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# Health Education to Decrease Obesity in Adolescents with Asthma

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# Walden University

College of Health Sciences

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Mitzie Thomas

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Walden University  
2015

Abstract

Health Education to Decrease Obesity in Adolescents with Asthma

by

Mitzie Thomas

Project Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

September 2015

## Abstract

Obesity increases asthma severity and is costing the health care industry a significant amount of money. Decreasing adolescents' obesity will decrease the risk for chronic health problems which can have a significant impact in adulthood. Implementing a school-based health education program can decrease the prevalence of obesity amongst adolescents. This program will be implemented by school nurses in the after-school program at Public School 59 (P.S) in New York City. The purpose of this project is to develop adolescents' school-based obesity prevention policies and documentation which will focus on increasing their nutrition education, increasing their physical activities, and providing skills to maintain behavior changes. The goal of this program is to decrease the incidence of obesity among adolescents and reduce the economic cost associated with obesity. The program was planned to use the trans-theoretical model to assess adolescents' readiness for behavior changes. The logic model tool will be used to evaluate relationship between resources and the activities for health education program. Adolescents' height and body weight will be measured and BMI will be assessed using Centers for Disease Prevention Control Pediatric Growth Chart. A posttest will be given after the 14 weeks to assess adolescents' knowledge about nutrition and increase physical activity. Adolescents will also be asked to discuss the skills they developed to maintain these behavior changes. School nurses will review formative evaluations and will provide information for stakeholders. Implementation of the structured nutrition education and increased physical education program is hypothesized to will decrease obesity amongst adolescents.

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## Section 1: Nature of the Project

### **Introduction**

Many adolescents who are obese also suffer from asthma. The Centers for Disease Control and Prevention (CDC, 2012) noted that asthma treatment is costly to the health care system. According to the CDC, there was a significant increase in emergency room visits in 2009 for treatment of uncontrolled asthma symptoms. The incidence of asthma exacerbation was higher among low-income families (New York Department of Health and Mental Hygiene, 2011). Approximately 25% of children in poor neighborhoods in New York City (NYC) have been reported by the children's health fund to be diagnosed with asthma and 10.5 million days of absenteeism from school in 2008 were due to asthma attacks.

One of the goals of Healthy People 2020 is to mitigate the effect of asthma with the eventual goal of decreasing asthma exacerbation (Healthy People.gov, 2010). Asthma is considered as one of the public health issues in the state of New York (NYS). The CDC (2013) reported a relation between the severity of asthma and obesity. Decreasing obesity amongst adolescents with asthma may decrease asthma severity.

### **Background**

Obesity is a public health issue that is costing the healthcare industry a significant amount of money. The New York State Department of Health (NYSDOH, 2013) reported that 17.6 % of students attending public schools are obese. The Department of Health (DOH, 2013) acknowledged that it is a challenging situation which will take multiple approaches to decrease the prevalence of obesity in the state. Implementing effective

school-based nutrition education programs, increasing physical activities, and teaching skills to assist in maintaining behavior changes are some of the strategies that can be used to decrease obesity of adolescents (Ross & Hart, 2013).

The impact of obesity on adolescents' health includes chronic health diseases and psychological issues (CDC, 2012). The adolescence period is important for introducing health behavioral changes because most habits developed will proceed into adulthood (Smith & Donze, 2010). The complexity of obesity makes it challenging for researchers to identify one solution to this issue; however, developing healthy eating habits and increasing physical activity has shown to decrease obesity (Schwarz & Peterson, 2010). Healthcare providers have the responsibility to effect change through the development, implementation, and evaluation of policies and documents that focus on assisting adolescents to eat healthy foods, increase physical activity, and develop skills to maintain healthy behavior changes (Kotter, 2007). Health education programs that focus on eating healthy foods, increasing physical activity, and developing coping skills to maintain behavior changes are needed to decrease obesity amongst adolescents and reduce asthma severity and other chronic disease disorders.

The CDC (2012) described asthma as a common disease that is expensive to the healthcare system with 315,000 children suffering from asthma attacks in NYS in 2010. In fiscal year 2012-2013, asthma costs in NYS rose to \$1.3 billion (New York State Comptroller Office, 2014). In an effort to decrease the prevalence of asthma the DOH and CDC launched an initiative with Medicaid to authorize in home-based asthma assessment and education for children who are at risk.

The adoption of school-based health education policy that focuses on healthy eating habits is necessary to decrease obesity. The CDC (2012) explained that obesity is associated with worsen asthma symptoms, increased medication use, and hospitalization. Obesity increases the severity of asthma and decreases quality of life (Ashcraft, 2012; Liu, Kieckhefer, & Gau 2013; Ross & Hart, 2013). The CDC (2013) revealed that the United States has shown dissatisfactory improvement in combating obesity among this target group. The development of policies and documents for schools on nutrition education, increased physical activity, and skills to maintain behavior changes may be effective in promoting healthy behavior habits among adolescents. These strategies may influence adolescents to adopt healthy lifestyle which will lead to decrease in obesity and improve quality of life.

Providing adolescents with the opportunity to participate in regular physical activity will enhance healthy lifestyle. The NYSDOH (2013) reported that approximately 18.2% of adolescents are obese. The New York City Department of Health and Mental Hygiene (2012) revealed that one in three adolescents do not exercise for 20 minutes per day for three times per week. Approximately eight out of 10 adolescents eat fewer than five servings of food daily. Healthcare professionals, state and local government, schools, and communities have a responsibility to provide interventions to combat obesity among adolescents. The development of a school-based after-school health education program in NYC that is focused on a nutrition education program, increased physical activity, and coping skills will assist in combating adolescents' obesity.

Allowing adolescents to assess their own eating habits may encourage them to take personal responsibility for their food choices. According to CDC (2012), policies and documents play a key role in assisting in developing sustainable interventions to support health food choices and increase physical activity among obese adolescents. The development of a school-based program to provide nutrition education, promote physical activity, and provide skills to maintain life-long behavior changes is important to decrease obesity among adolescents (Mochari-Greenberger, Terry, & Mosca 2010).

Increased obesity among adolescents and the related increased health care costs put adolescents at risk for weight related health problems in adulthood and can contribute to poor self-esteem (Boom & Clydesdale, 2005). The implementation of a structured health education program that is focused on healthy nutrition habits, increased physical activity, and maintenance of health behavioral skills can reduce the prevalence of obesity among the adolescents population (Malcarney, Seller, & Horton, 2013). There is little research focused on school-based health education programs designed to decrease obesity amongst adolescents (Ashcraft 2012). There is a need for more research to provide new evidence on the effect of such a school-based health education program.

### **Problem Statement**

Obesity amongst adolescents is a significant problem in the United States of America and healthcare providers, local and state legislatures and school district leaders must implement structured programs to decrease it. The increase in adolescents' obesity put them at risk for chronic health problems which can have significant impact in adulthood. The NYSDOH (2013) reported that one third of the children in NYS are

obese. Obesity is related to several health problems such as asthma (CDC, 2011). This poses serious issues on quality of life which include health and other psychosocial problems. The disease is also costing the healthcare system a significant amount of money (CDC, 2012). According to Zhu & Thomas (2013) school-based policies that are mandated by local and state governments are more comprehensive and structured and program data are well documented. The lack of policies and documents for school-based nutrition and physical education programs make it challenging to combat adolescent's obesity in schools.

