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College Health Clinic Population Health Improvement Plan Project

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This is to certify that the doctoral study by

Kathryn Flynn

has been found to be complete and satisfactory in all respects,
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Abstract

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MSN, Western Governors University, 2014

BSN, Thomas Jefferson University, 1985

Project Submitted in Partial Fulfillment

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Abstract

A college community health improvement plan (CHIP) focusing on the indicators of nutrition and weight status, and physical activity and fitness is designed with the goal of reducing obesity risk, improving health, and preventing chronic disease. The precede-proceed model, logic model, innovative care for chronic conditions model, self-care theory, and Bandura's social cognitive learning theory were used as a research design framework for assessing, planning, and managing sustainability through a two-year college health clinic. The research questions were: what are the current health promotion inputs and activities in terms of environment, ecology, education, and policy and what could be supplemented to improve outputs and health outcomes? An integrated review of the literature, observation of the site, regulatory investigation, and focus group sessions were the methods of data collection. The precede-proceed model provided the analytical strategies to assess initiatives and resources, and to determine supplementary initiatives and resources. Results showed that environmental, educational, administrative, and policy resources were available but limited and not well promoted. Conclusions were that health promotion, wellness staffing, and education exist, but are underutilized, under promoted, and funding is necessary. Recommendations include a wellness program, increased activity initiatives, case management, grant funding, and increased community partnerships. The contribution to nursing is to fill a gap-in-practice for health planning in 2-year colleges. The implications for positive social change are improved knowledge, sustained health behaviors, decreased amount of obesity, improved health outcomes and quality of life, decreased chronic diseases, and lower healthcare costs.

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Section 1: Nature of the Project

Community health improvement plans have been designed, constructed, implemented and evaluated by health providers to improve health outcomes of a specific geographical population. Providers at college health clinics focus on the students and their health care needs. The student population at a post-secondary institute of education have determinants of health as determined by Healthy Campus 2020 (2016) such as immunizations for enrollment, exercise and fitness, weight and nutrition, substance use and abuse including smoking, mental health, and accident and injuries.

Illness prevention and health promotion programs can be designed, planned, and implemented to improve health outcomes for the students to be successful and healthy. Important determinants of health that are essential to the college health population are nutrition and weight status, and physical activity and fitness (Healthy Campus 2020, 2016). Fardet and Boirie's (2013) meta-analysis of the literature reflected that most chronic diseases and subsequent health care costs correlate with obesity and inactivity. Additionally, Bandura (2004) asserted that early adoption and reinforcement of healthy skillsets in children and young adults increases the likelihood of sustainable healthy behaviors over a lifetime. After a comprehensive review of the current literature, I chose weight, nutrition, physical activity, and fitness, as the foci of this project for young adults in a college health population setting as a focus for establishing heathy behaviors for life-long wellbeing.

A college health improvement plan (CHIP) is designed by me with a goal of improving the health of students with focus on the indicators of nutrition and weight

status, and physical activity and fitness. The Centers for Disease Control (The Centers for Disease Control [CDC], 2013) has identified the precede-proceed model and logic model as appropriate for health planning as well as model theoretical frameworks for program planning. The innovative care for chronic conditions (ICCC) model and Bandura's social-cognitive model and self-care theory are relevant theories to explicate the education and behavior change activities of the students, as well as sustainability of the behavior change (Bandura, 2001; Epping-Jordan et al., 2004; Riegel, Jaarsma, & Stromberg, 2012). The behavior change at a young age will increase the likelihood of retaining the behaviors as adults and lead to sustainability (Bandura, 2004; Epping-Jordan et al., 2004). The educational portion and self-care model are both important to improve outcomes (Bandura, 2001; Epping-Jordan et al., 2004). The educational portion is not enough; the students must have behavior change and self-maintenance as well (Bandura, 2001).

New practice strategies such as specific health improvement programs based on measured need can improve health care quality by targeting care to actual needs, not just assumed needs of the community (Kattelmann et al., 2014). Additionally, the ICCC model is essential for health providers to restructure care delivery of the college health clinic so that healthy behaviors are managed to ensure sustainability of optimum outcomes that are proven practices identified in the literature (Epping-Jordan et al., 2004). Key features of the ICCC model are health systems and community resources optimization through utilizing clinical information systems for managing and tracking, collaborative decision support, delivery system design that insures individual case management, and enhanced self-management support (Epping-Jordan et al., 2004). The

structural practices outlined in the ICCC model are proven clinical outcomes not only for chronic illness management, but for primary health care and prevention initiatives as well (Epping-Jordan et al., 2004).

A strategy based on the precede-proceed model with the logic model constructs is the framework and model used by me to create health initiatives for a college health services community (CDC, 2010; Green and Kreuter, 2005). A policy, systems, and environmental change strategy and the constructs of inputs, activities, outputs, and outcomes are the components of the logic model framework used by me to create health initiatives (CDC, 2010). The self-care model and Bandura's social cognitive theory have been used as underpinning frameworks to guide the health promotion education and activities in the plan (Bandura, 2001; Riegel, Jaarsma, & Stromberg, 2012).

Bandura's social cognitive learning theory states that persons are agents with a capacity for decision making to control their own destiny, and learning has a social aspect as well that is impacted by observing others in the community (Bandura, 2001). Bandura (2004) posited that learning behaviors in childhood and young adulthood increases the likelihood that behaviors will continue into adulthood.

The project design includes the needs assessment and objectives from Healthy Campus 2020 (2015a) and target goals for the population. I used SMART objectives, specifically objectives that are specific, measurable, achievable, realistic, and time phased. The design allows for stakeholders and community partners involvement in program planning and implementation. Leadership is necessary and was used by me to

plan health initiatives and accomplish improvement plan approval. Leadership is also required to highlight research and attain funding for projects.

Problem Statement

The college health clinic at the two-year college project site provides wellness initiatives, but should base initiatives on a synthesis of existing evidence to discern which wellness initiatives are necessary to promote improved health outcomes, and how resources should be allocated based on priority needs of the community members. Healthy People 2020 compiled data and found that problems and leading health indicators related to college health services are access to health services, immunizations, injury and violence, mental health, nutrition, physical activity and obesity, reproductive and sexual health, and substance and tobacco use (US Department of Health and Human Services [USDHHS], 2014c). Healthy Campus 2020 (2015a) is an extension of Healthy People 2020, and is focused on the college student population based on American College Health Association (2015) research that reveals similar college health indicators (American College Health Association, 2015).

The Healthy Campus 2020 (2016) indicators that are the focus of the current project CHIP are nutrition and weight status, and physical activity and fitness. I chose the indicators as a focus of the project because poor nutrition, obesity, and inactivity are risk factors for diabetes and are associated with other chronic diseases such as cardiovascular disease, cancers, and many others (Fardet and Boirie, 2013; World Health Organization [WHO], 2010). In addition, chronic disease accounts for 50% of all health care dollars spent (WHO, 2010). Therefore, if nutrition and weight status, and physical activity and

fitness behavior is modified, the risk for chronic disease may potentially decrease, as well as chronic disease spending.

The college does not have a wellness and health promotion initiative currently, and has not had one in the past, even though a Health Services Department exists. I was the project coordinator and designed and planned the CHIP. The plan will be implemented at a future date, as finances allow, by Health Services staff of the full-time college nurse and health assistant. The determinants of immunizations, substance abuse, suicide, and others are under the purview of different student services and counseling departments within the college, and for this reason were included in the health services CHIP. However, students with these needs are referred to other departments by the college health clinic providers, who remain responsible for the comprehensive health needs of each student.

Preventative health initiatives are valuable because promoting health, preventing illness, and decreasing healthcare costs related to disease gets more complex as diseases get worse (USDHHS, 2011). McTighue, Garrett, and Popkin (2002) followed a cohort of young adults and found that being overweight between the ages of 20-22 years correlated with increased risk of obesity between the ages of 35-37 years. Fardet and Boirie (2005) have found that obesity is associated with 10 chronic diseases and contributes to 50% of all health care costs.

In the 2010 college population, 11.6% of students were obese, 38.4% were at an unhealthy weight (over 24.9 BMI), and only 6% ate five or more servings of the recommended fruits and vegetables per day (Healthy Campus 2020, 2015). There is

currently no data on the college population at the project site. The goals of Healthy Campus 2020 (2015) were to increase the percentage of students who are at a healthy weight and the percentage of students who eat five or more servings of fruits and vegetables per day by 10%. Regarding the indicator of physical activity and fitness, 51.3% of students do not engage in the recommended 30 minutes of aerobic physical activity on 5 or more days a week (Healthy Campus 2020, 2015b). Moreover, 62.4% of students do not meet the guidelines for muscle-strengthening exercises on two or more days per week (Healthy Campus 2020, 2015b). The national goal is a 10% improvement (Healthy Campus 2020, 2015b).

Purpose Statement

College health clinics support student health promotion and wellness as well as health education and safety. The practice issue is to create a college specific CHIP for an institute of higher education (IHE) population based on Healthy Campus 2020 (2016) indicators of nutrition, weight status, physical activity, and fitness. I used an ecological, environmental, and policy needs assessment as a supplement to the Healthy Campus 2020 (2015b) data previously collected for the college age-group. The proposed project is a college health services population health improvement plan based on evidence from national sources that are public and free of charge, such as American College Health Association (ACHA), Healthy People 2020, and Healthy Campus 2020 (ACHA, 2015; Healthy People 2020, 2011; Healthy Campus 2020, 2015b; National College Health Assessment, 2009).

The college requested a CHIP because there was currently no established wellness program at the college. The college requested a wellness program, and asked me to design and plan the health promotion project. The Health Services facility is the project site of the CHIP. The full-time college nurse and health assistant will be the coordinators and case managers of the future implementation of the project. Community partners have encouraged a college wellness initiative such as the one in this proposal. The college has students all year but lacks fitness equipment and staffing for the fitness center; therefore, the utilization rate is low and students and employees have requested more opportunities for wellness. The plan expands fitness opportunities and educational opportunities for nutrition, healthy weight, and activity.

In the project, I applied new knowledge and expertise from the literature in the college community health specialty area using the precede-proceed and logic models to improve health outcomes of individuals and the community. The logic model, used by the CDC and others for health promotion projects, was used by me and the constructs of inputs, activities, outputs, and outcomes of the initiatives were included in the improvement plan (CDC, 2010). The plan includes environmental and ecological assessment and change, administrative and policy assessment and change, and health education assessment and change. The initiatives include nutrition education, healthy weight information, increased access to the fitness center, walking initiatives, and health provider case management. Health provider evidence-based practices and decision making are the outputs of the CHIP, in pursuit of improved health outcomes.

The ICCC model with self-care model underpinnings were used, in addition to Bandura's social cognitive learning theory as a framework for conceptualizing, planning, implementation, and managing sustainability thorough the college health clinic which is accountable for the CHIP initiative as well as responsible for the comprehensive health needs of each student (Bandura, 2001; Epping-Jordan et al., 2004; Improving Chronic Illness Care, 2016; Riegel, Jaarsma, & Stromberg, 2012). The literature review and the subsequent improvement plans established by me will lead to practice trends and system changes to improve health care quality at the individual and organizational level, and support the national public health messages found in Healthy People 2020 (2011).

Project Objectives

I designed and recommended a CHIP focusing on health status indicators of nutrition and weight status, and physical activity and fitness and will be used at a future date to establish evidence based practice decisions to improve health outcomes. I chose the indicators and objectives were chosen because of the evidence from prior research and meta-analysis of research that concludes obesity is associated with up to 10 chronic diseases, which lead to early death (Fardet and Boirie, 2013). I included micro-level, meso-level, and macro-level initiatives for individualized education and learning, community support, and policy initiatives.

The objectives of the project were to plan realistic and achievable interventions to promote healthy weight and nutrition as well as physical activity and fitness per the indicators and objectives included in Healthy Campus 2020 (2015b). The provider will initiate the health promotion policies, activities, education and case-management at the

college health clinic level. The health improvement activities, education, and case management will be a collaborative discussion between the provider and student patient who come to the health clinic. In person or telephonic follow-up and self-care are encouraged for all students who visit the health office, especially those students whose (BMI) is outside of the healthy weight range of 18.5-24.9 (Healthy Campus 2020, 2015b).

The objective of a healthy weight and reducing obesity is measured by BMI of 18.5-24.9 for normal weight with a goal of reduction of obesity by the year 2020, compared to the 2010 baseline data (Healthy Campus 2020, 2015b). In addition, increasing the number of students who eat five or more servings of fruits and vegetables a day is another objective of healthy weight and reducing obesity (Healthy Campus 2020, 2015b).

The indicator of physical activity and fitness is measured by comparing the proportion of students who report meeting federal guidelines for aerobic physical activity of moderate intensity for 30 minutes on 5 or more days a week or vigorous intensity for at least 20 minutes on 3 or more days a week (Healthy Campus 2020, 2015b). In addition, a second indicator of physical activity and fitness is measured by percentage of students who report meeting federal guidelines of muscle-strengthening exercises 2 times a week (Healthy Campus 2020, 2015b).

In the project, I established a plan with education and interventions for students to accomplish the indicator objectives. I included collaboration between administrators within the college and planning strategies to plan and initiate environmental health

changes and health resource allocation necessary to reach goals. I proposed changes were proposed and additions to the wellness resources, identify funding necessary, guide the community development process, and propose a timeline to implement the changes. I will also encompass objectives that are included in the essentials of doctoral education for advanced nursing practice and include underpinnings for practice. The objectives include organizational and systems leadership for quality improvement and systems thinking, scholarship and analytical methods for evidence-based practice (EBP), inter-professional collaboration, prevention for population health, and advanced nursing practice (American Association of Colleges [AACN], 2006).

Guiding Practice

Outcomes of college community health planning, resource allocation, and health outcomes may be different than expected or less than optimal if a community health plan and available interventions to accomplish objectives are not used for prioritizing goals (Healthy People 2020, 2016). I used the National College Health Assessment (2009) and Healthy Campus 2020 (2015b) indicators of nutrition and weight status together with physical activity and fitness indicators, as informed by the literature review to prioritize the goals and the objectives of a college health clinic population improvement plan. Administrative and policy, ecological and environmental, and educational framework will be constructs of the CHIP.

I designed an improvement plan per prioritized indicators affecting the college health clinic community. The evidence synthesized by the meta-analysis of Fardet and Boirie (2013) shows that many chronic diseases that lead to early death have associations

with obesity. The findings of the Fardet and Boiret (2013) research indicate the need to prioritize, plan, and implement activities and education on the topic of obesity in the college level population to prevent chronic disease. The precede-proceed model with logic model constructs of inputs, activities, outputs, and outcomes are the framework I used for planning the health promotion initiatives (CDC, 2010; Green & Mercer, 2002). Bandura's social-cognitive theory and the self-care theory were the models I used for the educational and behavior change piece of the plan (Bandura, 2001; Improving Chronic Illness Care, 2016; Riegel, Jaarsma, & Stromberg, 2012).

Health initiatives at IHE's should include members supporting the measure and working towards priority health needs with strategies and action steps with measurable outcomes (Healthy Campus, 2015). The precede-proceed model and the logic model were the framework and model used by me to create and plan health initiatives for a college health services community. Community resources, social support at the IHE, and individual learning based on Bandura's social-cognitive learning theory of persons as agents in their own decision making, and self-care theory will be the framework used by me to promote chronic care prevention and improved health outcomes. The college health services care delivery will be redesigned per the plan I made. In the restructuring, I include the case management with decision support and goal attainment necessary for optimal outcomes. Self-management will be encouraged through educational initiatives and community resources, and clinical information systems were incorporated. Self-management of improved health behaviors in young adults may lead to healthy behaviors in adulthood (Bandura, 2004).

Definition of Terms

The following definitions are concepts and theories used in the community health improvement plan (CHIP).

Bandura's Social Learning Theory: Learning takes place in a social context by the person known as the agent, by observation and imitating others like themselves (Bandura, 2001).

Chronic Care Model (CCM): Evidence-based change concepts in the essential parts of the health care system such as community, the health system, self-management support, and decision support foster productive interactions between informed patients who take an active part in their care (Improving Chronic Illness Care, 2016).

