken wraps and fresh fruit salad which will include diced chicken, brown rice, shredded lettuce, shredded cheese, diced green peppers, tomatoes, fat free ranch, green grapes, purple grapes, diced green and red apples, chunked pineapple, and sliced strawberries. Each child will be able to make their own wraps with the individual ingredients they like. The children also would be able to put together a fresh fruit salad with the fruits they prefer.

Teaching children to cook and create meals does more than just feed them, it empowers them to make healthy choices. It creates a fun activity while teaching them “science, math, culture and healthy eating habits” (Produce for Better Health Foundation, 2014, para. 1). The goal is that they would all realize that it is fun to make their own healthy lunch and will be given additional recipes to make at home for future lunches.

These interactive, educational experiences were successful in meeting the individual needs of the children through a scientific and artistic manner by incorporating nursing knowledge, various learning styles, and Watson’s philosophy and science of caring (2008). Specific components of Watson’s (2008) Caritas Processes which included “assisting with basic needs, and creating a genuine teaching-learning experience that developed trust, was engaging, and ultimately liberating” were utilized throughout the program.

Metaphor

Watson’s philosophy and science of caring supports this project by reminding us that food and fluid is a basic need in everyone’s life. “Eating habits begin in childhood from birth onward; one’s culture and past experiences define for one what is edible, how and under what circumstances foods are to be eaten, savored, or valued” (Watson, 2008, p. 152). By enforcing the importance of good nutrition early in a child’s life, that child will grow into a healthy adult and thus pass the knowledge on their own children.

When thinking about children and nutrition, multiple visions come to mind that represent the process of empowering these children with the ability to make healthy food choices. Transforming these visions into pictures helps give meaning to words that

otherwise may be interpreted differently. The following pictures are a representation of how children embrace learning about nutrition.

Children can be thought of as “empty handed” when it comes to having the knowledge needed to make nutritious food choices (Figure 2). Many times they simply eat what they are told to eat without any thought process as to whether or not it is the right thing to do for their health. They are told what to eat by parents, the school, and even friends. However, children are ready to embrace the knowledge needed to live a healthy lifestyle: hands out, eagerly waiting for the right information to be given to them.

Figure 2: Child empty handed



Nutritional information can easily be taught with the updated version of the food pyramid. Each of the five food groups are color coded and represented in a plate format giving a kid friendly visual of what foods are recommended to be on your plate for each meal. In addition to the visual, the foundation of why it is important to follow these guidelines is taught to the children so they have the resources and understanding needed to make the healthy food choices.

Figure 3: Nutritional knowledge in your own hands



When I think about empowering young children, I think of giving them the ability to make healthy food choices for themselves through increased education. A vision of hands that contain the knowledge of the five food groups as represented by each of their designated colors is shown in Figure: 3. Hands that are free to make the food choices they need to live a healthy life.

Many assumptions are made by people that education needs to start with the parents. I feel that many times it is too late to change the behavior that has been in practice for 20, 30, 40+ years. Introducing education in the middle school years will empower children to make healthy choices which I feel will create better outcomes. Medical research has now given us the ability to see the damage caused by years of unhealthy eating. Children are sponges. They want to learn, and are ready to learn. It is imperative that the opportunity is taken to teach these children while they are young.

Watson (2008) reminds us that food and fluid is a basic need and by educating children directly, it will empower young people to make healthy choices. Children are ready to learn and strive to be independent, especially at the middle school age. Through this independence and empowerment, children will make decisions that will impact their life into adulthood thus fulfilling their primary need. Chapter four will discuss methods to measure the effectiveness of learning.

Chapter 4: Evaluation

Due to this project not being completed yet, it can only be speculated on how to complete an evaluation of the project. In order to measure the effectiveness of the nutritional education completed, it would be important to evaluate multiple aspects of the project. The evaluation process would look at the baseline knowledge level of the children, the learning styles used during the presentations, problems that arose with the format or set-up of the fair, the ending nutritional knowledge of the children, and recommendations for improvements for future fairs.