### **Purpose Statement**

Obesity amongst adolescents has become an epidemic and a national concern seriously impacting the health care system. There are health and psychological problems that are associated with being obese. The purpose of this project is to develop school-based obesity prevention policies and documentation which will focus on nutrition, increase physical activities, and provide skills to maintain behavior changes in adolescents.

### **Goals and Outcomes**

Local schools are required to develop a wellness policy to focus on nutrition and physical activity to promote health. The CDC (2013) and Robert Wood Johnson Foundation (RWF, 2007) discussed their support for policies that focused on evidence-based strategies. School districts in NYC have reported an increase in the prevalence of obesity with the highest rates being among minority and poor children. The effort to create healthy behaviors is essential to decreasing obesity amongst adolescents.

The goal of this program is to decrease the incidence of obesity among adolescents and reduce the economic and noneconomic costs associated with obesity. The outcome of this project will be to develop documentation and policies which will be essential for the nurses in the school district to use to develop health education programs and increase physical activity within the school environment.

### **Evidence-Based Significance of the Project**

Poor dietary intake and decreased physical activity are associated with obesity. The CDC (2012), along with the United States Department of Health and Human Services (USDHHS, 2008) recommended changes in food choices, increased physical activity, support of changes through behavior modification, and family involvement to improve weight outcomes. Williams and Mummery (2012) conducted research on the association between adolescents' nutrition behaviors and the characteristics of parents. Williams and Mummery revealed that nutritional behaviors contribute to overweight and obesity and understanding the behaviors of these adolescents is essential to changing their eating habits.

The interventions developed to promote healthy behaviors amongst adolescents should include school-based programs which focus on increased physical activity, nutrition education, and skills to maintain behavior changes (CDC, 2012). Parental involvement is important to assist adolescents in maintaining behavior changes (Seller & Horton, 2013). Although adolescents may adopt changes in eating habits, there are environmental factors which can influence unhealthy eating habits; involving parents may assist in maintaining behavioral changes.



The promoting of adolescents' healthy nutritional behavior incorporates healthy food choices, right portion size, and increased physical activity. School-based nutrition interventions are suggested by researchers as an effective medium of preventing adolescent's obesity (Malcarney et al., 2013; Williams & Mummery, 2012). While adolescents are more aware of the consequences of obesity, schools are responsible to provide structural intervention to help them improve their nutritional and physical status.

In a study conducted Mochari-Greenberger et al. (2010) to provide health education to adolescents in an after school, the findings supported the idea that schools play a pivotal role in implementing evidence-based strategies to combat adolescents' obesity. Results from school-based obesity intervention program showed a decrease in obesity amongst adolescents. However, effective intervention and evaluation is needed to assess the long and short-term effect of obesity programs (Williams & Mummery, 2013). Although there are researches on school-based obesity program there are limited reports on obesity intervention among adolescents (Mochari-Greenberger et al., 2010). School-based intervention programs can decrease the incidence and prevalence of adolescent's obesity short-term; however, further research is needed to provide information on the long-term effect of the behavior changes from a school-based intervention program (Gonzalez-Suarez, Worley, Grimmer-Somers, & Dones 2009).

### **Implication for Social Change in Practice**

Evaluating changes to practice is essential in the delivery of health care (Rowen, 2009). Public and private health insurance can play an essential role in financing community-based health education interventions to decrease obesity (Malcarney et al.,

2013). According to the CDC (2011), 12.5 million adolescents age 19 and younger are obese, an increase from 5% in 1980 to 18.1% in 2008. Obesity is a social issue and researchers, health organizations, and health professionals all linked obesity as being risk of developing several chronic diseases which have long term consequences. As the incidence of obesity increases, society will have to pay more for treatments related to these consequential problems.

The adoption of health behavior changes through increased physical activity and choosing healthier foods can decrease weight, improve self-esteem, build confidence, and decrease risky behaviors among adolescents (CDC, 2012). Calamaro and Waite (2009) cited that adolescent obesity can lead to psychological problems such as depression. Obese adolescents are more subject to social discrimination and stigmatization which can affect academic and social skills; these negative impacts can channel into adulthood (Stang & Story, 2005). Adolescents who lose weight will boost their self-esteem and self-confidence.

### **Implication to Nursing**

One of the roles of a DNP prepared nurse is to focus on the needs of a target population, develop and implement health education programs, and to work with interdisciplinary team to improve health outcomes. Disease prevention and health promotion are essential elements of advance nursing practice; promoting healthy eating habits, increasing physical activity to improve adolescent's health, and decreasing overweight and obesity are important to nursing practice (Institute of Medicine, 2005). The development of the nutrition education program which focus on increasing physical

activity and developing coping skills to sustain behavioral changes may improve adolescent's quality of life (Williams & Mummery, 2013). Nurses could educate parents and guardians to be role models for their children in eating healthier foods and increasing physical activity.

### **Definition of Terms**

*Obesity*: Weight that is considered “greater than healthy weight for a given height” (CDC, 2012, p.1).

*Body mass index (BMI)*: Used to identify potential risk associated with obesity and an acceptable measurement. It is required that BMI be calculated and plotted on all youth yearly support the guideline for schools to conduct annual weight screening. These are important information for healthcare providers (CDC, 2012, p. 1).

*Behavioral changes*: In obese adolescents, such changes include eating healthful diet and increase physical activities. The benefits of the changes include weight improvement which will decrease risk for obesity associated disease. A behavioral change approach is utilized to assist adolescents to use skills (such as eating low caloric food, low fat food) to attain healthy weight (Foster, Makris, & Bailer, 2005). Also to allow adolescents to identify activities that triggers increase eating and adopt new responses to them. Developing short-term and long-term goals will help to achieve and maintain health behavior changes.

*Health education:* Involves teaching adolescents about nutrition, reinforcing healthy eating, and teaching skills needed to make dietary changes and an increase in physical activity. The understanding of adolescent's cognitive and social development is an important consideration for effective education (Foster et al., 2005).

*Physical activity:* Activity that improves strength, bones, and muscles; helps maintain healthy weight; reduces stress and anxiety; and increases self-esteem (CDC, 2012, p. 1). Adolescents' participation in 30 minutes of daily physical activity that they enjoy will improve general health and reduce obesity.

### **Assumptions and Limitations**

Assumptions are statements that are not proven scientifically, but should be mentioned (Grove & Gray, 2011). The assumptions that relate to this project may be that school-based nurses do not have the knowledge and adequate training to successfully implement a health education program (RWF, 2007). I assumed that the implementation of a health education program may not decrease obesity among adolescents, and adolescents may not maintain lifelong health behavior changes (Foster et al., 2005). The final assumption is that adolescents who participate in the health education program may be stigmatized as being obese by other students (Calamari & Waite, 2009).

Limitations to the project include participants' attendance to the program. Poor attendance can have a negative impact on the program. The decrease in the number of participants may affect the outcome. Grove et al. (2013) cited that participants' attendance and activity level in the program has an effect on the outcome of the program.