Environmental Change (Environment):

Physical, social, or economic factors designed to influence people's practices and behaviors. Examples of alterations or changes to the environment include:

Physical: Structural changes or the presence of programs or services, including the presence of healthy food choices in restaurants or cafeterias, improvements in the built environment to promote walking (e.g., walking paths), the availability of smoking cessation services to patients or workers, and the presence of comprehensive school health education curricula in schools CDC, 2010).

Health disparities: Differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific population groups in the United States (CDC, 2010).

Innovative care for chronic conditions (ICCC) model: The ICCC model is based on the chronic care model dyad, however the model adds community and policy to form a triad of care. The World Health adopted the additions to the CCM to endorse the ICCC model, and the model is being used throughout the world (Epping-Jordan et al., 2004).

Indicators: A characteristic of an individual, population, or environment which is subject to measurement and can be used to describe one or more aspects of the health of an individual or population (Definition of Wellness, 2013).

Logic model- A tool for planning, describing, managing, communicating, and evaluating a program or intervention (CDC, 2013). Constructs used in the model are inputs, activities, outputs, and outcomes.

Obesity: Persons with a body mass index (BMI) equal to or greater than 30.0 kg/m2 (World Health Organization [WHO], 2006).

Policy: The choices a society, an organization, or a group makes regarding its goals and priorities and how it will allocate its resources to those priorities (White & Dudley-Brown, 2012).

Policy change: laws, regulations, rules, protocols, and procedures, designed to guide or influence behavior. Policies can be either legislative or organizational in nature. Policies often mandate environmental changes and increase the likelihood that they will become institutionalized or sustainable. Examples of legislative policies include taxes on tobacco products, provision of county or city public land for green spaces or farmers' markets, regulations governing the National School Lunch Program, and clean indoor air laws. Examples of organizational policies include schools requiring healthy food options

for all students, a district ban on the sale of less than healthy foods throughout the school day, menu labeling in restaurants, required quality assurance protocols or practices (e.g., clinical care processes), or a human resources policy that requires healthy foods to be served at meetings (CDC, 2010).

Precede-proceed model: A model of health program planning and evaluation which looks at desired outcomes and develops changes in behavior, environmental, and social change to reach desired outcomes (Green & Kreuter, 2005).

Self-care: A process of maintaining health through health promoting practices and managing illness. Key concepts include self-care maintenance, self-care monitoring, and self-care management (Riegel et al., 2012).

Strategies: Means by which policy, programs, and practices are put into effect as population-based approaches (CDC, 2010).

Systems change: Change that impacts all elements, including social norms of an organization, institution, or system; may include a policy or environmental change strategy (CDC, 2010).

Assumptions, Limitations, and Delimitations

Assumptions of the project are that the research done that provides the data for the project are reliable and valid. The needs assessment done by ACHA (2009) and Healthy Campus 2020 (2015) provided the knowledge and information necessary to determine and address the essential health indicators required for planning in the population at a college health clinic, since primary data will not be obtained from the population. A limitation is the CHIP will include only a plan and implementation

strategy, and not an actual implementation, primarily because of funding constraints of funding acquisition and implementation. Delimitations are that I chose to use the evidence gained from ACHA (2009) surveys and Healthy People 2020 (2015a) in lieu of a full and unique needs assessment for the college population in the project site. Although I conducted a site-specific additional needs assessment based on the evaluation of ecological, environmental and policy which existed in the project setting, I used the ACHA (2009) data to assist in establishing priority health problems and interventions for the community. It is expected the project will be implemented, but may take several years in the strategic plan including future budget allocation, and monitoring will not take place in the subsequent years by the DNP student.

College Health Clinic Population Health Indicators

In general literature, college community health indicators are evidence-based components of health, which are identified through survey research, meta-analysis, and literature review such as Healthy People 2020 (2015), Healthy Campus 2020 (2015b), and National College Health Assessment [NCHA] (2009). I will explain how the indicators were decided upon and where they were found in the literature I reviewed.

Sources of Indicators

Healthy People 2020. The researchers of the Healthy People 2020 (2015) data source used 42 indicators and 600 objectives and focused on social determinants of health as well as economic and environmental factors. Indicators that are the focus of college health are included in Healthy Campus 2020 (2015a). In Healthy People 2020 (2011), a goal of nutrition and weight status is evident in the objectives of increasing primary

providers' measurement of BMI, increasing the number of adults who are healthy weight, and reducing the number of obese adults. In addition, an objective is included in Healthy People 2020 (2011) of increasing the number of sites that offer nutrition or weight management classes or interventions. Moreover, Healthy People 2020 (2011) stated that interventions such as available healthy food, access to physical activity options, and increase in knowledge about weight loss can be offered in many settings such as health care locations, schools and colleges, and workplaces.

The leading health indicators listed in Healthy People 2020 are diverse and have significance to the college health population. As of 2014, the indicators with little or no detectable change in Healthy People 2020 are: access to health care, persons with diagnosed diabetes whose glycated hemoglobin (A1c) is over nine percent, obesity among adults, mean daily intake of total vegetables, binge drinking in last 30 days, and cigarette smoking in last 30 days (USDHHS, 2014c). The indicators of suicide, major depressive episodes, and dental visits were getting worse (USDHHS, 2014c).

Since the indicators of obesity among adults and mean daily intake of total vegetables have had little or no detectable change, and obesity and poor nutrition are risk factors for diabetes and other chronic disease, the health status indicators of nutrition and weight status, and physical activity and fitness will be focused on in the initiative (USDHHS, 2014c). An additional reason why I chose the indicators for the project is because obesity has been found to correlate with 10 chronic diseases (Fardet and Boirie, 2013). The indicators of binge drinking, cigarette smoking, suicide, and major depressive episodes are focused on in the counseling department of the IHE, and are therefore not

realistic to address in the college health clinic CHIP. However, all are included in the strategic plan for the college. The college health provider will refer students needing assistance with these indicators to the counseling department.

Healthy Campus 2020. Healthy Campus 2020 (2015a) is a group of goals and objectives for health promotion and disease prevention at college campuses that is modeled after Healthy People 2020 and uses data to set health priorities for the United States. I used the evidence gained from NCHA (2009) surveys and Healthy People 2020 (2015a) in lieu of a full and unique needs assessment for the college population in the project site. I conducted a site-specific additional needs assessment based on the evaluation of ecological, environmental and policy which exists in the project setting, and I used the NCHA (2009) data to assist in establishing priority health problems and interventions for the community. The national college health indicators in Healthy Campus 2020 were derived from the research done by Healthy People 2020 and the National College Health Association (National College Health Association [NCHA], 2009).

National College Health Assessment (NCHA). The NCHA analyzes data from college population surveys with indicator information about alcohol, tobacco, and other drug use, sexual health, weight, nutrition and exercise, mental health, and personal safety and violence (NCHA, 2009). Moreover, priority health-risk behaviors in the undergraduate college population are injuries, violence, suicide, tobacco use and addiction, alcohol, drug use, unintended pregnancy, HIV/AIDS, and STD infection, dietary patterns, and inadequate physical activity (NCHA, 2009). The health indicators or

determinants that I focus on in the college health clinic community health plan are the CDC Health Indicators Warehouse national college health indicators from the NCHA surveys and Healthy Campus2020 indicators (Health Indicators Warehouse, 2016; Healthy Campus 2020, 2015b).

Priority Indicators

Indicators of health that I focus on in the project are nutrition and weight status, and physical activity and fitness. The reason I chose the indicators for the CHIP are because poor nutrition, overweight and obesity, and inactivity are risk factors for diabetes, cancers, depression, and other chronic diseases that are responsible for a large percentage of the nation's health care costs (Fardet & Boirie, 2013; US Department of Health and Human Services, 2014c; World Health Organization [WHO], 2010). The indicators should be included all together in the project and are found to be associated in improving health outcomes (Fardet & Boirie, 2013; Johns, Hartmann-Boyce, Jebb and Aveyard, 2014).

Nutrition and weight status. The goals in the nutrition and weight status category are to increase the proportion of students who are at a healthy weight, reduce the proportion of students who are obese, and increase the proportion of students who report eating five or more servings of fruit and vegetables per day (Healthy Campus 2020b, Student Objectives, 2015). I will use the indicator of nutrition and weight status based on the findings in a meta-analysis by Fardet and Boirie (2013).

Fardet and Boirie (2013) after an exhaustive review, report that an imbalanced and energy-dense unhealthy diet may trigger cardiovascular disease, diseases of the

digestive tract, and metabolic diseases, and may be the leading cause of death in Western countries. The authors summarize the correlation and associations between chronic diseases and obesity in an exhaustive review of primary research concluding associations (Fardet and Boirie, 2013). The meta-analysis shows associations of chronic diseases amongst each other, and all are associated with obesity (Fardet and Boirie, 2013). The chronic diseases with associations to each other and obesity including how many studies conclude the association, in parentheses, is cancers (98), cardiovascular disease [CVD] (80), diabetes (72), mental illness (62), digestive disease (41), chronic kidney disease [CKD] (24), chronic liver disease [CLD] (23), skeletal diseases (18), and sarcopenia (1), (Fardet and Boirie, 2013). The conclusion is prevention of obesity in children and adults reduces the likelihood that the other eight conditions will occur (Fardet and Boirie, 2013). The conclusion that decreasing the likelihood of obesity will decrease the likelihood of many chronic diseases (Fardet and Boirie, 2013) is the evidence supporting why I should focus on prevention of obesity as a priority in the college health clinic community improvement plan.

The Healthy Campus 2020 (2015b) topic area of nutrition and weight status were used and the included objectives within the topic area as a basis for the CHIP based on the evidence. The objectives formulated by Healthy People 2020 (2015b) and ACHA (2016) data, and based on conclusions by Fardet and Boirie (2013) in the CHIP were focused on. The Healthy Campus 2020 (2015b) objectives under the topic area of nutrition and weight status are to increase the proportion of students who are at a healthy

weight, reduce the proportion of students who are obese, and increase the proportion of students who report eating five or more servings of fruit and vegetables per day.

The healthy weight definition is body mass index (BMI) of 18.5-24.9, and the goal is 67.8% of the college student population within this parameter by 2020 (Healthy Campus 2020, 2015b). The objective of reducing the proportion of students who are obese (BMI less than 30), with a goal of 10.4% from a baseline of 11.6% established in Healthy People 2010 is also in the topic area of nutrition and weight status (Healthy Campus 2020, 2015b). The third objective in the category of nutrition and weight status is to increase the proportion of students who report eating five or more servings of fruits and vegetables per day, with a goal of 6.6% by 2020, from a baseline of 6.0% in 2010 (Healthy Campus 2020, 2015b).

Physical activity and fitness. The Healthy Campus 2020 (2015b) indicator area of nutrition and weight status and the indicator are of physical activity and fitness were both be the foci of the project. The objective from Healthy Campus 2020 (2015b) is to increase the proportion of students who report meeting current federal guidelines for aerobic physical activity which is defined as aerobic physical activity of at least moderate intensity for at least 30 minutes on five or more days per week or vigorous intensity for at least 20 minutes on three or more days a week. The goal is to increase the number of students accomplishing the initiative to 53.6% by 2020 from 48.7 in 2010 (Healthy Campus 2020, 2015b).

A second indicator of physical activity and fitness is to increase the proportion of students who report meeting current federal guidelines for muscle-strengthening activity from a baseline of 37.6% in 2010 to 41.4% by 2020 (Healthy Campus 2020, 2015b). Healthy Campus 2020 (2015b) student objectives are based on federal guidelines for muscle-strengthening activities as performing muscle-strengthening activities on two or more days of the week. Aerobic physical activity and muscle-strengthening exercises will be promoted in the CHIP.

Significance of the Project

Reduction of gaps. Health disparities exist among populations for various reasons. The college health clinic population health improvement plan has the goal of decreasing the percentage of students who are obese, increasing the amount who report eating at least five servings of fruits and vegetables a day, increasing the percentage who report meeting federal guidelines of physical activity and fitness including aerobic activity and muscle strengthening exercises according to the goals and objectives of Healthy Campus 2020 (2015b), in an attempt to minimize disparities and improve health. Research has been done using health planning in four-year residential college campuses, but is limited in two year non-residential campuses (Kattelmann et al., 2014). The plan helps expand the knowledge base in health planning in the two-year college population.

Implications for social change. Implications for social change are that students will learn the importance of and choose to incorporate more exercise and activity in addition to more fruits and vegetables in their diet each day in the school site and otherwise, so improved health outcomes can be the benefit. Case management by Health

Services personnel will enable the student to have step by step intervention, teaching, and follow up as indicated by the health profession. I will include new interventions to improve health in the improvement plan such as a nutrition education program, more access to fruits and vegetables, a wellness walkway, and increased hours at the fitness center, to promote federal guidelines and objectives of Healthy Campus 2020 (2015b).

Healthy People 2020 (2015) identifies schools, worksites, and communities as social structures in which people have close contact with, and are settings that can have a great impact on health by supporting the messages given in the healthcare setting. In addition, information can be targeted towards certain populations in college settings, and topics such as chronic disease, prevention and nutrition, obesity, and physical activity can be included in the education (Healthy People 2020, 2016). The college health clinic community improvement plan has the potential to reduce obesity, improve nutrition and weight status, increase physical activity and fitness, and subsequently reduce the risk for diabetes and other chronic disease over the students' lifetime, potentially decreasing overall health care costs.

Students, as agents of their own health, can learn patterns of behavior consistent with national guidelines within a framework of Bandura's social learning theory and the ICCC model and self-care model. Bandura's social learning theory posits a belief in one's efficacy to choose for oneself to process personal change and maintain personal habits in social systems that support the change (Bandura, 20014). The student operationalizes these theories by social observation and direct instruction that takes place in a social context (Bandura, 2001). Health education initiatives will be an integral part of the CHIP.

Included are an individualized assessment and management plan which is case managed by the college nurse and health assistant and includes follow up and self-care support and encouragement.

The project includes low cost incentives such as pedometers or water bottles, but mostly relies on the students' desire as self-care agents to incorporate healthy self-care into their lifestyle. Education in the social context and changes in the social system that support the change is the framework to prevent chronic disease by health promotion and disease prevention activities. Requests for physical activity resource availability and new health practice strategies could be placed in strategic initiatives for coming years, and budgets can be planned to increase staff for case management and health promotion education at all campus health departments.

Summary

A CHIP based on community health indicators prioritized by literature review, needs assessment, and federal guidelines in Healthy Campus 2020 (2015b) was designed by the project researcher. The precede-proceed model with logic model constructs was used for the framework and model to create health initiatives for a college health services community improvement plan (CDC, 2010). The logic model is built on the systems theory, and used in public health programs as well as other sectors of industry (CDC, 2010; W.K. Kellogg, 2004). The Innovative Care for Chronic Diseases (ICCC) with Self-care models and Bandura's Social learning theory are the underpinnings of the health promotion education and the focus of the college health clinic care delivery restructuring consistent with the proven literature (Bandura, 2001; Epping-Jordan et al., 2004).

In the CHIP the NCHA and Healthy Campus 2020 health status indicators of nutrition and weight status, and physical activity and fitness are focused on (NCHA, 2009; Healthy Campus 20202, 2015b). The evidence from a meta-analysis done by Fardet and Boirie (2013) concludes that poor nutrition and obesity correlate with many major chronic diseases and account for a large amount of healthcare costs. The research validates why a focus on nutrition and weight status is important in a college CHIP (Fardet & Boirie, 2013). The CHIP includes written educational materials, group presentations and peer discussion by community health partners such as public health nutrition experts, and infrastructure improvement plans such as walking trails with distance markers and improvements in the fitness center facility. The ICCC, Bandura's social-cognitive learning theory and the self-care model is used as a framework of practice for the health promotion education, learning, and case management of student health (Bandura, 2001; Epping-Jordan et al., 2004; Improving Chronic Illness Care, 2016; Riegel, Jaarsma, & Stromberg, 2012). Evidence based practice case management and follow up, decision-making and policies based on national public health messages, sustained self-care, and health improvement will be the expected outcomes of the CHIP.