The first step would be to assess the children's baseline knowledge level of nutrition. A questionnaire would be completed by the children prior to the Health Fair (See Appendix A), and also after the completion of the fair. The questionnaire would contain items pertaining to the five food groups, daily requirements for balanced health, and their general interpretations of nutrition. The reliability of the results is unknown. The information from the surveys would be completed by a group of middle school children and depending on their frame of mind or patience level that day, data could be skewed. A way to support this data would be to observe the students at lunch on multiple days. Assessing the lunches of the children and the food choices they are making would give a good indication of their nutritional understanding.

At the completion of the health fair, feedback from the participants would be obtained regarding the different learning styles used. Depending on the feedback, adjustments could be made for future educational sessions to accommodate learning preference styles. It will be important to use a variety of learning styles as not all children learn the same.

A big impact for the future of the health fair will be the support that is received from the school faculty. During the research portion of this project, support from all associates of the school was very positive and energetic. It will be important to keep this positive atmosphere for the benefit of the program. Keeping everyone connected is key too. It will be critical to keep the lines of communication open to everyone involved so that the process of teaching the students can continue in this format.

Upon review of this project, I feel that it has great potential. The format, educational material and program environment is conducive to the learning objectives. The school and surrounding community has expressed interest in providing support. Once the program is initiated, a proper evaluation can be completed to determine whether modifications are necessary to ensure the program has maximum impact on the choices young adults make.

Chapter 5: Conclusions

Increasing the nutritional awareness in a small Midwestern middle school is a very tiny step toward permanent change when it comes to a topic as broad as malnutrition – but it is necessary to start somewhere. An opportunity for future research could evaluate the effects on the children that were taught at the health fair. If this project becomes a success, it could be shared with other schools. As the importance of living a healthy life is realized by more and more children, the future impact on pediatric nursing will be immense. It could show decreases in juvenile diabetes, childhood obesity, nutrient deficits and overall malnutrition while improving physical and mental development that leads to improved work productivity as an adult due to a strong immune system.

The issue of balanced nutrition has been a topic that has been overlooked for many years due to the personal gratification people get from eating. It has become too easy for families to reward children for good behavior with treats that consist of candy or fast food. Life has become very fast paced and with that comes convenience foods that are high in calories, fat and sodium, but low in micronutrients and vitamins. The consequences for these actions do not happen immediately so they are easily overlooked and by the time these actions have an effect on a person, damage is already done.

Pediatric nursing practice has already seen the effects of malnutrition as evidence by children with failure to thrive, delayed wound healing and increased diagnoses of type II diabetes. Care of post-bariatric pediatric patients has made its way to the forefront of daily nursing practice. To accommodate this transition in hospital admissions, a

transition in nursing education has also been required to properly care for this patient population effected by malnutrition.

Well balanced nutrition from birth is vital for proper growth and development and new parents are given the resources necessary to be able to provide that for their child. Children who do not have the ability to make the choices necessary for good health due to their young age rely on their parents for that information but continue that process unnecessarily when they would be able to make the choices for themselves. The need to empower children to make healthy food choices for themselves was identified. With Watson's philosophy and science of caring (2008) as a guide, creating good eating habits for children is essential for a healthy life.

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Appendix A: Nutrition Survey

Nutrition Survey

Boy_____ Girl_____ Age_____

1. Do you normally eat for lunch?
Hot Lunch_____ Cold Lunch_____ Some Hot/Some Cold_____
2. How do you decide each day if you are bringing cold lunch or eating hot lunch?
3. If you bring cold lunch who makes your lunch?
You_____ Family Member_____
4. If you could pack your favorite lunch what would it have in it?
5. What does the word Nutritious or Nutrition mean to you?
6. Name the five food groups:
7. When you eat hot lunch, how much of it do you usually eat?
None_____ 25% (1/4) _____ 50% (1/2) _____ 75% (3/4) _____ 100% _____
If you don't eat all of your lunch – why?
8. Do you eat vegetables every day? Yes_____ No_____
9. Do you eat fruit every day? Yes_____ No_____
10. Do you drink milk every day? Yes_____ No_____