Another limitation is the lack participation of adolescents who actually attend the program. This can affect behavior changes due to lack of interest. Zoellner et al. (2013) conducted a health education program with 91 participants and only 58 participants completed the program. Zoellner et al. concluded that those who remain in the study maybe the ones who were motivated to change nutritional behaviors.

### **Summary**

The development of a structured health education program which includes increasing physical activity, teaching skills to make dietary changes, and providing strategies to maintain behavior changes is essential to the adoption of healthful behaviors. Change in health behaviors will decrease weight and improve adolescents' quality of life. Obesity put adolescents at risk of developing obese related diseases. Researchers have revealed that school-based health education programs can influence healthy eating habits among adolescents.

## Section 2: Review of Literature and Theoretical and Conceptual Framework

### **Introduction**

The purpose of this project is to develop adolescent's school-based obesity prevention policies and documentation which will focus on nutrition, increase physical activities, and provide skills to maintain behavioral changes. The Healthy People 2020 objectives are to change individual's behavior and environment that support the unhealthy eating habits and inactivity (HealthyPeople.gov, 2010). In an effort to achieve these objectives different community-based initiatives have been developed to support healthy eating habits to reduce weight. Another effort to decrease obesity amongst adolescents evolved from the former Mayor of New York City, Mayor Bloomberg, who signed an executive order that developed standard for meals and snacks in the schools (The New York City Department of Health and Mental Hygiene, 2011).

Obesity is identified as a serious chronic disease that is costing the healthcare system a significant amount of money (CDC, 2012). U.S Presentative Task Force (2010) recommended that providers screen children who are age 6 and older for obesity and refer them appropriately for meaningful behavioral changes. The CDC (2012) reported that obesity may cause worsen symptoms in asthmatic which result in poor asthma control. This section is a review of the literature and frameworks that address the relationship between asthma and obesity.

### **Literature Search**

The databases searches for literatures included CINAHL, Cochrane, EBSCO, Medline, OVID and PubMed. Only articles published over the last 10 years were

included in the literature review. The search terms used to access the articles were *obesity, overweight, increase body mass index, asthma, asthma severity, relationship, adolescents, health education, dietary education, and physical activity*. The word *and* was used to connect information and to broaden the search.

### **Asthma**

Asthma is a chronic disease of the lungs (CDC, 2012). Lavoie, Bacon, Labrecque, Cartier, and Ditto (2005) noted that BMI and obesity are potential factors for a decrease in quality of life due to uncontrolled asthma. Obesity is associated with reduction in the functional residual capacity (FRC); individuals who are obese and asthmatic breathe at low volumes. The United States Environment Protection Agency (EPA, 2013) reported an estimated 7.1 million children with asthma and that the prevalence was higher among low income families. African Americans have higher hospital visits, hospitalization, and deaths than Whites.

A total of approximately 10 million absent days from school are related to an asthma attack and the annual economic cost is estimated at \$56 billion. Asthma and obesity are costly to the healthcare system and are associated with increased mortality. Stream and Sutherland (2012) revealed that obesity significantly impacts asthma in terms of severity and control. Sideleva et al. (2012) investigated “obesity and asthma as an inflammatory disease on the adipose tissue” (p. 559) and reported that markers such as the leptin and adipokines are associated with airway disease in obesity. Airway hyper-responsiveness is considered to be influenced by obesity especially among females than males and may also cause changes in lung function (Sposato et al., 2013).

Several cross sectional epidemiology studies were conducted by the American Thoracic Society to understand the association between obesity and asthma. The findings respectively revealed that there is an increase prevalence of asthma among the obese population (Dixon et al., 2010).

### **Obesity and Asthma Control**

Asthma control is affected negatively by obesity. Obesity is associated with reduction in the FRC; individuals who are obese and asthmatic breathe at low volumes (Lavoie et al., 2005). Farrah et al. (2011) asserted that during bronchial problems, obesity can increase lung elasticity which can lead to dyspnea which is less responsive to steroids. Dixon et al. (2010) pointed out that weight loss in obese individuals' results in improvement in asthma control. Boom and Clydesdale (2005) believed that health education intervention is the most effective strategies to reduce obesity and improve quality of life. Obese individuals are at risk for developing chronic diseases such as cardiovascular disease, diabetes Type 2, and hyperlipidemia (Doak, Visscher, Renders, & Seidell, 2006). The World Health Organization (WHO, 2009) recommended population-based approach to decrease obesity among adolescents to encourage positive health behaviors and to decrease health risk.

### **Prevalence of Childhood Obesity**

There has been a significant increase in childhood obesity for the past 10 years and has been the fifth leading cause of mortality globally (WHO, 2009). Obesity has a prevalence of 22.4% among Hispanics, 20.2% in non-Hispanic Black young adults, 14.1% Whites, and 8.6% among Asian youths (CDC, 2012). The prevalence of obesity



has been the focus of several public health organizations. The CDC (2013) funded community programs developed to decrease childhood obesity. The U.S Surgeon General has made recommendation such as walking regularly as an effective strategy to decrease obesity (USDHHS, 2008).

The CDC (2013) recommended changes in dietary choices, an increase in physical activity, supported changes through behavior modification, and family involvement to improve weight outcomes. Ashcraft (2012) pointed out that treatment for obesity should include an adolescent's knowledge and values in order to gain success. Implementing small achievable goals and identifying potential barriers towards change are necessary to gain adolescent's participation. The use of trans-theoretical model (TTM) stages of change to identify adolescents' readiness for change in health behaviors lead to desirable health outcomes (Prochaska & Velicer, 1984).

Zhu and Thomas (2013) examined the connection between an adolescent self-reporting weight control behaviors and school-based obesity policies. Zhu and Thomas revealed that schools are vital places to conduct health education and ideal sites for behavioral changes. In order to experience health behavioral changes, adolescents have to be aware they are obese and be concerned about their weight.

Smith, Sweeting, and Wright (2012) asserted that adolescents who are not concerned about their weight are less likely to adopt behavior changes. It is important that intervention is designed to meet adolescents' learning style, needs, convenience, and include family engagement to ensure treatment completion. This approach has proven to enhance adolescents' motivation. Brennan, Walkley, and Wilks (2011) advised that

treatment goals should be relevant to adolescents and parents and that adjustments be in place to address barriers to health education interventions.

### **Physical Activity Intervention**

Although there are inconsistent reports in the amount of increased physical activity (PA) that is needed to reduce obesity, there is compelling evidence that an increase in PA will result in weight reduction and improve overall health (Basu, Sellgman, & Winkleby, 2014). Inactivity is considered one of the preventable causes of premature mortality due to obesity related comorbidities (Trowbridge & Schmid, 2013). In a 2014 study to examine the effect of physical activity on weight loss Zhao and Settles concluded that PA approaches should be both individual and environmental to impact weight reduction. PA is recommended as a strategy for weight management and weight reduction.

Vasquez et al. (2013) conducted a study with 120 children ages 8 to 13 years from three different schools to evaluate the effect of strength training exercises on obese children. Group 1 participated in physical exercise, dietary education and psychological support for 3 months. Group 2 participated in dietary education and psychological support for 3 months, and then physical exercise from 3 to 6 months. There were significant improvements in Group 2 participants. Group 2 participants experienced positive changes in their BMI  $z$  score, waist circumference, and body fat. Increased physical activity is a treatment modality for obesity.