Section 2: Review of Literature and Theoretical and Conceptual Framework

Background Content

Population health and the science underpinning public health have been traced back to ancient Greeks and Romans (Friis & Sellers, 2014). In more recent history, government agencies have been collecting and compiling data that local municipalities have used to implement health programs. College community health assessments research using indicators of college health has advanced and results are analyzed, benchmarked, and used by health providers to design, plan, and implement community health improvements (CDC, 2015a). In the chapter, I include the review of the literature that I used in the project.

General Literature

Evidence based practice (EBP) projects and research contribute to health knowledge. Much new data is being obtained by researchers and analyzed to understand what the health needs are in various communities to use in community health improvement plans. Community health assessments have been done by researchers with various tools to acquire evidence on community health indicators pertaining to college health, and the health of the surrounding communities at the national, state, and local level (CDC, 2015a).

Organizations such as CDC and ACHA have developed data collection tools and have acquired data to produce indicators of college health (CDC, 2015a). The indicators can be used to design, plan, and implement programs to prioritize, address and attempt to improve health. CHSIs are important to public health. Researchers choose CHSIs by

certain attributes. The risk factor categories available are alcohol consumption, asthma, cholesterol awareness, colorectal cancer screening, diabetes, disability, exercise and physical activity, health status, health care access, hypertension awareness, immunization, nutrition, oral health, tobacco use, weight classifications, and women's health (CDC, 2015a). The CHSI's must be actionable, reported, and available for at least two-thirds of the counties in the U.S. and based on scientific literature and evidence (CDC, 2015a).

The Healthy People 2020 (2015) Clinical Preventative Services Leading Health Indicators covers a range of health issues, including: cancer, heart disease and stroke, and diabetes, and infectious diseases. The CDC has produced an interactive web-based platform that includes health profiles of all counties in the country, which include most of the 42 metrics recommended in the community health assessment (CDC, 2015a). The American College Health Association (ACHA) has done survey research to compile data on the important indicators in college health such as alcohol, tobacco and other substances, sexual health, weight, nutrition and exercise, mental status, personal safety and violence (ACHA, 2015). The data is available on the internet to the public, and permission is not necessary from the organization.

Healthy People 2020 (2014b) recommended wellness programs for elementary schools, colleges, worksites, and community settings and key community health indicators include nutrition, exercise, and access to safe places to exercise. Additionally, Healthy People 2020 (2016) verified that schools, worksites, and communities are social structures that people have close contact with, and the settings can have a great impact on

health by supporting the messages given in the healthcare setting. Information can be targeted towards certain populations in the different settings, and topics such as chronic disease prevention and nutrition, obesity, and physical activity can be included in the education (Healthy People 2020, 2016). Health initiatives at IHE's should include a group of members supporting the measure working towards priority health needs by a plan with strategies and action steps using community and individual interventions with measurable outcomes (Healthy Campus, 2015). Basch (n.d.) stated that school health programs that include coordinated programs for illness, physical activity, and other health indicators have synergistic effects on achievement in education.

Research using the precede-proceed model to plan health promotion initiatives for college students called Young Adults Eating and Active for Health (YEAH) identified factors that were of highest priority to 18-24-year-old college students. Environmental supports were identified by project YEAH researchers, behavioral changes were identified, and interactive learning interventions were put in place (Kattelmann et al, 2013). The web-based education intervention consisted of 10 weeks of health promotion information about eating, activity, and healthy lifestyles (Kattelmann et al., 2013). The study concluded that the participants gained important information and gained confidence in their ability to do what was necessary to improve health (Kattelmann et al., 2013).

The CDC has used the PPM including the logic model for health promotion projects and change tools (CDC, 2014a). The PPM is a tool for planning and evaluating health education promotion programs, and the model works backwards to look at the desired outcome then plan the inputs and activities to reach the objectives and outcomes

desired (Green & Mercer, 2002). The logic model consists of inputs, activities, outputs and outcomes as components with which to break down the parts of a project, is built on the systems theory, and is used in public health programs as well as other sectors of industry (CDC, 2010; CDC, 2014a; W.K. Kellogg, 2004).

Public health initiatives are designed to promote health, prevent illness, and decrease disability, all of which become much more complex as diseases get worse (USDHHS, 2011). Obesity and the related diseases are complex and require health initiatives and intervention. Since obesity is shown to correlate with cardiovascular disease, diabetes, cancers, and increased health care costs and worsening wellness, public health wellness initiatives are valuable (CDC, 2015; Fardet and Boirie, 2013; Goetzel, 2012).

Specific Literature

Nutrition and weight status. Nutrition and weight status are indicators of health and include amount of fruits and vegetables eaten every day, and healthy weight measured by BMI. In Healthy People 2020 (2011), a goal of nutrition and weight status was evident within the objectives of increasing primary providers' measurement of BMI, increasing the number of adults who are a healthy weight, and reducing the number of obese adults. Moreover, Healthy People 2020 (2011) stated that interventions such as available healthy food, access to physical activity options, and increased knowledge about weight loss can be offered in many settings such as health care locations, schools and colleges, and workplaces. Obesity is a growing concern and affects a third of the population, contributes to missed work and school days, injury, and to a decrease in

productivity (CDC, 2015b). The percentage of overweight persons in the 20 and older population is 68%, 35.7% of whom are obese (NIH), 2012). The National Health and Nutrition Examination Survey of 2009–2010 showed that over two in three adults are overweight or obese; one in three adults are obese (National Institute of Health, 2012). Obese and overweight people have a higher risk of developing many diseases including heart disease, diabetes, high blood pressure, and high cholesterol (CDC, 2015b). Obesity is associated with 27.4% higher healthcare costs (Goetzel, 2012). Studies also show decreasing obesity can correlate with decreased injuries, missed days, and lost time (Goetzel, 2012).

The direct and indirect costs of obesity would be decreased if obesity were curtailed (Dee et al., 2014). Direct costs are measured by calculating health care related to obesity including inpatient and outpatient lab tests, drug costs, and disease costs associated with obesity, such as diabetes and cardiovascular disease (Dee et al, 2014). Cawley and Meyerhoefer (2012) estimated the cost of obesity and related illness as $190.2 billion or 21% of spending on medical care in the United States. Indirect costs were calculated to be higher than direct costs and include absenteeism, decreased productivity, short-term disability, and early mortality (Dee et al., 2014). Indirect and direct costs increase as BMI increases (Dee et al., 2014).

The social impact of decreasing obesity is a subsequent decrease in noncommunicable disease (WHO, 2010). Obesity is a risk factor in noncommunicable diseases such as strokes, diabetes, cancers, and depression (Dee et al., 2014). To decrease costs to society due to obesity, the rising rate of obesity should be curtailed by

government recommendations that achieve improved health outcomes and personal health improvement.

Obesity and increased waist circumference along with low activity level increase mortality (Bellocco, Jia, Ye, & Lagerros, 2010). A Cox regression model was used and adjusted for age and other confounders to show that high waist circumference and low physical activity in women almost doubled risk compared to low waist circumference (Bellocco, Jia, Ye, & Lagerros, 2010). In addition, high physical activity, and obese men with low physical activity had increased mortality risk by 98% over men with normal weight and high physical activity (Bellocco, Jia, Ye, & Lagerros, 2010). Although more research needs to be done on the relationship between physical activity and obesity, there is a correlation between increased activity and decreased weight (Bellocco, Jia, Ye, & Lagerros, 2010; Johns, Hartman-Boyce, Jebb, Aveyard, 2014).

Fardet and Boirie (2013) completed a meta-analysis on the literature concerning the relationship between nutrition and many other chronic diseases. The researchers found that obesity is a strong risk factor for cardiovascular disease and increases risk by 410%, as well as cancer with a 390% increase in risk (Fardet & Boirie, 2013). Obesity increases risk for diabetes by 1700% (Fardet & Boirie, 2013). The study showed that obesity is a risk factor for as many as nine chronic conditions, and possibly more (Fardet & Boirie, 2013). In addition, the authors concluded that because of the link between obesity and higher risk of chronic disease, and the link between chronic disease and death, unhealthy diet might be the leading cause of death in France, and the Western

countries generally (Fardet & Boirie, 2013). Therefore, people should avoid obesity to avoid subsequent risk of chronic disease (Fardet & Boirie, 2013).

Physical activity and fitness. The indicators of physical activity and fitness were a focus of the CHIP, in addition to the indicators of nutrition and weight status. Physical Activity Guidelines for Americans and the Global Recommendations on Physical Activity for Health in 2008 recommend 150 minutes of moderate intensity aerobic physical activity per week for adults between the ages of 18–64 years (WHO, 2010). Tudor-Locke and Bassett (2004) created an objective measure for moderate physical activity as 10,000 steps a day, as 30 minutes of moderate activity is 3000-4000 steps if a person steps 100 steps per minute, added to the calculated 6000-7000 steps usually taken for activities of daily living. Research shows that 150 minutes of aerobic physical activity has been associated with a 1-3% weight loss (WHO, 2010; USDHHS, 2008). Physical activity expenditure is a key element of energy balance and subsequent weight control (WHO, 2010). Moreover, physical activity and decreased obesity decrease cardiovascular disease, cancers, diabetes, depression, and hypertension, and the greater the amount of physical activity, the greater the reduction of risk of the noncommunicable diseases (WHO, 2010). Moreover, the WHO (2010) concluded that there is a relationship between physical activity and metabolic health and a reduced risk of diabetes and metabolic syndrome.

The indicators of nutrition, weight status, and physical activity and fitness are often researched together. Literature on physical activity and obesity shows that activity is an essential portion of maintaining energy balance and weight regulation (WHO,

2010). Johns, Hartmann-Boyce, Jebb and Aveyard (2014) reviewed the literature to find whether physical activity and diet were more effective in weight reduction than physical activity or dieting alone. The findings were that weight loss in the short term—such as 3 months—was effectively attained by dieting alone, but in the long term such as 12 months, diet and physical activity combined were more effective for weight reduction than diet or physical activity alone (Johns, Hartman-Boyce, Jebb, Aveyard, 2014).

Theoretical and Conceptual Framework

Meso-level theory. I used the PPM as the overarching meso-level theoretical framework for the project. Meso-level theory refers to organizational integration of healthcare (Valentijn, Schepman, Opheij, & Bruijneels, 2013). Integration into the larger system of health to meet population health needs on a larger scale would be the macro-level healthcare, but is not covered in this project, although community partnerships are encouraged in the plan (Valentijn et al., 2013).

Precede-proceed model. The PPM is a framework for planning that allows the researcher to look at goals and objectives so the activities to try to reach the goals and objectives can be planned (Green & Kreuter, 2005). Researchers at Johns Hopkins University created, used, and modified the proceed model which is a tool for planning and evaluating health education promotion programs (Green & Kreuter, 2002). A researcher can use the model and work backwards to look at the desired outcome then plan the inputs and activities to reach the objectives and outcomes desired (Green & Mercer, 2002). Per Green and Kreuter (2005), health behavior can only be changed by understanding why people behave as they do, and understanding what the predisposing,

enabling, and reinforcing factors are that influence their health behavior. The PPM was used by me as a structured valid tool to reassesses the policy and environment to discern what is enabling poor health behavior, and what can be changed to support and encourage health behavior to reach desired outcomes (Phillips et al., 2012). The PPM has been used in global initiatives and the CDC recommends use of the model for planning community health initiatives (Green & Kreuter, 2005; Phillips et al., 2012).

The PPM is a comprehensive approach to planning because it takes into consideration the many aspects involved in health behavior change such as behavioral, environmental, and social facets (Phillips et al., 2012). The acronym PRECEDE stands for predisposing, reinforcing, and enabling constructs in education, diagnosis, and evaluation (Green & Kreuter, 2012; Phillips et al., 2012). PROCEED has four phases; social assessment, epidemiological assessment, educational and ecological assessment, and administrative and policy assessment and interventional alignment (Phillips et al, 2012). The two parts work together to identify priorities and plan objectives and allow a user to deduce what the unmet needs are (Phillips et al., 2012).

logic model. In the plan, I incorporate a policy, systems, and environmental change strategy as a framework and conceptual model to create health initiatives focusing on CHSIs of activity and exercise, and nutrition and weight status for a college health services community (CDC, 2010). The CDC (2010) uses the logic model as a conceptual model for project planning. The logic model is most appropriate for college community health improvement plans because the model includes the systems theory concepts of inputs, process or activities, outputs, and outcomes as a basis for project planning

(Kettner, Moroney, & Martin, 2013). I used the logic model to organize the planning into sections.

The purpose of using the logic model is to show the process of events in a project, and can project a timetable for specific events and activities (Kettner, Moroney, & Martin, 2013). In the logic model, the concept of inputs refers to resources and raw materials. The concept of process refers to the activities using the inputs to reach objectives (Kettner, Moroney, & Martin, 2013). The concept of outputs refers to the amount of services and completion of services recommended in the plan (Kettner, Moroney, & Martin, 2013). The concept of outcomes refers to the benefits to the population that the plan focuses on (Kettner, Moroney, & Martin, 2013).

Micro-level theory. I used the ICCC model along with the self-care theory and Bandura's social cognitive learning theory as an additional framework and model to create health education initiatives for a college health services community improvement plan (Bandura, 2001; Epping-Jordan et al., 2004; Improving Chronic Illness Care, 2016; Riegel, Jaarsma, & Stromberg, 2012). The self-care model explains the ability of persons to care for or prevent chronic conditions. I used the social-cognitive theory as the framework for persons to learn about prevention strategies such as nutrition, healthy weight, physical activity and fitness to enable persons to care for themselves.

innovative care for chronic conditions (ICCC) model. People with chronic conditions require interactions with health care systems for attention and modifications of treatment (Improving Chronic Illness Care, 2016). The ICCC model is based on the chronic care model dyad, however, community and policy are added to form a triad of

care. The World Health adopted the additions to the CCM to endorse the ICCC model, and the model is being used throughout the world (Epping-Jordan et al., 2004). There are similarities and differences in the ICCC model and the CCM which I compare in upcoming sections. The ICCC model designers build on and expand the CCM to make a more comprehensive model for community health project planning (Epping-Jordan et al., 2004).

The chronic care model (CCM) includes interactions by the affected person with the appropriate community resources and health care systems to reach improved outcomes as the goal (Improving Chronic Illness Care, 2016). The essentials of the model are the health system, self-management support, delivery system design, decision support, and clinical information systems (see Appendix; Figure 2, Chronic Care Model). Additional themes of the CCM model include patient safety, cultural competencies, community policies and care coordination (Improving Chronic Illness Care, 2016). The CCM depicts that when the essentials are in place, the informed, activated patient has productive interactions with the prepared, proactive practice team, health outcomes are improved (see Appendix; Figure 2, Chronic Care Model).

The World Health Organization (WHO) has adopted the model in response to the growing amount of chronic conditions around the globe and emphasizes community aspects of improving care (Epping-Jordan, Pruitt, Bengoa, & Wagner, 2004). The micro, or patient interaction level, the meso level of the healthcare system, and the macro level including policy and financing are parts of the CCM. Within the meso level of health care system, the community is an important piece in the framework as a supporting partner to

echo the important messages about chronic disease management and prevention, since most of the time of the persons with chronic conditions is outside of the health care system (Epping-Jordan, Pruitt, Bengoa, & Wagner, 2004).

International health leaders appointed by the World Health Organization (WHO) collaborated to create the additions to the CCM called the ICCC model (Epping-Jordan et al., 2004). The researchers who designed the innovative care for chronic conditions (ICCC) model added community and policy initiatives to the informed proactive patient and supportive health care team dual concept framework to create a three concept, flexible comprehensive framework to build a plan on (Epping-Jordan et al., 2004). The ICCC model emphasizes more aspects of quality care for chronic diseases at the micro, meso, and macro-level (Epping-Jordan et al., 2004). The micro-level which is the patient interaction, and the meso-level, which is the healthcare organization are constructs of the CCM. The macro-level portion of support for quality outcomes is added into the ICCC model and includes legislation, leadership, policy integration, partnerships, financing, and allocation of human resources (Epping-Jordan et al., 2004). The project site health providers at the community college can play a role in offering preventative programs to support the health systems caring for the person with chronic illness, form partnerships with organizations to provide preventative care for the college health population, and reiterate the importance of disease management.