## **Dietary Changes**

Increased calorie consumption leads to obesity and controlled dietary intake helps to maintain optimal weight and reduce weight gain. The best dietary intake that will lead to weight loss has been debated (Zhao & Settles, 2014). The control of portion size is the hallmark of the management of obesity to control the intake of calories (Astrup, 2008). A 10 week intervention program was conducted in 2012, which targeted 30 Mexican males age 8-12 years. The intervention included dietary education with exercise. The participants were randomly placed in three groups. Group 1 included dietary education and individualized step goals for participants and their parents. Group 2's intervention was dietary education with exercise, step goals settings using pedometers, and personal training. Group 3 participants got no dietary education, no control, or exercise. Results revealed a reduction in weight in Group 2 which included the implementation of dietary education and involvement in physical activities.

Nakamura (2008) conducted a study evaluating the role of dietary nutritionists in school to educate children about appropriate eating habits. These dieticians were trained in pedagogy that is included in the standard dietician curriculum. According to Nakamura, nutrition education should be a subject in all schools, individual dietary counseling should be given to children. Parents should also be given nutrition counseling. These interventions are effective precautions that are needed taken to prevent dietary related chronic diseases.

Dietary intake has a significant impact on energy imbalance that can lead to obesity. Promoting dietary changes that is an effective measure to decrease obesity

related morbidity (CDC, 2012). Multidisciplinary treatment intervention helps adolescents make dietary changes that improve BMI percentile; dietary behavior changes involve motivation and self-regulation (Lippke & Ziegelmann 2008).

### **Frameworks**

The TTM will be used for this study. The prevalence of obesity amongst adolescents requires the need to use evidence-based guidelines to disseminate interventions to decrease weight on a population level (Stang & Story, 2005). The TTM framework can be applied to guide weight management interventions.

The TTM construct will be used to assist adolescents to move on to the next stage during a nutrition education program conducted by Stang and Story (2005). The framework will be used as a support to adolescents and also to create strategies to aid them to advance to the next level. The component of the framework includes precontemplation, contemplation, preparation, action, and maintenance (Prochaska & Velicer, 1984). The identifying of the stage each individual is at is used to examine barriers to change and provide strategies to overcome barriers. Such strategies are noted as essential to the implementation of successful and sustainable health behavior changes.

Another framework that will be used in the program is the logic model. This framework will be used to guide the planning, development and evaluation of the program. The use of the logic model can directly link each component of the program by directly showing the relationship between the activities and resources which may influence more financial support for similar programs in the community.

Hallinan (2010) used the logic model to evaluate the Pap smear nurse incentive program. The aim was to disclose the barriers to nurses in performing their job. The logic model organized the program as a framework and links the different components which include the resources, activities, and outcomes. Hallinan asserted that the model helps to explain connections, assumptions, and to provide information to the organization leaders who fund the program.

In a similar study conducted by Lane and Martin (2005), the application of the logic model was used to evaluate the program for preventative health care for breast. The logic model was used in the development of the components of the health program. Lane and Martin emphasized that the logic model helped the policy makers as well as stakeholders to understand the relationship between the activities and the resources. This model will also serve as a framework in developing future programs and gives information on the resources that are needed to implement and sustain programs. The evaluation of outcomes is important for potential buy-ins to similar health education programs.

### **Summary**

Researchers have linked poor eating habits and sedentary lifestyle to obesity. Increased PA may facilitate long term weight loss and maintenance of optimal weight. Nutrition management through dietary changes can decrease obesity and obesity related comorbidities. The use of a framework can serve as a guide to nurses and other professionals to develop successful health education intervention programs.

### Section 3: Methodology

#### **Nature of the Project**

The purpose of this project is to develop school-based obesity prevention policies and documentation for adolescents which will focus on nutrition education, increase PA, and provide skills to maintain behavioral changes. Promoting and providing opportunities for adolescents to participate in nutritional education, physical activities, and to develop skills on maintaining behavioral changes is effective in decreasing obesity among this population (Aschaft, 2012). School educators, school nurses, school psychologist, and chancellors are all stakeholders and can have an impact on the environment in which adolescent's learn and can effectively contribute in combating obesity (Mochari-Greenberger & Mosca, 2010). Including adolescent obesity prevention policies and documentation in school-based curriculum will have significant positive outcomes. The project will achieve these activities by:

1. Choosing a team to participate in the project that includes the stakeholders
2. Identify New York State Education Standards
3. Develop project guidelines
4. Development of implementation plan
5. Development of evaluation plan

#### **Project Team**

Members of the project team were selected based on their interest in health education for obese adolescents. The increase in adolescent obesity rates and the urgent need to address the epidemic has school nurses, organizational leaders, teachers, and

health professionals interested in projects focused on prevention and intervention in decreasing obesity. Members of the health education project team are as follows.

1. The leader and developer of the project: Develop, design and direct project
2. Preceptor: Pediatrician-Stakeholder of the .project and provider of resources (funding)
3. Four school nurses: Function as educator and facilitator
4. Volunteers: Record attendance and data collection
5. Two physical education teachers: Teach physical activities

Each member of the team was educated to perform in the role assigned. It was important that each member had the skill to perform the role that they were assigned. Open communication was equally important for the successful development of the program. Respect for each team member was vital, also listening to suggestions and criticism. The team leader was charge with the role of bringing closure to the project through recapping on project goals and acknowledging the organizations involvement (Hodges & Videto, 2011).

The primary role of the leader was to facilitate open communication and feedback and to provide information and guidance to the team members as it related to elements of the development of the health education program. It was imperative that each member of the team understand their assigned role and was comfortable in serving effectively in the capacity. Structured workshops were conducted to prepare team members for the designated roles. The attendance to the presentation was to promote acceptance of the program. The team leader developed policies and document for the program. The

evaluation and implementation of the project will be done by the other members of the team after the project is completed.

### **Review of Evidence**

School-based health education program is important for successfully decreasing obesity among adolescents. School nurses are qualified to lead in helping adolescents to maintain healthy weight through developing and implementing health education programs aimed at maintaining healthful lifestyle (National Association of School Nurses [NASN], 2014). Bedford-Stuyvesant and Bushwick are two communities in School District 17 with a prevalence of one in three adolescents who are obese, eight out of 10 adolescents eat less than five serving of fruits and vegetables daily, and one in three adolescents reports not exercising at least 20 minutes a day for at least 3 days per week. Increased daily activities, eating adequate nutritional food, and maintaining healthy behavior lifestyles are components to decreasing obesity and living a healthy life.

The implementing a health education project by school nurses at Public School 59 will help to decrease obesity epidemic in the district. The school has an enrollment of 425 students for 2014 and served students from Pre-Kindergarten to sixth grade. There is an afterschool program that provides support for students who need extra lessons. The school served the minority population of African American and Hispanics.

### **Education Standards**

The NYS educational standards will be considered in the delivery of the health education intervention. It is important to incorporate the New York School standards in the delivery of health education. The National Health Education Standards (NHES)



framework and standards are developed to promote health behaviors in the schools. These standards provide students, families, communities with expectation for health education (CDC, 2011). The guidelines are for curriculum development, instruction, and student health education assessment. The constructs of the standards are aimed at disease prevention and health promotion (Ward-Begnoche, Gance-Cleveland, Harris, & Dean, 2008).

The health education project mission statement is aligned with the mission of the school district as it relates to decreasing the prevalence of adolescents obesity and the empowerment of adolescents to gain lifelong healthy behaviors (NASN, 2014). The health education project can be widely used by different age groups in schools, communities, and health organizations. However, this project is developed to be implemented by school nurses and other organizations.

### **Project Guidelines**

The proposal for this project is the development of a structured health education program which will provide nutrition education, physical activities, and skills using the stages of change model to sustain behavior changes (Mochari-Greenberger et al., 2010). Lack of increased physical activities and poor nutrition contribute to obesity and other health related issues. A well-designed nutrition and physical education program can decrease the trend of obesity and health care cost (Astrup, 2008).

Another significant aspect of the project is the documentation of adolescents' readiness and progress in changing health behaviors. Giving adolescents the opportunity to assess their eating habits and to make conscious changes in behaviors is critical to their

wellbeing. Assessing and documenting their readiness for change and providing nutritional counseling is important to effect positive change. According to Stang and Story (2005), documenting where each adolescent is using the change theory, setting individual goals, and creating strategies to obtain those goals are important to sustaining behavioral change. Identifying barriers to change and providing feedback and problem solving techniques will increase adolescent's motivation and confidence in pursuing goals.

The project will be implemented at a later date by school nurses in District 17; but, can be used by community health organizations and other health organizations. The team will focus on adolescent's ages 10 to 19 years who attend school in District 17 whose BMI is greater than 18.5. Fletcher, Cooper, Helms, Northington, and Winters (2007) explained that in order to reduce obesity in the African American population, structured nutrition education should be used. This can result in weight reduction, a decrease in BMI, and waist girth of greater than 4 inches, and positive behavior changes.

A model for nutrition counseling was developed by the team leader and shared with team for feedback. This model will be used to assess adolescent's readiness for the change. Strategies will be developed to advance adolescents to the next stage and to sustain changes (Appendix A). Also the content to be taught was presented to the project team and suggestions were accepted and changes made accordingly.

### **Development of an Implementation Plan**

Four school nurses at PS 59 will implement and evaluate the health education project as approval was given by the Walden University IRB. The recruiting for

adolescents' participation in the project will be conducted by the nurses. The nurses will get written permission from the parents via email and adolescents will assent to participate. Adolescent's information will be private and confidential.

The development of the implementation plans was discussed with the project team members and the actual implementation was agreed upon. The program leader conduct training regarding programs purpose, goals and the content of the program. In addition, the sessions were monitored by the preceptor and feedback will be given as needed. The outline for the workshop was as follows:

1. Team members who were providing education to adolescents had attend 5 days' workshop before the implementation of the project which will prepare them to effectively provide nutrition and physical education also materials will be distributed.
2. Team leader and the other nurses will measure adolescents' height, weight and BMI.
3. Health education will be delivered to adolescents by team leader (who is a school nurse and 3 other school nurses).
4. Outcomes will be assessed by the nurses to evaluate if goals are met.

### **Budget**

The success of the program depends on the resources and development of a budget to provide guide for the project. The stakeholders are an important part of the development of a project; therefore, having an estimated budget will garner support for

the project also prevent unforeseen problems (Zaccagnini & White, 2011). The budget will cover the resources, materials, partial salaries, and incentives for the program.

Table 1

*Approximated Expenses for Project*

School nurses (40) 1 hour/day for 4 days x 6 months	\$950.00
Team Leader	\$0.00
Stationaries/materials	\$212.00 (approximately)
Incentive (water, metro card)	\$170.00
Volunteers (metro card) 1 hour/week x 6 months	\$60.00
<b>Total Expenses</b>	<b>\$1, 392.00</b>
Revenue for project: Dr. Purcell's Private Practice	\$1, 500.00

### **Project Evaluation Plans**

The project evaluation plan that was developed will be performed by the other team members. The target population is adolescents who are obese and are attending school in District 17 and the designated site will be PS 59. The program will benefit from summative and formative evaluation. The goals of the evaluation plan are as follows:

1. By the end of the program adolescents will report a change in dietary behaviors by choosing more healthy diet.
2. Adolescents will report an increase in physical activities of at least 5 days per week.
3. Program will be assessed by stakeholders each month and adjusted and revision will be made as the program progress.

The collection of data through the use questionnaires and measurements of height, weight and BMI will be used to determine if goals are met. The CDC growth chart will be used to identify adolescents' BMI. School nurses currently used this chart to assess students' BMI. The formative evaluation will allow assessment of the program that will be conducted by the stakeholders during the program implementation. The following questions will be asked:

1. Did the program implemented according to the design?
2. How could we adjust or revise the program?
3. Feedback from instructor
4. What are the benefits and challenges to the program implementation?

Participants will be given questionnaire to answer anonymously to the following questions:

1. What are some of the steps you will be taking to maintain the change that you have made in your eating habits?
2. How do you plan to continue daily physical activity?

Maintaining health behavior changes is critical to adolescents having a healthful life and a productive adulthood. Identifying of strategies to assist in maintaining changes are measures to positive outcomes. Results from the questions asked will be used to determine if the goals have been achieved. The outcomes of the project can influence policy makers to provide more resources and to fund similar project (Mochari-Greenberger et al., 2010). Community-centers and other schools can adapt the project to help in decreasing the prevalence of obesity.

### **Summary**

Several stakeholders in the outside the home-setting can influence the environment in which adolescents learn through providing health education to decrease the trend of obesity. The development of health education project is important to bringing awareness of the need for adolescents to change health behavior habits. This section proposal was a presentation of the planning of a school-based obesity prevention program and the development of policies and documentation which will focus on nutrition, increase physical activities and skills to maintain behavioral change will improve adolescent quality of life.

## Section 4: Findings, Discussion, and Implications

### **Introduction**

Obesity in adolescents with asthma has significant impact on severity and control. Providers, lawmakers, and school administrators have to find a way to decrease obesity amongst this population. The literature indicated that school-based structured health education program may decrease obesity amongst adolescents. The purpose of this project is to develop adolescents' school-based obesity prevention policies and documentation which will focus on nutrition education, increase physical activities, and provide skills to maintain behavioral changes.

### **Discussion of the Project**

In the process of developing a health-education program a project team was created this includes me, my preceptor, four school nurses, two nursing students, two physical education teachers, and three volunteers. School nurses are expertise in their field and will be charged with the implementation of the project, the physical education teachers are also experts, and the volunteers will be charged with the administrative aspect of the project, such as taking attendance. The design of the school-based health education program for obese adolescents with asthma include the purpose and goals, content and structure, workshop for personnel, and budgetary concerns. The development and adaption of a school-based health education program is critical to decrease adolescents' obesity (Ward-Begnoche et al., 2008). The focus of school policies and documents development for formative implementation of a school-based health education program aimed at decreasing obesity could be initiated.