Self-care model. The self-care model for chronic illness is part of the CCM and was developed by nurse theorists at University of Pennsylvania (Riegel, Jaarsma, & Stromberg, 2012). The CCM contains the concepts of self-care maintenance, self-care

monitoring, and self-care management, and stresses that self-care is important in the care of chronic disease management and prevention (Riegel, Jaarsma, & Stromberg, 2012). Self-care maintenance are the behaviors to keep the health level stable, prevent disease, and improve health such as nutrition, exercise, smoking cessation, or coping with stress, as well as taking medicine as suggested by provider (Riegel, Jaarsma, & Stromberg, 2012). With self-care maintenance, adherence is essential, and relying on evidence-based recommendations leads to improved health outcomes (Riegel, Jaarsma, & Stromberg, 2012).

Bandura's social-cognitive theory framework. I used Bandura's social cognitive learning theory as a framework of reference to plan interventions that improve health outcomes in the college health clinic community. The theory postulates that persons are agents with a capacity for decision making to control their own destiny, and learning has a social aspect as well that is impacted by observing others in the community (Bandura, 2001). Bandura (2004) suggests that learning of healthy behaviors as young adults leads to the likelihood that the behaviors will be retained into adulthood. I used the theory to guide educational intervention with the goal of reaching established objectives to improve health outcomes.

Summary

The precede-proceed model was the overarching framework of the project planning. I used the logic model constructs of inputs, activities, outputs and outcomes to define the roadmap expected. The precede-proceed model and the logic model are used

by researchers to plan, construct, and implement health promotion projects, and are recommended by the CDC (2010).

The ICCC model, the self-care model, and Bandura's social-cognitive theory framework were integrated in the project because the models provide a framework for education, behavior change, and case management necessary to sustain self-care and because the developmental stage of the college population is based on relationships and social role expectations (Bandura, 2001; Epping-Jordan et al., 2004; Riegel, Jaarsma, & Stromberg, 2012). The ICCC model incorporates the essential components of the healthcare system including community services to support and encourage self-care of the person with chronic illness (Epping-Jordan et al., 2004). In addition to the various healthcare components supporting the person with chronic illness, the self-care model is necessary because it focuses on the individual and his or her health promoting practice Riegel, Jaarsma, & Stromberg, 2012. Moreover, the social-cognitive theory is necessary to use in conjunction with the ICCC model and self-care model because the theory proposes to describe how individual learning happens within the community support settings (Bandura, 2001).

Section 3: Methodology

Objectives

My objectives in this project were to prioritize key health indicators for the population of a college health services clinic by reviewing and critiquing the literature, analyzing secondary data sources, and to design and plan a college health clinic community health improvement plan. The literature review shows health planning in 4-year residential colleges, but not 2-year nonresidential campuses (Kattelmann et al., 2014). I the community health improvement plan, I focus on health status indicators of nutrition and weight status, and physical activity and fitness, and student objectives from Healthy Campus 2020 (2016) were used. The objective of a healthy weight and reducing obesity is measured by BMI of 18.5-24.9 for normal weight with a goal of reduction of obesity by the year 2020, compared to the 2010 baseline data (Healthy Campus 2020, 2015b). In addition, increasing the number of students who eat five or more servings of fruits and vegetables a day is another indicator of healthy weight and reducing obesity (Healthy Campus 2020, 2015b).

I chose the indicators because obesity, inactivity, and poor nutrition are risk factors for obesity, and are associated with chronic disease such as cardiovascular disease, cancers, and others (Fardet & Boirie, 2013; WHO, 2010). This section includes the program methodology for a plan that includes a set of recommendations of assessment, activities, education, and case-management to achieve necessary individual learning, environmental change, and self-care to promote, sustain, and improve health outcomes. The section also includes the framework and theories I used for planning

including precede-proceed and logic model, and the ICCC model, self-care model, with Bandura's social-cognitive theory to help form the educational interventions in the plan.

Project Design and/or Methods

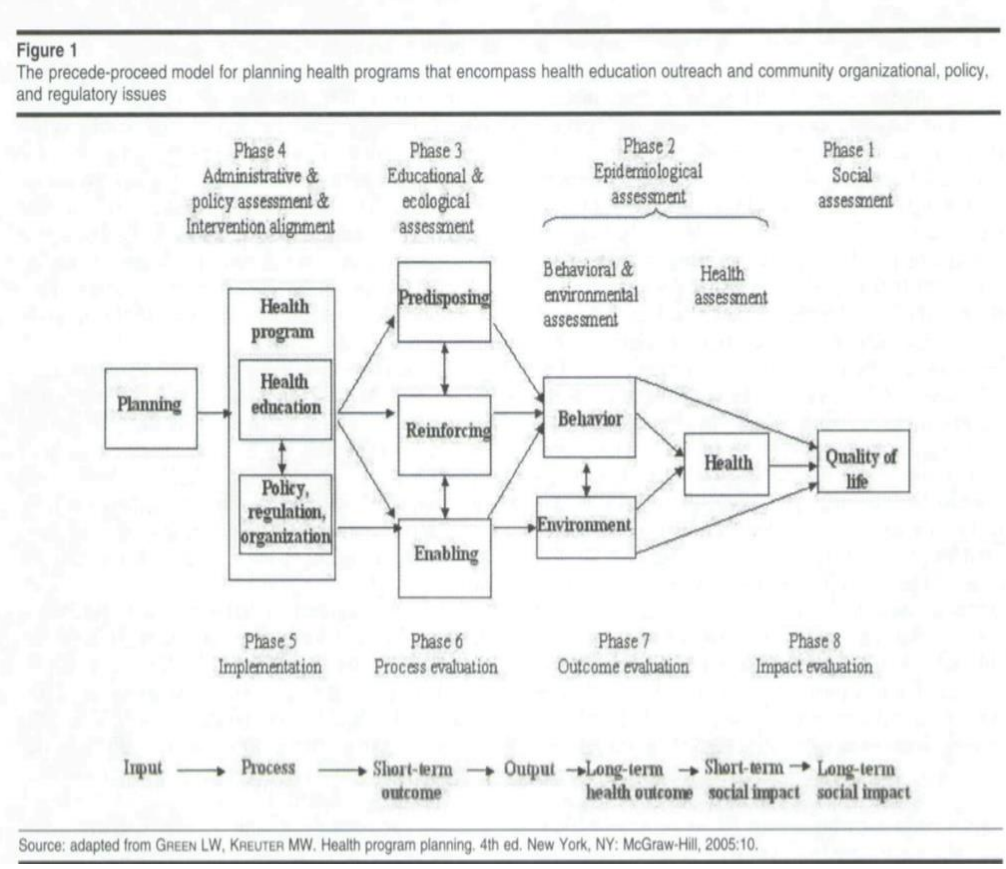
In the project design, I incorporated all the meso-level and micro-level principles of the theories used. The suggested process can be visually followed the reader by referring to multi-directional concept maps (see Figures 1, 2, & 3). The precede-proceed model and the logic model constructs were the meso-level theories. The models are the basis of the institutional health planning design. To accomplish the health improvement at the individual level, the ICCC model was used by me, with the self-care model and Bandura's social-cognitive theory as support theories (Bandura, 2001; Epping-Jordan et al., 2004; Green & Kreuter, 2005). All theories are important because health improvement is multifaceted. With use of the included meso-level and micro-level models, a comprehensive plan was constructed by me. The models are explained by me within the project design and methods section, and the method of usage are described.

Framework and models concept maps. The precede-proceed model and the logic model were the framework I used for the planning portion of the project. The ICCC model, Bandura's social cognitive theory, and chronic care and self-care model are the framework I used for environmental and educational initiatives to minimize health disparities and decrease risk for chronic disease in the college population (Improving Chronic Illness Care, 2016; Riegel, Jaarsma, & Stromberg, 2012). The precede-proceed model and the logic model are the meso-level theory, and the ICCC model and Bandura's

social-cognitive learning theory were the micro-level theory I used. I explained all models in more detail with concept maps shown as visual representations.

Precede-Proceed Model. The PPM was the overarching framework of the project I used for planning, with the constructs of the logic model to define the inputs, activities, outputs, and outcomes of the plan. The logic model includes policy, systems and environmental change as structural components (CDC, 2010). Both models are necessary to build a comprehensive plan. The concept map of the PPM and the constructs of the logic model are shown in Figure 3.1 (see Appendix A).

Figure 3.1- Precede-proceed Model Concept Map



I used the PPM as a tool to guide in program planning. The PPM is used in program planning by enabling the researcher to look at what result is desired, then work backwards to see what needs to be done to reach the goals (Green & Kreuter, 2005). The precede-proceed model has five phases of needs assessment and three phases of planning (Li et al., 2009). The acronym PRECEDE stands for predisposing, reinforcing, and enabling constructs in education, diagnosis, and evaluation (Green & Kreuter, 2012; Phillips et al., 2012). PROCEED has four phases: social assessment, epidemiological assessment, educational and ecological assessment, and administrative and policy assessment and interventional alignment (Phillips et al, 2012). When using the concept map, phase 1 is at the top right is the beginning of the process, and phase 2, moving to the left is next, and so on.

I replaced the phase one social assessment and the phase two behavioral and health assessment with existing data from ACHA which was used to formulate objectives Healthy Campus 2020 (Healthy Campus 2020, 2015b). The needs assessment that was done by me in the project is like Li et al.'s (2009) research, and includes behavioral and environmental risk factors, educational diagnosis (predisposing, enabling, reinforcing factors), and resources (such as policy and organizations). Li et al. (2009) used CDC data for the needs assessment data for their health promotion plan. Since the ACHA data is already collected for college populations and is coupled with national data sources such as Healthy People 2020 (2011) and Healthy Campus 2020 (2015), this project does not include data collection, and includes planning based on the prior needs assessment data found in Healthy Campus 2020 (2015). Other health promotion plans based on the model

use needs assessments done by other researchers, and base the plan on phases six, seven, and eight only (Kattelmann et al., 2014; Li et al., 2009).

Although the needs assessment includes prior data collected by NCHA (2009) and Healthy Campus 2020 (2015), I did a supplementary, campus-specific needs assessment for the DNP project. The phase two environmental assessment was completed by me. The indicators of nutrition and weight, and exercise and fitness were the basis of the site-specific needs assessment. I based the plan on the findings in the site-specific needs assessment and prior data collection in Healthy Campus 2020.

The phase three educational and ecological assessment was done by me and specific to the college site. I constructed an evidence based health promotion plan using the PPM and predisposing, reinforcing, and enabling factors specific to the college campus and college-aged population. An ecological and educational approach was included to plan health promotion activities. Li et al. (2009) used the predisposing factors of unhealthy behavior to determine a health services plan using the PPM. The predisposing behaviors used were limited knowledge, beliefs and lack of perceived needs (Li et al., 2009). Li et al. (2009) also used enabling factors such as limited access to health promotion activities, unawareness of health promotion, lack of work-site and school health promotion, absence of health promotion related policy. The reinforcing factor used in Li et al.'s (2009) research was culture. The factors used in Li et al.'s (2009) research are recommended for use in health promotion plans and were used by me in the DNP project.

In the plan, I used predisposing, reinforcing, and enabling factors to suggest health promotion behavior. The concept map that includes the model and factors can be viewed in Figure 3.1 (see Appendix A). Ecological, environmental, and educational opportunities are included. I planned and proposed an activity and exercise program and environmental modifications. Increasing availability to the fitness center and planning a walking fitness path with measured distances are activities included by me, with a goal of promoting outcomes of decreasing overweight and obesity and chronic diseases such as prediabetes, diabetes, cardiovascular diseases, and others. I included incentives such as low cost pedometers or water bottles to be given to students to encourage participation. In addition, the implementer will invite public health education experts to present to the college population in social group learning sessions. I include healthy choices for contractors running the cafeteria and loading the vending machines. I include posting signs in the cafeteria to encourage more fruits and vegetable servings.

The phase four administrative and policy assessment and interventional alignment are incorporated in the project by me as well. Interventional alignment is essential to ensure consistent planning in all levels of health promotion. I detail phases five through eight, implementation, process evaluation, outcome evaluation, and implementation evaluation in the project as a projected plan, but full implementation will be deferred, and not included in the project.

Planning consists of components of the health program: health education, case management, self-care, environmental change, and policy, regulation, and organization. I used the components of health education, case management, self-care, environmental

change, and policy, regulation, and organization align with the levels found in the ICCM for program planning. The ICCM is the overarching framework for the program planning and contains the micro-level planning, meso-level planning, and macro-level planning.

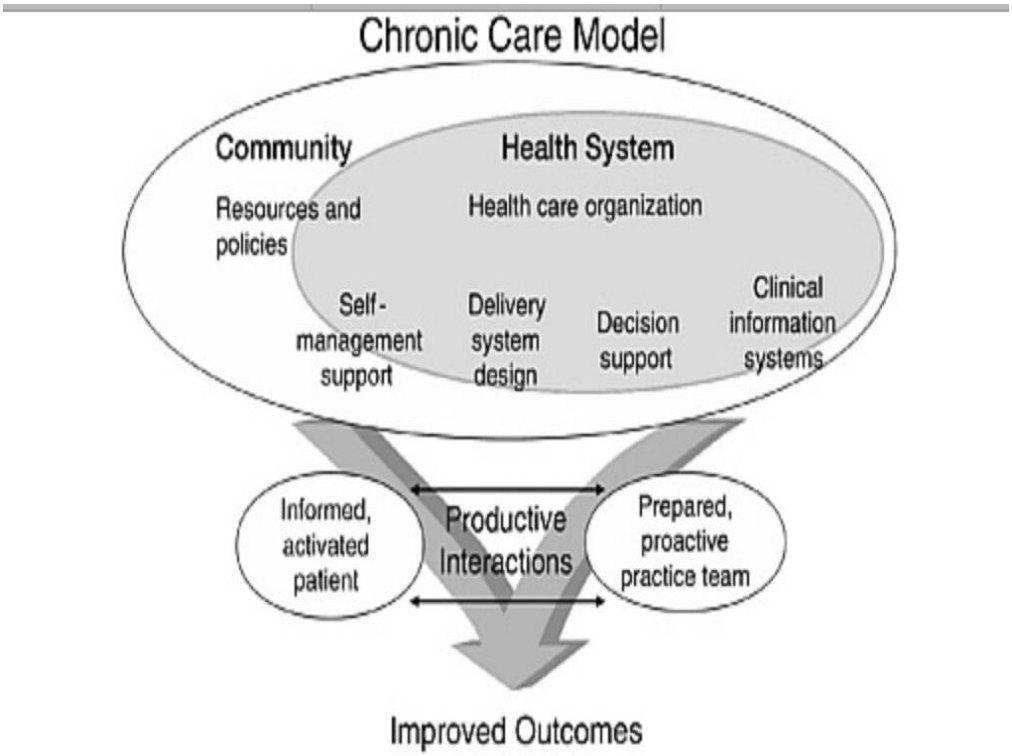
I constructed an evidence- based health promotion plan using the PPM and predisposing, reinforcing, and enabling factors specific to the college campus and college-aged population. I used predisposing, reinforcing, and enabling factors to suggest health promotion behavior. Li et al. (2009) used the predisposing factors of unhealthy behavior to determine a health services plan using the PPM. The predisposing behaviors Li et al. (2009) used were limited knowledge, beliefs and lack of perceived needs (Li et al., 2009).

Plan constructs. I used the phases of the PPM for the meso-level planning of a college health improvement plan, but micro-level models were also necessary. The meso-level theory, ICCC, along with the micro-level theoretical frameworks, the self-care model and Bandura's social learning theory were the basis of the health improvement planning process. I will explain the theoretical frameworks in more detail, and concept maps are displayed in the next section.

***Innovative Care for Chronic Conditions (ICCC) and Self-care Models*.** The innovative care for chronic conditions (ICCC) model was used with the self-care model underpinning the ICCC model as a framework of reference when creating health initiatives for a college health clinic community. I used Bandura's social-cognitive learning theory to guide the educational initiatives.

When looking at the ICCC model concept map, it is informative to look at the chronic care model concept map also, because the ICCC model is based on the CCM (Figure 3.2, see Appendix B). The chronic care model (CCM) and the constructs needed to improve health outcomes are shown in Figure 3.2 (see Appendix B). The CCM is based on community and health systems contributing to the productivity of the patient and team, which leads to improved outcomes.

Figure 3.2- The Chronic Care Model (CCM)



The ICCC model is based on the CCM, but adds additional components of positive policy environment. The inclusion of positive policy environment in addition to the community and health care organization to enhance the patient, family, and team triad leads to improved outcomes. The addition of policy environment is important to identify macro-level assessment and planning needs related to policies in the organization and community. The policy environment at the macro-level will also be considered and incorporated as a portion of the plan. The ICCC model and the constructs to improve health outcomes are shown in Figure 3.3 (see Appendix C).

Figure 3.3- The Innovative Care for Chronic Conditions (ICCC) Model

Projected time frame design. The timetable I used for planning the CHIP is shown in Figure 4 Gantt chart (see Appendix E1, Figure 4). I projected that the planning process will occur over a four-month timeframe. The second Gantt chart is a projected

timetable for the implementation of the constructed plan, which will not take place in this project, but at a future date when finances allow (see Appendix E2, Figure 5).

The projected health improvement plan consists of inputs, activities, outputs and outcomes and I project that the implementation will take place in a one-year timetable (see Appendix, Figure 5, Gantt chart). The activities planned focus on health status indicators to deliver the services that are intended so that the participants benefit in certain ways which are outputs and the impact of certain changes in the community might occur which are outcomes (W.K. Kellogg Foundation, 2006). Fiscal planning and subsequent annual budgeting is suggested by me as part of the plan.

I designed and constructed the plan, but the one-year implementation time table is a potential time frame when and if implementation occurs, which is not in this DNP project. I include planning only, and the implementation of the project is expected and desired, although not included in the DNP project. Evaluation will be completed when and if the project is implemented by the Health Services team at the college and the method will be chosen then. The evaluation methods of the project based on Healthy Campus 2020 (2016) objectives of nutrition and weight status, and physical activity and fitness are suggested by me in the plan but will be completed after the plan has been implemented and are included in the project.

Health provider initiated. I designed, planned, constructed and encouraged use of the project for implementation. The college health services nurse and staff which is a part-time Emergency Medical Technician (EMT) can implement the plan after resources have been attained. Health Services personnel will enable each student to have step by

step intervention, teaching, and follow up as indicated by the defined roles health professional's scope of practice and case management process. Primary care is not currently available through health services, but students will be referred out to community provided services by health services staff when the need arises. The resources necessary for the plan will be budget line items for educational staffing, promotional items, fitness center staffing and equipment for increased hours, and health staff for all campuses. The director of health services will include personnel in the college when implementing whose roles are essential for the project such as nurses, health assistants, student services administration, and health educators.

I include an activity and exercise program along with a nutrition education initiative as an integral part of an evidence-based practice for the health care case management staff who recommend activities for consumers who are overweight, obese, have pre-diabetes or diabetes, and for health promotion of any student or employee of the college health clinic community. The college health care providers will be encouraged to offer evaluation, case management, and follow up based on students' needs, and offer components and activities included in the CHIP to the students and employees visiting the health office for any reason.

The case management and follow up by the implementing staff lends support to the persons involved to sustain their self-care efforts. Self-care should be encouraged by the implementing college health provider based on Bandura's self-care theory. Although primary care is not available in college health, students should be referred to primary providers in the community by health staff when appropriate. Students can partake in

health promotion opportunities at will at their own discretion. When healthy behaviors are developed as young adults, the behaviors are more likely to continue as adults (Bandura, 2004). Any member of the college population will be welcomed and included by health services staff in the initiative unless a medical or physical contraindication exists such as a physical or cognitive impairment. The health provider will offer informatics management of health care data in a password protected health record.

Population

The population is a college health clinic community consisting of approximately 7000 full time and part time students. The college is a two-year non-residential college in the United States. The ages of the student population are between 18-80 and older (ACCC, 2012). Individuals are male, female, or LBGT with different ethnic backgrounds, economic situations, and education levels ranging from high school diploma to other degrees (ACCC, 2012).

The project team is administrators, facilities personnel, and student services branch management and the team was involved from the beginning to the end of the project. Primary care providers are not hired by the college, but will be referred to by the college nurse when indicated. I recruited the team by role per department they work in, and I held team meetings regularly depending on need to share expertise and feedback. My role was to conduct literature review, collaborate, coordinate, design, and plan the college health improvement project. Health Services teams who eventually choose to implement the plan will decide what evaluation tool best fits their needs, although methods are suggested in the project.

Data

The data used to prioritize the need for which health determinants of nutrition and weight status, and physical activity and fitness was from Healthy People 2020, Healthy Campus 2020, CDC community health status indicators (CHSI), and literature review (CDC, 2015a; Healthy Campus, 2015b; Healthy People 2020, 2011). The data collected for the college health clinic community indicators of nutrition and weight status, and physical activity and fitness were focused on by me in the CHIP because the indicators are associated with many chronic diseases and healthcare spending (Fardet & Boirie, 2013). The data was accessible on the internet and available for use without permission of the organizations.

Protection of human subjects. In the college health clinic population health improvement plan, there was no direct involvement with humans. To design the CHIP, I chose the project team by role and held administrative department and meetings to discuss and determine needs and strategy of the plan. I used research and literature review knowledge to contribute to the strategy and priorities in the plan. The team and I prioritized health indicators based on Healthy Campus 2020 (2015) literature and an exhaustive search of the literature. I served as the project administrator and led the organizational assessment and planning process. I did not include college students during the plan design and the DNP project time. Although the plan was designed by me for college students, there was no research involved or direct contact with students during the project.

Data analysis, Reliability, and Validity of the Review of the Literature

Secondary data source of CDC community health status indicators (CHSI), ACHA, Healthy People 2020, Healthy Campus 2020 were used by me as part of the integrated literature review, however, new research was not conducted by me in the CHIP project, except for information gathering from key informant interviews (CDC, 2015a; Healthy People 2020, 2011; Healthy Campus 2020, 2015b). The data was available in the internet free of charge, and no permission was necessary from the organizations.

An integrated review including qualitative and theoretical research was used by me based on the framework of Whittemore and Knafl (2005) to allow different methodologies in the review. The concept of preventative health in the college population and search words were used by me such as preventative health, college improvement plan, and college health indicators and determinants, two-year college health improvement, chronic disease prevention, and health promotion.

I researched the information by search methods using databases such as Cumulative Index of Nursing and Allied Health Literature (CINAHL). Results included quantitative, qualitative, mixed method, and theoretical literature. Including different research methodologies in the review is important in nursing because it is a social science using qualitative, quantitative, and theoretical and mixed method varieties and reviewing the research systematically ensures academic rigor and allows complex concepts to be generalizable (Whittemore & Knafl, 2005).

Summary

A college health clinic community health improvement plan focusing on health status indicators was planned and designed by me. The CHIP is based on the Healthy Campus 2020 indicators, and a literature review of priority health indicators (CDC, 2014a, Healthy Campus 2020, 2015b). The focus is on the priority college health clinic indicators of nutrition and weight status, and physical activity and fitness. Initiatives to promote improved health outcomes are included by me.

I used Healthy Campus 2020 (2015b) goals and objectives for the health indicators of nutrition and weight status, and physical activity and fitness. I chose the indicators as a priority because poor nutrition, obesity, and inactivity are risk factors for chronic disease and are associated with high healthcare costs (WHO, 2010). The objectives in Healthy Campus 2020 (2015b) are SMART objectives, which are designed to assure the goals are specific, measurable, achievable, realistic, and time-specific (CDC, 2010).

The PPM in conjunction with the logic model constructs of inputs, activities, outputs, and outcomes are the framework used by me for planning (Green & Kreuter, 2005; CDC, 2010). The ICCC model with self-care theory underpinnings, along with Bandura's self-care theory were used by me (Bandura, 2001; Improving Chronic Illness Care, 2016; Riegel, Jaarsma, & Stromberg, 2012). The use of the models allowed for assessment and planning at the macro-level, meso-level, and the micro-level.

I included health improvement strategies such as education seminars and social group learning, and public health education experts will be invited to present to the

college population in social group learning sessions. Bandura (2004) shows that when healthy behaviors are learned in childhood and early adult ages, the healthy behaviors are more likely to continue into adulthood. I coordinated steps to track participation and progression in a health information database, and phone call follow-up.

The roll out of the initiative will be held by me in the auditorium with a presentation and education of the expectations of the project. I will include health education about nutrition, weight, exercise and fitness, as well as group social learning by health promotion presentations by community partnerships. Written educational materials and information about community resources will be available and disseminated. Primary care is not currently available at the college, but community providers will be referred to by college nurse and EMT. Case management and phone call follow up with self-care behavior tracking and a health information tracking system will be used by staff when the plan is implemented.

Nutrition focus is a part of the improvement plan. I include education and behavior changes presentations. I encourage healthy choices for contractors running the cafeteria and loading the vending machines. Signs should be posted in the cafeteria to encourage more fruits and vegetable servings. Vending machine contractors should be encouraged to add less sugar and more whole grains for choices.

An activity and exercise program are included by me and environmental modifications are proposed with supportive infrastructure such as walking trails with distance markers and improved fitness center activities and hours. Increasing availability to the fitness center and planning a walking fitness path, with measured distances are

included activities with a goal of promoting outcomes of decreasing overweight and obesity and chronic diseases such as pre-diabetes, diabetes, cardiovascular diseases and others. Incentives such as low cost pedometers or water bottles can be given to students to encourage participation.

A strategy to include stakeholders such as college health administrators is an integral part of the plan, in addition to presentation material for the stakeholders. A timeframe for the design, budgeting, and plan and an estimate for implementation is projected in the Gantt chart (see Appendix E1, E2; Figure 4 & 5). The project includes planning only, includes a projected timeline, and does not include implementation and evaluation due to several year implementation processes of including in strategic initiatives of the institution, and allocation of funding.

Section 4: Findings and Recommendations

Introduction

Community health assessments leading to community health plans are done by researchers in counties, states, and nations (Healthy People 2020, 2010). Metrics are compared by research analysts and health disparities are identified. Colleges are beginning to integrate and compare their data into the health determinants data collected by other researchers in the surrounding communities and countries. However, there is progress to be made to fully integrate college health into population health progress in other areas such as acute care and community public health. In this section, I will explain the findings and recommendations of the CHIP.

Gap-in-practice purpose

The problem that I focused on was the lack of a college community health improvement plan for a 2-year nonresidential college, and a deficit of research in the topic area. Health planning research is limited for 2-year colleges although it is abundant on the topic of 4-year residential colleges (Kattelmann et al., 2014). In the project, I design, develop, evaluate, and/or translate as well as disseminate scholarship that addresses an evidence-based need or problem in the focused area of practice, which is an essential of doctoral programs in nursing (Walden University DNP Manual, 2015). The current project fills a gap in the research and adds to the available knowledge regarding health planning in two year non-residential colleges.

The indicators of health that I focused on were nutrition and weight status, along with physical activity and fitness. I chose the indicators because obesity is associated

with many chronic diseases and subsequent health care costs (Fardet & Boiret, 2014). Nutrition, weight status, activity, and fitness are the indicators that influence obesity and subsequent chronic diseases with high healthcare costs (Fardet & Boiret, 2014). If healthy patterns of nutrition, activity and exercise are learned and reinforced in the learners twenties, healthy behaviors are more likely to be maintained (Bandura, 2004).

The practice question was: what were the current health promotion inputs and activities related to nutrition and weight status, as well as physical activity and fitness on the college campus in terms of environment, ecology, education, and policy? The second question was: what inputs and activities related to nutrition and weight status, as well as physical activity and fitness could be supplemented at the site to improve outputs and health outcomes? I answered the questions in terms of individual focus such as case management, decision support, and information system tracking, social focus such as group education and learning, and community focus such as resources and policy. The micro-level and meso level assessment were analyzed by me, and micro- and meso-level interventions were designed by me to construct a comprehensive system of health promotion with a focus on activity and fitness, and nutrition and weight status.

The PPM allows a researcher to use an approach that shows a process to look at unmet needs through a deductive approach after looking at what resources are available to promote and achieve health. Instead of assuming what is needed, analysis of existing resources is done by the researcher, and gaps are included in the recommendations for implementation to reach desired goals. The process allows for a more effective health redesign.

I used the logic model as a framework to define inputs, activities, outputs, and outcomes to align with national health promotion messaging. The model was used by me as an adjunct to the PPM because it incorporates a policy, systems, and environmental change strategy, which is appropriate for the plan. The CDC (2010) recommends the logic model for project planning because the model allows the researcher to use the systems theory concepts of inputs, process or activities, outputs, and outcomes as a basis for project planning (Kettner, Moroney, & Martin, 2013). The logic model flow shows the process of events in a project, and identifies the inputs, activities, outputs, and expected outcomes of the plan (Kettner, Moroney, & Martin, 2013). Even though the PPM is a type of logic model, Ottoson and Green (2005) adapted the original PPM to add logic model constructs. One reason for the addition of the logic model constructs was to break the components down so the components and process are obvious to all stakeholders.

The use of the PPM of assessment and planning has been shown by researchers to be more effective for health promotion than education interventions alone (Green, 1999). Green (1999) recognized that predisposing and enabling factors were important to promote and sustain change to meet health goals, but the factors were difficult to change in the primary providers' office. This is because the predisposing and enabling factors were more significant when assessed and changed in the community setting where the patient spent time (Li et al., 2009). The change to assess and add factors which enhanced health and change behavior is the significance of this project, and why the project can impact social change.

Sources of Evidence

The sources of evidence were a literature review, American College Health Association data, Healthy Campus 2020 data, and assessment evidence using the PPM, including observation of the site and key informant interviews by me. The PPM was used by me as the overarching assessment and planning framework.

Data source one; Integrated review. The integrated review including different types of research methodologies based on the framework by Whittemore and Knafle (2005) was the method I used. The different types of research included were quantitative, qualitative, mixed method, and theoretical literature. The data were collected by me primarily for the site's quality improvement (QI) purposes with my doctoral capstone as a secondary purpose. I used the research data generated by ACHA (2016) and Healthy Campus 2020 (2016) in addition to the integrated review to prioritize the determinants of health used, and to clarify the objectives and goals for program planning.

Data source two; observation of site. Observation of campus took place by me to see what, if any, environmental, ecological, or educational initiatives or opportunities exist. I observed environmental and ecological resources on grounds, campus maps, buildings such as gyms and fitness centers, and athletic fields. Observation included educational activities, fitness activities, and health promotion information at the site.

Data source three; key informant interviews/ focus groups. The data to supplement the Healthy Campus 2020, ACHA, and integrated review of the literature was obtained by me by using the PPM, key informant interviews and focus groups involving four to six employees. The focus group was formed and discussions and key informant

interviews provided the information desired for the behavioral and environmental risk factors, the education diagnosis (predisposing, enabling, and reinforcing factors), and resources (policy and organizational) for health promotion initiatives historically and currently. I was the moderator for the focus groups. Notes were taken by me during the answering session. Participation was voluntary and no incentives were used.

The small group sessions and informant interviews allowed me to consult with the college employee community to investigate, understand, and analyze information to create interventions. Li et al. (2009) interviewed key informants to find information regarding health promotion resources to design and construct a health promotion plan in China. To understand and analyze the context of the health issue, consultation with key members of the community took place in the Li et al research (2009).

The process of working with the project team included meeting several times in small groups with me in a question and answer session to discuss the educational, environmental, and policy initiatives related to physical activity and fitness, and weight and nutrition. The question I asked in the key informant interviews was: what are the college's environmental, ecological, and environmental initiatives and resources currently and in past years?

The PPM process included an assessment consisting of available data, literature review, and an ecological, environmental, and educational assessment of the site resources currently available. In addition to an integrated review of the literature, observation of the site and key informant interview information was performed, obtained and included by me because of the investigation and assessment. Phase one, two, three

and four of the PPM made up the assessment portion of the process that obtained evidence. Phase one is social assessment, phase two is epidemiological assessment, phase three is educational assessment, and phase four is administrative and policy assessment, when following the PPM process.