Upon approval from the Walden University IRB, I proceeded with the planning of the health education program. I designed a folder that contained materials for the implementation of the health education of program at PS 59 after the approval for the DNP project design. The folder contained the materials needed to implement and evaluate the health education program at the after school program at PS 59. The program outline was as follows: Appendix A: Stages of Change, Appendix B: Content, Appendix C: The Logic Model, and Appendix D: Formative and Summative Evaluation. The program was designed to provide physical activity after nutrition education session. The physical education instructors will engage students in structured activities and games such as ball games, basketball, jump rope, and tag game. My contact information was provided to the team leader in the event that they have any questions or they needed assistance during the implementation or evaluation of the program.

The content of the program was incorporated into nutrition education and physical education and coping skills. Fourteen sessions were outlined. After the outline was created the materials for instructions were assessed for age appropriation. Instructor's resource information was included in the program materials also handouts, and structured activities for the students. The topics for discussion are nutrition and physical activity education which includes reading food labels, discussing portion size, the food pyramid, choosing health food, benefits of increase physical activity, and developing coping skills to maintain behavior changes.

The content of the deliverable prepared by the writer provided for nutrition education instructions in small groups, followed by physical activity sessions. This



facilitates effective communication and development of relationship among adolescents in the group to help in the presentation nutrition education (Ward-Begnoche et al., 2008). The physical activity content component was developed for physical instructor's to actually engaged students in moving and learning physical games (Appendix B). The writer incorporates coping skills and behavior changes component. The trans-theoretical model was developed to assess adolescent's knowledge and provides strategies to move to next level (Appendix A). I developed the logic model to provide information between the resources and activities (Appendix C).

### **Evaluation**

The project was designed to be evaluated using summative and formative methods. The formative evaluation will assess the program during the implementation, to assess adolescent's involvement, instructor's capabilities to deliver instructions and to engage adolescents effectively, and the environment that the instructions will be delivered. This type of evaluation is important because it will provide valuable information on how the program's goals were obtained and if not why the goals were not achieved (Hodges & Videto, 2011).

The summative evaluation was developed to assess the impact of the health education program on adolescents (Appendix D). Summative evaluation will be conducted at the end of the program to find out if the program had achieved its objectives and goals (Hodges & Videto, 2011). Most importantly, this is to be used to develop school-based policies and documents that focus on nutrition education and increase

physical activity. The team, not including myself, will be responsible for implementation and evaluation of the health education program.

Some of the challenges that I encountered during the development of the project are in identifying the content, activities, and the information that will be provided to help these adolescents maintain behavior changes. As the DNP student, I had to review adolescent learning styles, and to focus on the outcomes that I wanted to achieve from the project which served as guide to overcome the challenges. The training workshop with the project team members to orient them to the project and provide training on specific of the health education intervention also provided valuable information through the feedbacks from the team members on activities for the program. Hodges and Videto (2011) emphasized that feedbacks are important during project development. Another challenge that I encounter was in organizing the information that I had researched during the development of the project. The feedback from colleagues and Dr. Taylor through the submission of the project during the different stages had assisted me in the organization of the information.

### **Implications**

School nurses are expertise in their field and are qualified to provide structured health education that focus on nutrition education, increase physical activity and skills to maintain behavior changes in schools to decrease obesity amongst adolescents with asthma (Kotter, 2007).

**Practice**

School nurses are in the position to educate adolescents about asthma control, maintenance, and management. Nurses can become active by providing intervention and developing policies that are aligned with the Healthy People 2020 national goals. Clinicians are charged with the responsibility to decrease school absenteeism, decrease emergency department visits, and provide education to improve quality of life for adolescents with asthma (Scrof, Toboas, & Velsor-Friedrich, 2012). Obesity is considered as one of the contributory factors of asthma severity and control (CDC, 2011). School nurses can implement effective education appropriate to adolescents' development to decrease obesity amongst adolescents and to improve asthma outcomes. School nurses scope of practice incorporates health education and promotion interventions and teaching coping skills to maintain dietary changes amongst adolescents which will lead them to life-long healthy habits (American Nurses Association, 2010).

**Policy**

School-based health education programs that focus on nutrition education and increased physical activity can provide life-long healthy behavior habits. Healthy nutrition has an influence on both adolescents learning and health (Aschaft, 2012). Currently most schools are not engaged in structured nutrition education programs although researchers showed that a comprehensive school-based health education program can decrease obesity among adolescents through the change in eating habits and increase in physical activity (CDC, 2012). School-based policy and documents need to be developed to guide nutrition education in all schools (Kotter 2007). The implementation

of this DNP project will provide policy and documents that school districts can use to incorporate health education that focus on nutrition education and increase physical activities in NYS schools.

### **Research**

School-based health education programs are important to the improvement of adolescents overall health. Designing a program that are aligned with NYS school standards can be effective in combating obesity through the empowering adolescents to choose healthy foods and increase physical activity (Malcarney et al., 2012). According to Williams and Mummery (2013) tackling obesity at the adolescent's stage will prevent unhealthy eating habits to continue into adulthood. Rowen (2009) noted that the development policies and document are essential to the implementation of school-based health education programs that target obesity.

The research revealed a decrease in obesity in a school-based health education program that was geared toward decreasing obesity short-term. However, more research is needed to provide information on the long-term effect of health education on adolescents (Astrup, 2008). School-based studies to date also showed the use of different strategies to teach healthy eating habits such as focus groups and peer-peer teaching. School-based health education program strategies that are geared toward adolescents' developmental stage can decrease obesity and improve quality of life (Astrup, 2008, Zhao & Settles, 2014).

## **Social Change**

The adoption of health behavior changes through eating of healthy diet and increase physical activity can decrease weight, improve self-esteem, build self-confidence, and improve quality of life (CDC, 2013). At the school-based level educators can make it more accessible for adolescents to access healthier foods. For example, schools can serve healthier foods and provide opportunities for daily physical activities. One significant approach to social change is to assist adolescents to be ready to change. Assessing adolescents' readiness for health behavior changes and assisting in readiness through applying strategies is crucial in the sustaining of life-long behavior changes (Prochaska & DiClemente, 1984). Stang and Story (2005) cited that adolescent obesity can lead to social discrimination and stigmatization which can have a negative outcome such as interference with academic performance and social skills which if not address can continued into adulthood.

### **Strengths, Limitations, and Recommendations of Project**

The strength of the project is the use of trans-theoretical framework to assess adolescents' readiness for participation in the health education program and to provide strategies to assist in helping adolescents' to advance to the next level of readiness to (Stang & Story 2005). It is important for adolescents to be in the action stage to be ready to commit to changing health behavior. The benefit of utilizing the TTM framework is that interventions for adolescents' readiness for health behavior changes will be tailored to adolescents' specific needs which served to maximize success for adolescents'

participation in the nutrition education, increase physical activity and in learning skills to maintain behavior changes.

The other strength is use of the logic model to evaluate the program during the implementation phase. The logic model served to give a visual outline of the stakeholder's investment in the program, the tasks that the adolescents engaged in, the short-term outcomes which include the adolescents' knowledge, skills, and motivation as it relates to health behavior changes through nutrition education and increase physical activities. The medium-term outcomes will evaluate adolescent's behavior, practices and decisions as a result of their active participation in the program. Consequently, for the long-term impact of adolescent's obesity stakeholders may focus on the economic, social and environmental impact (Lang, 2011). The aim is to develop policies and documents for school-based nutrition and physical activity programs. This will allow stakeholders to understand the relation between the activities and the resources. It will be used to identify the activities and the outcomes that will be evaluated to keep the program flowing (Hallinan, 2010).

Adolescents' with asthma participation in physical activity is benefiting because it improves severity of asthma attack and quality of life (CDC, 2013). It is important for adolescents to participate in daily physical exercise to improve lung function, decrease anxiety, and stress level (CDC, 2013). The design of the program for small-group instruction will be more effective than delivering instruction in a large group setting. Students are more likely to participate and be more attentive (Ward-Begnoche et al., 2008).

One limitation to the project is adolescent's attendance. Poor attendance to the after school health education program can have a negative impact on the program outcome (Ketter, Moroney, & Martin, 2008). The success of the program depends on adolescents' attendance. Another limitation to the project can be the time of day that the program will be implemented. It will be after-school and adolescents may not be interested in the program. The third issue that may affect the program is the availability of the school gym for physical activity after school. The gym is needed for physical activity after the nutrition education session; however, the school the school gym is also used for other after-school sports.

Future recommendations for evidence-based projects may include the involvement of family and school food service in the development of the project. The developing, implementing, and adapting of school-based health education program is crucial to decreasing obesity amongst adolescents; however, for the effort to be successful a multidisciplinary approach is recommended (CDC, 2013, Lang, 2011).

Designing the project to involve parents will garner more adolescent's participation. Another recommendation is to incorporate peer education and counseling. This form of education is considered strong and effective during the adolescence period because the adolescents doing the education would have successfully mastered and maintain skills to healthful eating habits (Ward-Begnoche et al., 2008). According to Stang and Story (2005), adolescents are more apt to take suggestions from their peers as than other professionals as they believe that the suggestions are more related to their

lifestyle, terms use are language they can relate to and the personal examples that peers share can serve as social support to these adolescents.

### **Analysis of Self**

As a scholar, I have gained a wealth of knowledge in leadership and translation of evidence into practice pursuing my DNP degree. I developed the skills that are needed to be a transformational leader. Leadership is an essential component of the DNP education and gaining the knowledge and skills to improve health outcomes, by working with organization and systems to develop policies, and procedures to meet the needs of patient population is one of my invaluable practicum experiences. I have gained competencies in the application of knowledge in the translation of evidence into practice and in working collaboratively with diverse population and organization cultures.

Developing and designing the DNP project was a challenging journey. The implementation of health activities to improve health is essential to the DNP program and therefore, designing, implementing and evaluating a project that will improve population health through changing lifestyle behavior is an important requirement of the DNP student. To successfully accomplish this, I engaged in effective communication, conduct peer reviews, and other scholarly work to create change. The American Association of Colleges of Nursing Essentials (2006) noted that a DNP scholar integrates, translate, and disseminate knowledge to improve patient's outcome.

### **Summary**

Adolescent obesity is national health issue that is not only costly to the healthcare system but also has significant effect on quality of life. The development school policies



and documents to implement health education program that focus on nutrition education, increase physical activity, and skills to maintain behavior changes can decrease adolescent's obesity. The implementation of the DNP project can affect social change in assisting adolescents in adopting coping skills to assist in maintaining health behavior changes which will lead to a healthier lifestyle by decreasing of the risk of developing chronic diseases that are associated with obesity. More research is needed to find out the effect of structured school-based health education program that promote healthy eating habits, increase physical activity amongst adolescents with asthma.

## Section 5: Scholarly Product

The purpose of this project is to develop school-based obesity prevention policies and documentation for adolescents which will focus on nutrition, increase physical activities, and provide skills to maintain behavioral changes. The goal of this program is to decrease the incidence of obesity among adolescents and reduce the economic and noneconomic cost associated with obesity. The outcome of this project will be to develop documentation and policies which will be essential for school educators, nurses in the school district to use to develop health education programs, and increase physical activity within the school environment.

### **Background and Nature of Project**

Obesity amongst adolescents has a significant impact on asthma severity. The CDC (2012) noted that asthma treatment is costly to the health care system. According to the CDC, there was a significant increase in emergency room visits in 2009 for treatment of uncontrolled asthma symptoms. The New York Department of Health and Mental Hygiene (2010) confirmed that the incidence of asthma exacerbation is higher among low-income families. Approximately 25% of children in poor neighborhoods in NYC have been reported by the children's health fund to be diagnosed with asthma and a total absenteeism of 10.5 million days from school in 2008 due to asthma attack.

The goal from Healthy People 2020 is geared towards mitigating the effect of asthma which will eventually decrease asthma exacerbation (HealthyPeople.gov, 2010). Asthma is considered as one of the public health issues in New York State. The CDC (2013) reported a relation between the severity of asthma and obesity.

Obesity is a public health issue that is costing the healthcare a significant amount of money. The NYSDOH (2013) reported that 17.6 % of students attending public schools are obese. The objective is to decrease obesity among children and adolescents in public school number to 16.7% by year 2017. The DOH (2013) acknowledged that it is a challenging situation which will take multiple approaches to decrease the prevalence of obesity in the state.

The impact of obesity on adolescent's health includes chronic health diseases and psychological issues (CDC, 2012). The adolescence period is important for introducing health behavioral changes because most habits developed will proceed into adulthood (Smith & Donze, 2010). The complexity of obesity makes it challenging for researchers to identify one solution to this issue, however, developing healthy eating habits and increasing physical activity has shown to decrease obesity (Schwarz & Peterson 2010).

Healthcare providers have the responsibility to effect change through the development, implementation and evaluation of policies and documents that focus on assisting adolescents to eat healthy foods, increase physical activity, and develop skills to maintain healthy behavior changes (Kotter, 2007). Health education programs that focus on eating healthy foods, increased physical activity and skills to maintain behavior changes are needed to decrease obesity amongst adolescents, reduce asthma severity and other chronic disease disorders. NYSDOH (2013) reported that one third of NYS children are obese.

Obesity is related to several health problems such as asthma (CDC, 2011). This poses serious issues on quality of life which include health and other psychosocial

problems. The CDC (2012) described asthma as a common disease that is expensive to the healthcare system with 315, 00 children suffer from asthma attack in NYS in 2010. In 2012-2013 fiscal year asthma cost in NYS rises to \$1.3 billion (New York State Comptroller Office, 2014). In an effort to decrease the prevalence of asthma the DOH and CDC launched an initiative with Medicaid to authorize in home-based asthma assessment and education for children who are at risk.

CDC (2012) cited that obesity is significantly associated with worsening asthma symptoms, increase medication use and hospitalization. Several studies have concluded that obesity increase the severity of and decrease quality of life (Ashcraft, 2012; Liu, Kieckhefer, & Gau 2013; Ross & Hart, 2013). The CDC (2013) revealed that the U.S has shown dissatisfactory improvement in combating obesity among this target group.

The New York City Department of Health and Mental Hygiene (2012) findings revealed that one in three adolescents do not exercise for 20 minutes per day for three times per week. Approximately eight out of 10 adolescents eat less than five servings of food daily. Healthcare professions, state and local government, schools, and communities have a responsibility to provide interventions to combat obesity among adolescents.

According to CDC, (2012) policies and documents play a key role in assisting in developing sustainable interventions to support health food choices and increase physical activity among obese adolescents. The development of school-based program to provide nutrition education, promote physical activity and provide skills to maintain life-long behavior changes are important to decrease obesity among adolescents (Mochari-Greenberger et al., 2010).