The assessment portion of planning the health promotion project was necessary for me to discern what was needed in terms of resources and future implementation planning. The assessment was done by me working backwards, starting from the desired outcome, and assessing what was needed to reach the outcome. More specifically, what input and activities are necessary as predisposing, enabling, and reinforcing constructs to facilitate generation of output that lead to the desired outcomes? What are the unmet needs of the community that prohibit reaching the project goals?

Phase one social assessment

In the phase one social assessment, I investigated what the population needs to reach health goals (Community Toolbox, 2017). In the investigation, I incorporated the survey research previously done by ACHA and Healthy Campus 2020 (2016) on the college health population, in addition to an integrated review of the literature to identify and prioritize determinants of health. The Healthy Campus 2020 data and literature review were available to the public for use on internet without permission, and free of charge. The determinants of health of weight and nutrition, as well as physical activity and fitness were the foci of the assessment I used, based on review of the literature showing correlation between the behaviors and many chronic diseases (Fardet and Boiret, 2014).

Phase two epidemiological assessment

I used The Healthy Campus 2020 (2016) as a source of data for the epidemiological assessment which identifies the health determinants of the identified problems and set priorities and goals (Healthy Campus 2020, 2016). I identified behaviors and environmental factors related to the health problems and solutions. The determinants of health that I used were weight and nutrition, as well as physical activity and fitness. In the phase two epidemiological assessment, I included the health assessment and the behavioral and environmental assessment components, which were determined by data collection, analyses, and integrated review using the ACHA (2016) data and Healthy Campus 2020 (2016) determinants of health and focus group interviews.

In addition to the previously collected data from ACHA and Healthy Campus 2020 data, in the review of the literature I included a comprehensive search of all available, full-text published literature in English from the search tools and databases available through Walden University and the internet. The articles selected for review reported research related to health needs assessment, health promotion and improvement plans, and college health. I obtained articles and reports through a search of PubMed, and CINAHL by scanning reference lists from retrieved references, and through expert identification. In CINAHL and MEDLINE, I used the following search terms: *quality improvement, organizational change, college health, community health needs assessment, community health improvement plans, indicators,* and *determinants*.

Epidemiological assessment. The first part of phase two was the epidemiological health assessment. The health assessment was identifying and prioritizing the health determinants of the problem, and setting goals (Green & Kreuter, 2005). The data showing obesity and inactivity as a problem had been entered the Healthy Campus 2020 database and analyzed by the group of contributing researchers. The desired outcome results are 10% improvement in number of students meeting recommendations for activity and fitness and nutrition and weight (Healthy Campus 2020, 2016).

Behavioral and environmental assessment. The second part of phase two was the behavioral and environmental assessment, which included observing and investigating behavior related to health within the environment.

Behavioral assessment. The data for phase two, behavioral assessment was determined by the researchers contributing to Healthy Campus 2020, ACHA and by my integrated review of the literature. Observation of campus site was done by me. Socio-environmental influences were observed related to the indicators of exercise and fitness, as well as weight and nutrition. Observations were made by me concerning environmental resources on grounds, campus maps, buildings such as gyms and fitness centers, and athletic fields. The college environment can enhance, enable, and reinforce the messaging and initiatives that the patient's health providers encourage in the primary care setting.

Environmental assessment. In the environmental assessment, I supplemented the literature review from the behavioral assessment, and I obtained information from observing the campus site and information gathered from the project team, i.e., the focus

group of five employees. The project team was made up of administrators, facilities personnel, and student services branch management personnel. The team was recruited by role by me per department they work in, and key informant interviews or team meetings were held depending on need to share expertise and feedback.

I asked questions to the focus group members on the topic of physical activity and fitness. Relating to what environmental options for physical activity and fitness, such as exercise rooms or outdoor trails are currently on the campus, and what has prevented access to the existing opportunities. In addition, what would expansion of opportunities consist of and what, if any, deterrents exist?

The discussion about the indicator of weight and nutrition allowed me the opportunity to ask the following questions: What is the availability of fruits and vegetables on campus? What might be preventing or deterring students from eating five servings a day? When the cafeteria is closed, are there any fruit or vegetable options in the vending machines?

In phases three and four, I also used observation, key informant interviews and focus group discussion to investigate educational, ecological, administrative and policy resources available and in use. In the small group sessions and informant interviews, I consulted with the college employee community to investigate, understand, and analyze information to understand the context of the issue and to create interventions.

Phase three educational and ecological assessment

In the phase, I determine factors which contribute and facilitate health (Community Toolbox, 2017). Observation of educational resources and opportunities,

and key informant interviews were used as assessment tools for the phase. The focus groups were asked whether the college had types of educational and ecological health promotion initiatives and resources currently and historically.

Educational assessment. Education resources would allow the patient to learn why behavior is important, and environmental changes would show and enable the patient how to sustain the change. The discussion about the indicator of weight and nutrition allowed the opportunity to ask the following questions. What educational opportunities have been in place? What type and frequency of educational initiatives have been made available by the college? Who led the initiatives? What educational opportunities has the college offered in the past? Observation included educational activities, fitness activities, and health promotion information and activities at the site.

Ecological assessment. In the ecological assessment, I included observing, investigating and analyzing behavioral and environmental determinants that predispose, reinforce, and enable the behaviors and lifestyles of the population for the data collection. Through the constructs of predisposing, enabling, and reinforcing behaviors, the learner can be more motivated, can engage in the activity and nutrition, and therefore, potentially sustain the behavior (Green and Kreuter, 2005).

Predisposing factors. Predisposing factors include cognitive components such as knowledge, attitudes, beliefs, values, perceptions, and self-confidence (Sjostrom et al., 1999). What predisposes persons to want to be healthy? Examples of predisposing factors are health education, reinforcing message of primary provider, ability to afford a gym, time, safe availability for fitness in environment, family support, and health beliefs

support. Statements of "I want to do it because…" and I am going to do it because…" can lead to recommendations for health design.

Enabling factors. Enabling factors are the resources and skills needed to carry out the behavior (Sjostrom et al., 1999). What enables students and supports their self-care and management? Vending machine and food options access, activated patient, case management. availability of fitness options, and informatics management are examples of reinforcing factors.

Reinforcing factors. Reinforcing factors are the rewards and satisfactions people feel with the behavior (Sjostrom et al., 1999). The statement of "I want to keep doing it because…" can lead to recommendations for health redesign. Social reinforcement is an example of a reinforcing factor.

I investigated college grounds, campus maps, and athletic fields. The questions I asked in the key informant interviews were what college resources are found on the college grounds that have been or could be used for health promotion activities related to weight, nutrition, and activity and exercise? What reinforces our commitment to keep doing things that make us healthy?

Phase three analysis. The resources and opportunities I discovered in the focus groups were sorted into categories and educational and ecological factors. The factors were further sorted by me into predisposing, enabling, and reinforcing factors. To sort the constructs of predisposing factors, I considered whether the construct is knowledge, attitudes, beliefs, values, perceptions, or self-confidence. To sort the constructs into the category of enabling factors, I considered whether the factors were the resources and

skills needed to carry out the behavior. To sort the constructs of reinforcing factors, I considered whether the factors were the rewards and satisfactions felt with the behavior by answering what reinforces our commitment to keep doing things that make us healthy (Sjostrom et al., 1999).?

The predisposing, enabling, and reinforcing factors were assessed by me and subsequently designed in a sequential series to construct an ecological and educational environment that is more likely to allow, produce, and sustain health behavior and self-care. The sorting was part of the analytical strategy developed by Green and Kreuter (2005), and assisted in the development of the health care redesign.

Phase four administrative and policy assessment

Phase four is the administrative and policy assessment and interventional alignment. Key informant interviews and investigation of existing policies were the methods I used to collect data for the administrative and policy assessment.

Administrative assessment. Administrative investigation and questioning consisted of staffing structure of college health services. Case management availability was also part of my assessment. The questions I asked were, how often is the health staff available, and does the health services department have equipment for weight, BMI, and case management?

Policy assessment. Policy investigation and questioning consisted of health-related policy search on site website and policy administrator inquiry. The questions I asked to guide the search and questioning were what policies have to do with health at the

college?" I asked the questions to key administrators who are familiar with college policies.

Analytical strategies. I used the PRECEDE-PROCEED model for the overarching analysis of evidence for health program planning. I assessed present initiatives and resources at the project site, determined what was necessary to supplement existing initiatives and resources, and designed a plan to supplement existing efforts to reach desired outcomes. I completed an integrated review of the literature which provided assessment and analysis for phase one and two; social, health, and behavioral assessment. Observation of the campus site by me, the focus group discussions and key informant interviews provided the information desired for phases three, four; the behavioral and environmental risk factors, the education diagnosis (predisposing, enabling, and reinforcing factors), and resources (policy and organizational).

The environmental, ecological, educational, and policy assessments were performed by me at the two-year college campus. I placed the types of observed evidence of health promotion activities and/ or opportunities into three categories; pre-disposing, enabling, and reinforcing factors. The initiatives and opportunities I discovered were sorted into one of three groups mentioned; ecological, environmental, or educational. Additionally, the logic model constructs of inputs and activities were used by me to sort initiatives within the categories of ecological, environmental, and educational.

The desired outcomes for each determinant of health were defined at the beginning of the process. Priorities were determined per assessment using phases one through four of the PPM, and integrated literature review. Analysis of the socio-

ecological, environmental, and health promotion education resources assessment was performed by me to discern which components should be incorporated in a future college health improvement plan. In the final step of analysis, I discerned and identified where the gaps in educational activities and opportunities were, then I designed and constructed a wellness plan adding what was missing and necessary for health promotion enabling, reinforcing, and sustainability.

Conclusion. Assessment of policy documents of the partner site, integrated review, observation of campus resources, and information obtained from small group sessions of key personnel provided data and the assessment I needed to complete the analysis of the health problem, prevalence, and the educational and ecological diagnosis necessary for the PRECEDE portion of the project. The four phases of the assessment and analysis done by me provided information about availability of existing resources and health promotion gaps. The obtained information is reported in the following section.

Findings and Implications

The assessment from pre-existing data, literature review, and focus group interviews allowed the researcher to determine what was available at the partner site, and what could be supplemented to design a comprehensive health promotion plan to support and enable health messaging in other community initiatives, and to achieve desired outcomes for population health. I used the PRECEDE-PROCEED framework for analyzing and planning, along with the integrated literature review and data from Healthy Campus 2020 guided the project discovery and subsequent planning (Green & Kreuter, 2005). In the four phases of program planning, I included the delineation of predisposing

(P), reinforcing (R), and enabling (E) constructs (C) in educational(E) diagnosis (D) and evaluation (E) The acronym PRECEDE is constructed by the beginning letter of the roadmap. The constructs included in PRECEDE allow for determining what outcomes are desired, and analysis necessary to achieve a plan to guide activities, education, and environmental planning to achieve advancement toward desired goals (Green & Kreuter, 2005).

Phase one social assessment findings and diagnosis. Phase one is the social diagnosis. The social assessment in phase one determined the social problems and needs of the college population and I used the data collected by ACHA and compiled by Healthy Campus 2020 (2015a). The social assessment generated by ACHA survey data sets from 2010 includes information from the participating IHE's and the analyses shows the prevalence of obesity, overweight, and inactivity in the college population (ACHA, 2016).

Findings. The ACHA and Healthy Campus 2020 data referring to the determinants of nutrition and weight status, as well as physical activity and fitness are displayed on table one and two (see Appendix D1).

The baseline percentage of students who reported being at a healthy weight in 2010 was 61.6%. Healthy weight was defined as a body mass index (BMI) of 18.5-24.9. In addition, the baseline percentage of students who were obese was 11.6%. Obesity is defined as a body mass index (BMI) > to 30. For the nutrition data, baseline percentage of students who eat five servings of fruits and vegetables per day was six percent in 2010. Table 2 (see Appendix D2) shows baseline data for physical activity and fitness.

The baseline data for students who report meeting federal guidelines for physical activity and fitness was 48.7% in 2010 (Healthy Campus 2020, 2015a). Federal guidelines for aerobic physical activity is defined as engaging in aerobic physical activity of at least moderate intensity for at least 30 minutes on five or more days per week or vigorous intensity for at least 20 minutes on three or more days per week (Healthy Campus 2020, 2015a). The baseline data for percentage of students who report meeting federal guidelines of muscle strengthening exercises per week was 37.6% in 2010 (Healthy Campus 2020, 2015a). Federal guidelines for muscle-strengthening activity is defined as performing muscle-strengthening activities on two or more days of the week (Healthy Campus 2020, 2015a).

Phase two epidemiological assessment findings and diagnosis. For phase two, the epidemiological assessment and diagnosis, including behavioral and environmental diagnosis, an integrated review of the literature, key informant interviews, and observation of campus resources related to health behaviors were completed by me.

The first part of phase two, I identified the health problem and desired results, which are also defined in Healthy Campus 2020 (2015a). The nutrition and weight status, as well as physical activity and fitness determinants of health were chosen by me as a priority because of their association with many chronic diseases and high healthcare costs (Fardet and Boiret, 2013). The determinants were also chosen by me because of changeability with behavioral interventions.

The desired results for weight status are a ten percent increase by 2020 in the percentage of students who are at a healthy weight as defined in Table 3 (Appendix). An

additional objective for weight status is to decrease the percentage of obese students by ten percent by 2020 (Table 3, Appendix). The objective for nutrition is to increase the percentage of students who self-report eating five or more servings of fruits and vegetables a day by ten percent during the years between 2010 and 2020 (Healthy Campus 2020, 2015a; Table 3).

The desired results for physical activity and fitness are a ten percent increase of students who report meeting current federal guidelines for aerobic physical activity. Likewise, by 2020, an objective is to increase the proportion of students who report meeting current federal guidelines for muscle-strengthening activity by ten percent. The determinants of nutrition and weight status, in addition to physical activity and fitness were chosen by me after an extensive literature review correlating obesity to chronic diseases (Fardet and Boiret, 2013).

Interviews consisted of asking key employees to point out the resources in the campus environment that potentially affect weight and nutrition status behaviors. My observation included looking for behavioral resources, evidence related to health and fitness, and environmental factors contributing or lacking. Questions I asked to the focus group members gave an opportunity to investigate which environmental opportunities and resources enabled, reinforced, or restricted weight, nutrition, physical activity, and fitness.

On the topic of physical activity and fitness, I observed environmental options for physical activity and fitness, such as exercise rooms or outdoor trails are currently on the

campus. I asked what has prevented access to the existing opportunities, what would expansion of opportunities consist of, and what, if any, deterrents exist?

The discussion about the indicator of weight and nutrition allowed me to ask what was the availability of fruits and vegetables on campus and what might be preventing or deterring students from eating five servings a day. In addition, are there any fruit or vegetable options in the environment such as vending machines or local stores when the cafeteria is closed?

Behavioral findings. Socio-behavioral findings I compiled were that students came in for class, but did not stay to live because there are no dorms on campus. Students may or may not be matriculated in a degree as there are a higher number of students just coming to take a class or two, or non-credit continuing education programs such as culinary. The campus is spread out on many acres and some buildings are not connected, hence, students walk outside on paths and sidewalks to get from one location to another, including the cafeteria. My observation revealed that students are mostly sitting around campus with few activities available that require movement and exercise.

The site does not promote the availability of getting height, weight, and BMI done in Health Services, although equipment and trained personnel are available but limited. Students may not be aware of their BMI, therefore may not be influenced to change behavior. The lack of a vital health promotion wellness staff and program inhibit goal making and achievement. No established health learning objectives or goals are currently in use by health services. Since there is no current wellness program on the college campus, students may not be aware of specific health behaviors leading to improved

outcomes. No consistent evidence based guidelines are in use by health services for specific nutrition and exercise counseling. No literature is posted about nutrition and exercise. There are no student clubs for wellness or health promotion.

Environmental findings. The environmental findings regarding physical activity and fitness are there is a small fitness center with three treadmills, three stationary bicycles, four elliptical machines, and two universal weight machines. A full gym is adjacent to the fitness center. The limitations are student workers are used to staff the fitness center, and the hours are minimal, approximately 10-15 hours per week. At present, no athletic supervisor exists in the building. The gym is used for athletics, but no fitness or activity classes are offered in the space. Years ago, the college had outdoor basketball courts and tennis courts but none currently exist.

Athletics offers five sports teams, but the number of teams has decreased over the past several years. The areas are closed or not available for use most of the time because of lack of staff and oversight. The impediments lead to limited access to resources. There is an outdoor quad with walking paths to connect buildings, and an outdoor courtyard with concrete seats. Security patrol the area and the area is well lit.

A trail within a wooded area adjacent to the athletic fields had been in use and available for students several years ago. The trail had cleared paths which curved through a treed area and led back to the beginning of the trail where the person entered. The total length may be a half mile to one mile, but a measurement has not been taken. When in use in the past, exercise stations existed for stepping exercises, balance beams, pullup exercises, and other specific muscle strengthening opportunities. Plaques described the

exercise intended at each station. The trail is currently overgrown, not patrolled by security, and not promoted by the college.

The environmental findings regarding nutrition and weight status are there is a vendor under contract in the cafeteria space. The area is open nine to five on weekdays. A salad bar is offered with fresh fruits and vegetables. A satellite dining area is available in an additional building and is open weekdays with limited hours. Vending machines exist in proximity to every building; however, no fruit and vegetable choices are available in any campus vending machine. No restaurants or convenience stores are available near campus. An occasional delivery of a box of fruits and vegetables pre-ordered and delivered to the campus is a recently begun resource.

Health services are housed in the gym building, which is at a distance from other buildings. Signage is non-existent for Health Services outside the building, and a small sign is on the door of the office. Community wellness vendors are invited on campus periodically for various initiatives such as blood donation and mobile mammograms, but none related to the weight and nutrition or physical activity and fitness indicators of health.

The environmental diagnosis and implications are the college has health services and health resources such as gym and fitness center, but the limited access and staffing contributes to underutilization of existing resources. Evidence based nutrition and weight program are necessary. Some centrally located fruits and vegetable options are available, but are limited when cafeteria is closed or distant.

Analysis. Predisposing, enabling, reinforcing factors are different types of influencing agents used in the PPM (Green & Kreuter, 2005). The factors influencing healthy behaviors found during phases two to four were sorted by me into one of the factor categories and identified as having a positive influence or negative influence on behaviors (Ottoson and Green, 2005). Educational resources and initiatives have more influence on predisposing factors only. Additional initiatives and resources contributing to reinforcing and enabling factors, as well as predisposing factors are necessary for a more comprehensive health care redesign (Ottoson and Green, 2005). For the planning and construction of the healthcare redesign, I sorted the factors into the following categories, and constructs in all categories were assessed and recommended by me.

Predisposing factors. Predisposing factors are individuals or population's knowledge, attitudes, beliefs, values and perceptions that facilitate or inhibit health behaviors (Li et al., 2009). When a person is aware they are at high risk for disease, motivation to change behavior is influenced (Green & Kreuter, 2005). Health promotion education is a predisposing factor. Low self-efficacy related to not being aware of expected health behavior objectives are also predisposing factors.

The amount and availability of health services staff are a negative predisposing factor because work hours are allocated to activities other than health promotion. There are no established Student learning objectives (SLOs) which negatively predisposes the students to inadequate knowledge and understanding of optimal behaviors. Lack of health promotion negatively impacts awareness. The lack of an informatics management and

tracking system doesn't allow the user to have long-term recording and management of weight, nutrition, and exercise.

*Enabling factors***.** Enabling factors are the required skills, environmental resources to perform the behavior (Li et al., 2009). Enabling factors allow the person to participate in the health behavior. Li et al (2009) found that low accessibility to health promotion, poor quality of health promotion, and lack of school health promotion acted as negative enabling factors.

Physical activity and fitness enabling factors have been found by me at the site. The lack of exercise availability and fitness options are a predisposing factor that do not encourage exercise while on campus. The limitations are student workers are used to staff the fitness center, and the hours are minimal, approximately 10-15 hours per week. At present, no athletic supervisor exists in the building. A full-size gymnasium is a positive enabling factor. The gym is used for athletics, but no fitness or activity classes are offered by staff in the space. The low amount of allotted student worker hours to allow the fitness center to be open is an additional negative enabling factor. Sitting areas for students are plentiful but limited activity areas reinforce sedentary behavior. Limited time on campus is a negative enabling factor.

Nutrition and weight status enabling factors exist and are positive and negative. A cafeteria is available in one building, with a satellite lunch area in a different building. A salad bar is offered with fresh fruits and vegetables. The vending machines exist in proximity to every building; however, no fruit and vegetable choices are available in any

campus vending machine. No stores or restaurants are available within walking distance to the campus.

Positive enabling factors are support of the organization as they have requested a wellness plan. Health administrator support is available for health promotion. Administrative support exists from Facilities and planning VP college personnel who supports health promotion transition of existing space. In addition, support of a large hospital group exists and partnering collaboration exists by way of wellness group, employee assistance plan and athletic trainer contracts. Supportive partnerships between county health department and college health also exists.

Health services offers health promotion but services are limited, not very visible due to poor signage, and not well promoted. A health office on each campus exists with a scale, and intermittent staffing, with a low case management usage. The low amount of case management negatively enables perceived health need, low self-efficacy, referrals, and follow up. Subsequently, there is not data generation or tracking of behavior to evaluate results. The health professionals are credentialed, but a consistent health behavior coaching model based on evidence based practice is not in use.

Financial resources are limited for improvements. Nursing and allied health students enrolled at the college occasionally offer health promotion activities as part of their academic requirement, but not on a regular basis. However, no student club or group is in formation related to healthy campus behaviors.

Reinforcing factors. Reinforcing factors are the rewards and satisfactions felt with the behavior (Sjostrom et al., 1999). Socio-cultural factors are the consequences of

actions that determine whether the action is supported positively or negatively (Li et al., 2009). Incentives, rewards, visible results are also reinforcing factors.

The reinforcing factors specific to nutrition and weight status, as well as physical activity and fitness behavioral are weight loss, improved feeling of well-being and health, and curative treatment. Social reinforcements are time with friends in an activity and support from peers. Inconsistent use of evidence based guidelines between providers, small amount of linkage between care delivery and community programs, and limited participation, student visits for health promotion are negative reinforcing factors.

The low amount of case management is a negative reinforcing factor. Case management results, when implemented, are improved decision making, monitoring, and self-care which are positive reinforcing factors. The reinforcing encourages the person to sustain the behavior.

Phase three educational and ecological [organizational] assessment findings and diagnosis. The educational offerings to instruct about the health determinants of nutrition and weight status, as well as physical activity and fitness, were assessed by me. Observation by the focus group and me, or key informant interviews were the data collection methods. The focus group participants were asked questions by me regarding the educational offerings the college offers to instruct about obesity, nutrition, physical activity and exercise.

A health class which included health promotion had been in place until last year, but is not currently available. A Health Services office is available but not used frequently for health promotion. Limited access to health services exist because of poor

signage, poor visibility, distant location, and inadequate staffing. One nurse is full time split between three campuses, and a part time health assistant is available fifteen hours a week. Case management for health promotion is currently offered by health staff, but not well publicized or utilized. The negative educational factors are lack of awareness which leads to poor quality of health promotion activities, poor accessibility to health knowledge, minimal case management and behavior education.

The college does not have an active wellness plan. In the past, the health services hosted health fairs with community vendors such as HIV testing and mobile mammography. However, a comprehensive in house wellness and health promotion plan was not actively in place. There was some health promotion education during health fair days but not regularly or widely disseminated by staff, or available. Lack of wellness staff contributed to inability to provide health promotion education and activities.

There are eight health bulletin boards with occasional postings available for health promotion awareness and publication of health events. Flyers are distributed on student day and Earth day about health, activity, and nutrition. An active Health Services web site exists. Student nurse groups offer occasional health initiatives during the school year as part of the academic requirement. A Health Professions Institute department allows students to offer health promotion activities a couple times a year. The college had offered a health class in the past, but does not now.

If the population does not know the association between the determinants and chronic health, the need to change behavior may not be prevalent (Li et al., 2009). In addition, a supportive environment will enable persons to incorporate healthy lifestyle

into the day. Educational and organizational diagnosis is a primary step to assess both parts and plan health promotion per actual needs, not perceived needs.

Phase four administrative and policy assessment findings and diagnosis. Administrative initiatives and policies that encourage enforce, or influence behavior and lifestyle were identified and evaluated to discern whether the policies encourage or discourage interventions to reach objectives and desired outcomes. Administrative diagnosis consisted of the following inquiries. Who has wellness and health promotion in the job description? Who oversees and staffs the Health Services department? What reinforces or impedes wellness initiatives regarding administration and policy?

The missions of the college incorporate safety but no mention of health was found by me. The mission and strategic initiatives does incorporate support services under an objective, which is an indirect reference to health services as a student supportive program. There is no student health committee. There is very limited student health data generated by institutional research, and no health needs assessment exists.

Health Services are housed in the same building as the gymnasium and fitness center, however, the department does not have oversight of the fitness facilities, nor does health services staff the facilities. Presently, the college does not have an assistant athletic director, or administrative oversight in the same building as the fitness center. Administrative decisions to designate a low amount of student worker hours to allow the fitness center to be open are a negative enabling factor. No state regulation mandates physical education class at the college level. No classes are offered for muscle strengthening or physical activity opportunities. No bicycles or skateboards are currently

allowed on campus except for on the campus road, and Security personnel enforce the policy. The policy has been in place since the school opened in 1960.

Health staffing is limited to one full time registered nurse and one part time emergency medical technician, with a multi-departmental Dean. No primary provider is employed by health services and no formal evidence-based procedures are written. The health personnel are in the office approximately 30 hours a week. Health staff has other safety and compliance obligations. The two staff are expected to travel between three campuses in two counties.

Health services staff have support of the organization as the administrators have requested a wellness plan. Health administrator support is available for health promotion. Administrative support exists from Facilities and planning VP college personnel who supports health promotion transition of existing space. In addition, support of a large hospital group exists and partnering collaboration exists by way of wellness group, employee assistance plan and athletic trainer contracts. Supportive partnerships between county health department and college health also exists.

There is currently no college health promotion policy. There is currently no grant funding for health promotion. I considered factors that prohibit change and found that finances deficit had a negative impact on project goals.

The compilation of assessments and investigations were reviewed by me to discern whether the desired and intended change could be expected with the available resources. After I completed the assessment and analysis, I defined the health program plan and interventions, so implementation can be requested. I formed the interventional

alignment based on theory, health planning models, assessment and diagnosis completed in the PRECEDE phases.

The innovative care for chronic conditions (ICCC) model and Bandura's social-cognitive model and self-care theory were the relevant theories I used to explicate the education and behavior change activities of the students, as well as sustainability of the behavior change. The ICCC was the overarching framework I used to restructure care delivery. I used Bandura's Social-cognitive theory as the framework for the educational initiatives. Self-care theory was used by me to design case-management for sustaining learned behaviors. Since the educational portion is not enough, the planning includes provision for students' behavior change and self-maintenance. The triad of theories and models are essential to provide a comprehensive program.

Planning phase. In the planning phase, which is the design interventions, I recommended how to organize and conduct the intervention. In the phase, I provided information on what the plan is intended to be, and what are the gaps between what is planned and what is occurring (Green & Kreuter, 2005). In this section, I specified the PROCEED constructs of policy (P), regulatory (R), and organizational (O) constructs (C) in educational (E) (D) diagnosis (Green & Kreuter, 2005). Evaluation (E) recommendations will take place in subsequent phases and will not occur in the current project, although methods are recommended by me.

The PROCEED portion of the roadmap is an acronym for policy (P), regulatory (R), and organizational (O) constructs (C) in educational (E) and environmental (E) (D) development (Green & Kreuter, 2005). The PROCEED roadmap facilitates the

implementation and evaluation of the program (Green & Kreuter, 2005). In phase five implementations, which is the design intervention, I will begin the recommendations of the CHIP. Phase six, seven and eight follow, which include process evaluation, impact evaluation, and outcome evaluation suggestions (Green & Kreuter, 2005).

Interventional Alignment. After I accomplished the assessments and analysis in phase one through four, I designed the intervention strategy using the ICCC model components as a theoretical framework. I designed the interventional alignment by using the ICCC model for chronic care management (Epping-Jordan, Pruitt, Bengoa, & Wagner, 2004). The ICCC model includes micro, meso, and macro levels of care or intervention. The micro level is the individuals and families care, the meso level is the community and healthcare organization, and the macro level is policies and resources (Epping-Jordan, 2004). The triad of the three levels leads to better outcomes for chronic conditions (Epping-Jordan, 2004; Figure 3, Appendix). I used the constructs of the model in strategic locations such as the educational recommendations when building the framework of the plan.

The ICCC model includes health systems and community resources optimization through utilizing clinical information systems for managing and tracking populations, decision support that is collaboratively based, delivery system design that insures individual case management with goal attainment/assessment/reassessment and outcomes evaluation as a core practice, and enhanced self-management support that tailors' decisions, interventions, and evaluation on an individual basis (Epping-Jordan, Pruitt, Bengoa, & Wagner, 2004). The ICCC model is designed to support health progress by

providing a roadmap for continued health progress and improved outcomes, not just support treatment of disease ((Epping-Jordan et al, 2004). Bandura's social cognitive theory and the Self-care Model encourage an active student as agent for individual behavior which enhances sustainability, and normalization through group behavior (Bandura, 2001; Riegel, Jaarsma, & Stromberg, 2012).

The organization of healthcare in the ICCC is based on the CCM and contains four essentials which are self-management support, delivery system redesign, decision support, and clinical information systems (Epping-Jordan et al., 2004). The four essentials take place within the health system, and community, resources and policy are incorporated in the model (Epping-Jordan et al., 2004). The ICCC is a three-part partnership comprised of the patient and families, healthcare team, and community partners (Epping-Jordan et al., 2004).

The determinant targets the researchers designed in Healthy Campus 2020 (2016) were aligned by me with the interventions put forth in the ICCC model for chronic care. The predisposing, enabling, and reinforcing factors I assessed in the PRECEDE phases were used by me to form the health strategy action plan, capacity building, environment improvements, reinforcement strategy, and policy plan. The framework allows the researcher to build a more comprehensive base to build healthcare design to improve outcomes (Epping-Jordan et al., 2004).

The recommended implementations and evaluation procedures are described in sufficient detail that administrative decision makers can assign and supervise them without further planning. Policies and practice guidelines are identified and described by

me so the CHIP can be easily understood. Future health improvement projects can then take place to improve quality outcomes.

Recommendations

Introduction. The factors found in the assessment leading to improved health outcomes are modifiable and modifications can enhance the health promotion effort. A participatory health design with clear objectives, clear predisposing, enabling, and reinforcing factors, and best practices, resources, and policies have proven successful in past redesign initiatives (Ottoson and Green, 2005). The recommended solutions that address the gap-in-practice, as informed by the findings above are explained by me in detail next.

Policy (P) recommendations. I based policy and administration recommendations on the assessment and findings in phase four. I compared the findings to the desired outcomes and gaps were identified. The recommendations were designed by me to fill the gaps in policy and administration.

Administrative recommendations I propose are to reference health along with the safety and incorporate into the strategic mission of the college. Health promotion policy and formation of health promotion committee can be at the discretion of the implementing site. Policies that prohibit bicycle and skateboard riding on campus should be reviewed by administration to consider the benefits to health versus the risks. Institutional research should be encouraged by administrative leaders to gather more health data for analysis and subsequent improvement purposes.

Regulatory (R) recommendations. Regulatory recommendations consist of external and internal regulations related to health. The college has regulatory oversight of health services; however, state nursing laws dictate the scope of practice of a licensed nurse and health assistant who staff college health. No other outside funding sources or governing bodies exist, although grant funding could change that dynamic.

To increase funding for health promotion, college grant writing personnel should apply for appropriate funding to increase financial resources annually. The college should continue to grow support from administrators within the college and stakeholder partners within the community. Partnerships should be developed in alignment with strategic health initiatives to improve outcomes for the college population.