Increase obesity among adolescents increase health care cost, put adolescents at risk for weight related health problems in adulthood, and can contribute to poor self-esteem (Boom & Clydesdale, 2005). The implementation of structured health education program that focus on healthy nutrition habits, increase physical activity, and maintenance of health behavioral skills can reduce the prevalence of obesity among the adolescents population (Malcarney et al., 2013). There are few researches that focus on school-based health education programs to decrease obesity amongst adolescents (Ashcraft, 2012). There is a need for more research to provide new evidence on the effect of school-based health education programs that focus on decreasing obesity through healthy eating habits, increase physical activity, and development of skills to maintain health behavior changes are important to decrease obesity among adolescents (Mochari-Greenberger et al, 2010).

### **Evaluation**

The development of the school-based health education project that will be implemented by school nurses in District 17 was presented to my preceptor, a family nurse practitioner (FNP), and the team that will be implementing and evaluating the project. The FNP was interested in the outcome of the project and to see a curriculum developed with policies and documents for health education to be taught in schools. She suggested that this project can also be adopted in community centers. The preceptor suggested that adolescents be given incentive for attendance and participation in the program. The team of nurses in charge of implementing the project reports that they are working on getting permission from the school to conduct the program and is not sure when they will implement the project, but will work closely with the stakeholders to

notified them of when the program will be implemented to receive the secured funding for the project.

### **Conclusion**

The development of policies and documents for the implementation of school-based health education program is important to combat obesity amongst adolescents. The development of structured health education program to be implemented by school nurses at an after-school program will decrease obesity and improve adolescent's quality of life. This program will provide useful information for the implementation of similar programs aimed at decreasing obesity amongst adolescents. Policies and documents can be developed for the design and implementation of school-based health education program to decrease adolescents' obesity.

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## Appendix A: Stages of Change

Stage	Readiness	Goal	Approach
Pre-contemplation	Adolescents have not thought about change and is not aware that they are obese	increase adolescents awareness about the need for change	Discuss the consequences of lack of activity poor eating
Contemplation	Considering to Take action in Next 6 months	Increase confidence to change behavior	identify barriers to change Discuss small steps to obtain changes
Preparation	Considering to act Within the next 30 Days and have made Some Behavioral changes	implement changes	develop action plan encourage family support
Action	behavior change for Less than 6 months	support to change	Give feedback support and coping strategies
Maintenance	has changed behavior For more than 6 Months	Reinforce behavior changes	Help in coping follow-up to support changes

Adopted from: Stang & Story. (2007). Nutrition Education and Counseling.



## Appendix B: Content

<u>Topics</u>	<u>Concepts</u>	<u>Handouts</u>
1. Healthy Living	- Introduction	-Physical activity information
2. Coping Skills	- Problem solving - Ways to change behavior	- Behavior worksheet
3. Physical Activity	-benefits of activity -How to increase Activity daily	hula hoops, jump ropes basket balls walking 30 minutes
4. Food Guide and Serving	-portion sizes - health choices in food groups -building a balance Diet	-Food Guide Pyramid
5. Coping Skills	-Barriers to healthy lifestyle - How to make changes	
6. Reading Food Labels	-Relate food labels to food pyramid -Understand food labels	Food label Guide
7. School lunch	-identify foods serve at School -discuss selection from vending machine	Food diary
8. Physical Activity	-the benefits of physical activity - different ways to increase physical activity -different activities consequences of sedentary lifestyle	Pyramid of Physical Activity

9 and 10. Food Servings and Guide	-the healthy choices in each food group -different ways to build balance diet -portion size	Record food choices using Food Pyramid
11. Adopting Coping Skills	-identifying barriers to healthy lifestyle -developing coping skills to overcome barriers	Communication skills
12. Training- Coping Skills	-how to use positive thinking to replace negative thoughts through problem solving	Worksheet with problem solving techniques
13. School Lunch	-identify foods in vending machine -identify the servings in school lunch	Food Pyramid
14. Recap	Review	List of barriers List of coping strategies

Sources:

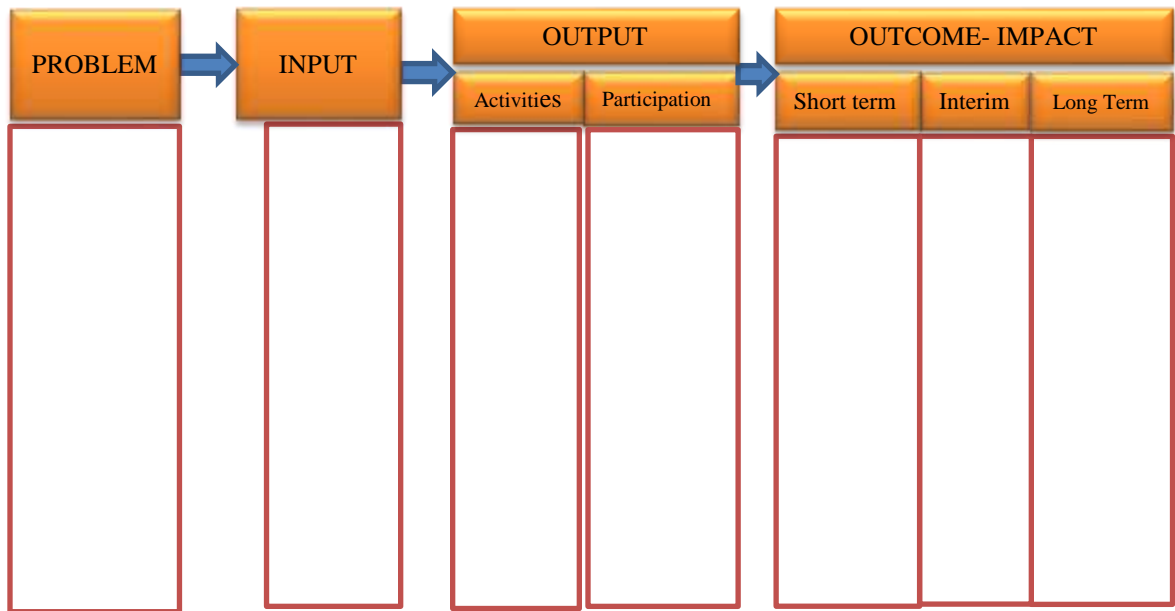
Nutrition and Physical Activity Guides for Adolescents

<http://www.cdph.ca.gov/HealthInfo/healthyliving/nutrition/Pages/TeenGuidelines.aspx>

Choose My Plate

<http://www.choosemyplate.gov/>

## Appendix C: Logic Model



#### Appendix D: Plan for Evaluation

Nurses will measure height, weight and the BMI will be used to determine if goals are met. The formative evaluation will allow assessment of the program that will be conducted by the stakeholders during the program implementation. The following questions will be asked:

1. Did the program implemented according to the design
2. How does the program needs to be adjusted or revise
3. Feedback from instructor
4. What are the benefits and challenges to the program implementation

Questions to ask adolescents

5. What are some of the steps you will be taking to maintain the change that you have made in your eating habits?
6. How do you plan to continue daily physical activity?