College business office has contracts with vending companies for the machines. Vending contract should require fruit and vegetable options to be stocked in the buildings' machines that are a distance from the cafeteria building, and within the cafeteria setting as well. The requirement would assure availability of fruits and vegetables during hours when the cafeteria is closed, and in remote buildings.

Organizational (O) Constructs (C) recommendations. Organizational recommendations are to implement an enabling environment to learn health promotion at the college which will empower students to develop knowledge, confidence, goals, and skills necessary to reach outcomes independently and with the support of the surrounding community. The priority is to increase health awareness, develop appropriate systems, and increase visibility and normalization.

Health Services should have oversight and access to the health and fitness facilities so the resources can be used for health promotion support purposes. Health staffing can be increased to encompass more wellness promotion hours, as budgetary constraints allow. Student worker hours should be increased for staffing of the fitness center, to make more hours available. Additional health promotion information sessions can be done by nursing and allied health students to disseminate student health learning objectives and encourage goal behavior.

Planned action would consist of more health staff and collaboration with student groups to provide awareness, capacity building, skills, and knowledge of knowing why the behavior should be adopted. College health provider appointments should be advertised to create access to case management. Information management systems are suggested for use to house data so students can continue using the resource to sustain self-care after college attendance is completed.

College health promotion of the availability of a body mass index assessment will establish that a student is at high risk to create a motivation to change behavior when indicated. When vital health promotion staff is added, goal making and objectives, in addition to goal behavior can be learned. Through the process, behaviors that contribute to obesity can be modified, sustained, and continued by the student through adulthood. The redesigning of healthcare is essential to reach the objectives.

Some health activities do not require licensed personnel. Since student workers have staffed the fitness center in the past, work study activity leaders can initiate and implement peer led sessions of physical activity, muscle strengthening, and appropriate

group initiatives such as walking hour, yoga in gymnasium, nature hikes, Zumba or aerobics class, t-ball games, or similar activities. Expansion of Student worker hours to allow fitness center to be open twelve hours a day or more would increase the accessibility. Athletic or health employees could staff the fitness center if organizational changes are implemented.

Student workers could also be depended on for publicity. The workers, student clubs or volunteers will be trained to review and disseminate health student learning objectives (SLOs) in more populated areas of campus such as a vacant desk in registration hallway. SLOs will be described in the educational recommendations section in detail. SLOs and objectives promotional flyers will be posted on all bulletin boards and global emails will be sent periodically. Nursing students and Health Professions Institute students have health promotion activities assigned for curriculum completion and community volunteer service for their resumes.

Educational (E) recommendations. The educational (E) initiatives of the PPM are predisposing factors of health behavior and are based on Bandura's social cognitive theory and self-care model (Bandura, 2004; Epping-Jordan et al., 2004). The theory postulates humans are agents over their own health, intentionally making things happen by one's actions (Bandura, 2000). Core features of human agency are intentionality, forethought, self-reactiveness, and self-reflectiveness (Bandura, 2000). Collective agency, therefore is a shared group belief to produce desired results (Bandura, 2000).

To expect students to be agents over their health, the students must be intentional, have forethought, self-reactiveness, and self-reflectiveness. To be intentional, knowledge

of goals and how to reach desired results should be learned. For this reason, learning objectives to reach desired and intended results are an essential component for individual and group learning.

ACHA (2016) encourages colleges to incorporate student learning objectives (SLO) into all areas of college life in addition to the classroom. A Student Learning Outcome (SLO) is defined as levels of knowledge, skills, and abilities that a student has attained at the end or because of his/her engagement in a set of collegiate experiences (ACHA, 2016d; Ewell, 2001). A Student learning outcome can sometimes refer to a written statement that denotes what students should learn, the intended learning goals for students, from participating in student affairs programs and services. (ACHA, 2016).

Throughout the college process, SLOs can be utilized by staff to develop learning in nutrition, weight, physical activity and fitness. SLOs can also be assessed by staff intermittently by institutional research for quality improvement purposes to monitor student knowledge (ACHA, 2016). SLOs reflecting the objectives in Healthy Campus 2020 (2015b) are used in health promotion for the plan. The student learning outcomes were incorporated by me into wellness case management and aligned with HC2020 objectives.

The SLOs for nutrition and weight are:

1. Student will be able to verbalize how to check height and weight, and calculate BMI.

2. Student will verbalize importance of eating five servings of fruits and vegetables a day.

The SLOs for physical activity and fitness are:

1. Student will verbalize understanding of recommended amount of daily and weekly physical activity of moderate intensity and of high intensity.
2. Student will be able to define muscle-strengthening exercise and amount recommended by Healthy Campus 2020 (2016).

Information alone about the determinants of health is unlikely to produce desired outcomes, and only affects the predisposing factors (Green & Ottoson, 2005). Enabling and reinforcing factors are essential to produce a comprehensive healthcare redesign (Green & Ottoson, 2005).

Health professionals are necessary to implement the educational portion of the plan. An inadequate amount of staff could hinder the health promotion education offerings and could impede progress towards quality outcomes. Volunteers can be trained to educate students and community health staff can provide the educational piece (Li et al., 2009). Partnerships and affiliates within the community can organize and fund programs within the setting (Li et al., 2009). In addition, consideration should be given by administration to offer an academic course on health determinants and improvement.

Requests should be placed into the strategic initiative for the coming years to allocate funding for increased health staff. This increase in staffing could generate health education seminars, wellness initiatives, and case management to support self-care. The educational seminars are necessary for the social learning I recommend and are based on

Bandura's Social Cognitive theory. The wellness initiatives can support the educational messaging to the students.

Since most college age students between the ages of 18-24 and beyond are engaged in social learning in the college setting, the question of who and who with can be answered if group health learning and activities are offered. The group learning in the project recommendations will take place in student activity groups, then each student activity group can pick an activity that is most popular in the group. For instance, one student activity group might endorse a session on physical activity and fitness, then attend a dance class together. Likewise, another group chooses a similar group learning session on physical activity and fitness, then offers a walking club.

Encouraging student activity clubs to each promote education on activity or nutrition initiatives will encourage diversity in initiatives offered, and a sense of belonging while participating. The group activities will provide the peer social support necessary to promote and sustain the behavior through collective agency. In addition, learning and adopting healthy behaviors at a young adult age increases the likelihood of sustaining the likelihood of the behaviors over a lifetime (Bandura, 2004). Case management with the use of the self-care theories bridges the gap to sustainability.

Enabling factors (E). Enabling factors are the resources and skills necessary to perform the tasks, such as time, fitness center opportunities, and other ecological factors that allow and support participation in activity. The student skills necessary are comprehension of the SLOs and ability to accomplish the activity and nutrition recommendations. Case management using the ICCC model is recommended by me to

build on the educational initiatives. The health care redesign using evidence based decision making and case management as a resource will comprise a vital effort and will enable students to build skills to reach goals. The ICCC model using the CCM constructs of health system redesign, case management, clinical information systems, and community support and referrals were used by me as a framework for guiding the recommendations for the objectives of activity and exercise, as well as weight and nutrition.

The health care redesign for the indicators of weight and nutrition are an established format of individual assessment, case management, use of information system for tracking, and follow up and referral to community resources. The evidence based planning incorporated the following health provider format for each student. Each student requesting a weight and nutrition assessment will visit college Health Services to be weighed, measured, and have the BMI calculated. BMI range of underweight, normal, overweight, or obese will be reported to the student, and goal range will be determined. The provider will educate and demonstrate to the student the informatics database to input the assessment. Referral to primary care provider will be made by the college health provider if necessary for overweight, obese status, or for annual physical. A follow up appointment will be made. In a follow-up appointment, the same process will occur in addition to measuring progress by reviewing current and past weights.

Nutrition will be reviewed by the health provider per Healthy Campus 2020 (2015b) recommendations. The student learning outcome for nutrition will be to eat five

or more servings of fruits and vegetables a day. Personal informatics tracking will be reviewed by the provider, and self-care and maintenance will be encouraged.

Case Management. Case management is a reinforcing factor. The educational SLOs learned by the students will promote behavior change and students will be monitored by case management by health services staff in the form of in-person office visits, follow-up phone calls, and health information system tracking. The goal is to increase the percentage of adults who receive weight, height, BMI, nutrition guidance, activity and exercise information, follow up, and informatics accessibility and storage of data to follow trends and results.

The case management provided in college Health Services will include weighing, BMI assessment, goals formulation and monitoring, nutrition counseling, physical activity and fitness education reinforcement, self-assessment, informatics management support, and self-care instruction and recommendation. The case management will be based on the indicators from Healthy Campus 2020, Bandura's Social Cognitive theory (2001), and Self-Care model (Riegel, Jaarsma, & Stromberg, 2012).

The recommendations for case management are:

1. Explain the student learning objectives and ask for teach back or repetition of student learning objectives.
2. Discuss student role and have student input and access data in the information tracking database. Review database with student.
3. Assess weight, height, and BMI. Review results.
4. Point out relationship between obesity and chronic diseases.

5. Instruct and review use of database. Have student input results to encourage self-maintenance.
6. Reiterate student self-care in terms of physical fitness, muscle-strengthening exercises, nutrition and weight per Healthy Campus 2020 (2016) student objectives.
7. Ask what steps the student will take to continue eating habits and exercise program, and discuss strategies for overcoming obstacles.
8. Encourage follow up for case management and continual evaluation, especially in overweight and obese population.
9. Disseminate written recommendations, including referral to primary care provider when necessary.
10. Inform of college resources for health promotion, and community resources per hometown and accessibility.

Self-management should be emphasized by the provider during the case management sessions and interventions. Health care services are expensive and focused on medical treatments. To prevent expensive services from occurring, healthy behaviors and self-care are important and are emphasized in case management by the provider. Bandura's social Cognitive Theory the Self-Care model for chronic diseases are recommended for use. The two theories are necessary to bridge case management by health providers to self-management by student.

Self-care model. The self-care model for chronic diseases includes self-care maintenance, self-care monitoring, self-care management (Riegel, Jaarsma, & Stromberg,

2012). The components of the self-care theory are essential for care of chronic disease management and prevention (Riegel, Jaarsma, & Stromberg, 2012). The attributes of reflective and sufficient self-care comprise the ideal combination for self-care (Riegel, Jaarsma, & Stromberg, 2012). The educational and case-management resources support the reflective and sufficient student patient by providing targeted knowledge and ability to make good decisions about their care. Self-care with reliance on evidence-based recommendations leads to improved health outcomes (Riegel, Jaarsma, & Stromberg, 2012). The final objective of improved outcomes by reflective and sufficient self-care are the essence of why the Self-care model is vital.

Bandura's social cognitive theory. Bandura (2004) endorses people to care for themselves to prevent illness. The theory has been identified in previous paragraphs as important in the educational recommendations of the project, but is also essential for use in the self-care management recommendations as well. The social-cognitive theory championed by Albert Bandura, PhD (2004) focuses on health promotion and disease prevention by social-cognitive means. The social cognitive theory uses the constructs of knowledge, perceived self-efficacy, outcome expectations, goals, perceived facilitators, and impediments (Bandura, 2004).

The use of the model and theory by the college health provider and the student enhances development of positive self-care abilities. The case management and self-care management discussion should contain student verbalization of current knowledge of health risks and benefits, perceived self-efficacy of health habits, outcome expectations of health practice, goals related to determinants, and the perceived facilitators and

impediments. The college health provider will reinforce and add knowledge, behavior expectations, solidify goals aligned with Healthy Campus 2020 (2016), and attempt to reinforce facilitators and minimize impediments to self-care.

Informatics Management. Healthy Tracker (2016) will be used to house the data, and the database access will remain available after college depending on the public domain decisions. Sustainability will be emphasized by the provider throughout the case management, and the provider will encourage continual participation in the recommendations.

Super Tracker is an informatics management program constructed by U.S. Department of Agriculture (United States Department of Agriculture, 2017). The program is accessible from internet and free of charge. Super Tracker (2016) allows users to input food, weight, exercise, and activity. Nutrition and education are components of the comprehensive health management plan (USDA, 2017). The web-based management program will be recommended in the project for several reasons. Since the two-year college is only a short time in the student's adult life, the student and group can continue to access the data after college attendance is completed. In addition, the government website is updated to allow for advancement of evidence-based recommendations to be included (USDA, 2017).

Food Tracker (2017) has six sections for use, plus more information on the web site. The food information section with a food drop down menu and enter space to add your favorite foods into, and the nutrition and calories are shown. The student and provider can track the food that is eaten and show if goals are met. The physical activity

tracker allows the student to input data of activity and interval reports of total activity with results, and whether goals were met. A weight management section is included. The remaining two parts are top five goals and group challenges. The goals and group challenges sections are consistent with the Healthy Campus 2020 (2016) determinants of weight and nutrition, and activity and exercise, and the social learning construct of the project. The group leader can reiterate the goals of Healthy Campus 2020 (2016) and use the determinant objectives for the college group. There is also a general plan available for use, although the personalized plan allows for student and case manager input.

In addition to the education components and case management, the site-specific recommendations for nutrition are for the provider to post signs in the cafeteria encouraging five or more servings of fruits and vegetables a day, and to encourage vendors to incorporate healthy snacks into the cafeteria and vending machines, to make options available in remote buildings. Produce snack box delivery from outside venders will be continued and encouraged by the provider.

The resources needed are a safe area to accomplish the fitness and muscle strengthening activities, and the nutrition availability of fruits and vegetables. The skills and resources that lead to healthy behaviors are recommended by me based on the environmental assessment of the site, phase three. The reinforcing factors are the incentives and rewards felt by the student when participating in the program.

The CHIP's recommended physical activity offerings insofar as dance sessions, aerobics, organized walks, group muscle strengthening exercises, and others will allow for group participation and socialization, and a pleasurable experience is the intended

benefit. The short- term benefit of a fun group activity will attract students as the outcome, since socialization and belonging in a group are motivators for the college age group. Socialization in the described learning- teaching process can assist the student in reaching a level of intended health conformity leading to sustained lifestyle outcomes (Child Development Institute, 2015). An additional motivator future implementers can use is earning a token, such as a chip for each successful activity or daily fruit and vegetable serving quota, and the chips can be spent on health prizes; much like earning tokens to cash in for prizes. Earning CHIP chips can be motivating and can provide positive reinforcement to reward desired health promotion behavior. The ability to earn CHIP chips will be a reinforcing factor in the PPM. The first chip will be given by the provider during an appointment to explain the program.

Since obesity is a major public health and individual health issue, creative interventions are necessary and must be individualized. Creative and cultural dance is a creative and culturally appropriate way to intervene and promote a more active lifestyle (Robinson et al., 2010). Ease of use is an important factor with activity promotion in lower socioeconomic populations because many do not have access to gyms, transportation, or safe neighborhoods to run around in. In addition, social engagement and group learning which is developmentally appropriate can be an attraction. Creative dance is an additional recommendation for activity in the health improvement plan.

Environmental (E) Development (D). Individual educational and behavioral initiatives have been discussed by me in detail. Environmental development is the last portion of the PROCEED model before implementation and evaluation (Green &

Kreuter, 2005). I have included resources necessary to carry out health behaviors in the environmental development section of the PROCEED portion.

For the nutrition and weight status determinants of health, environmental improvements to reinforce the educational components should be implemented by the implementing site. Signs should be posted in the cafeteria to encourage more fruits and vegetable servings in alignment with the publicized and instructed SLOs. Cooking for health demonstrations should be implemented as a joint venture between the culinary department and Health Services.

Increasing availability to the fitness center and planning a walking fitness path, with measured distances should be included by the implementer with a goal of promoting outcomes of decreasing overweight and obesity and chronic diseases such as pre-diabetes, diabetes, cardiovascular diseases and others. Incentives such as low cost pedometers or water bottles can be given to students to encourage participation.

Health services signage and awareness should be improved at the implementing site, with a goal of increasing usage. Community wellness vendors should be invited on campus periodically for more initiatives related to the weight and nutrition or physical activity and fitness indicators of health. The college has health services and health resources such as gym and fitness center, but the limited access and staffing contributes to underutilization of existing resources. The full gym adjacent to the fitness center is used for athletics, but fitness or activity classes should be offered in the space as well.

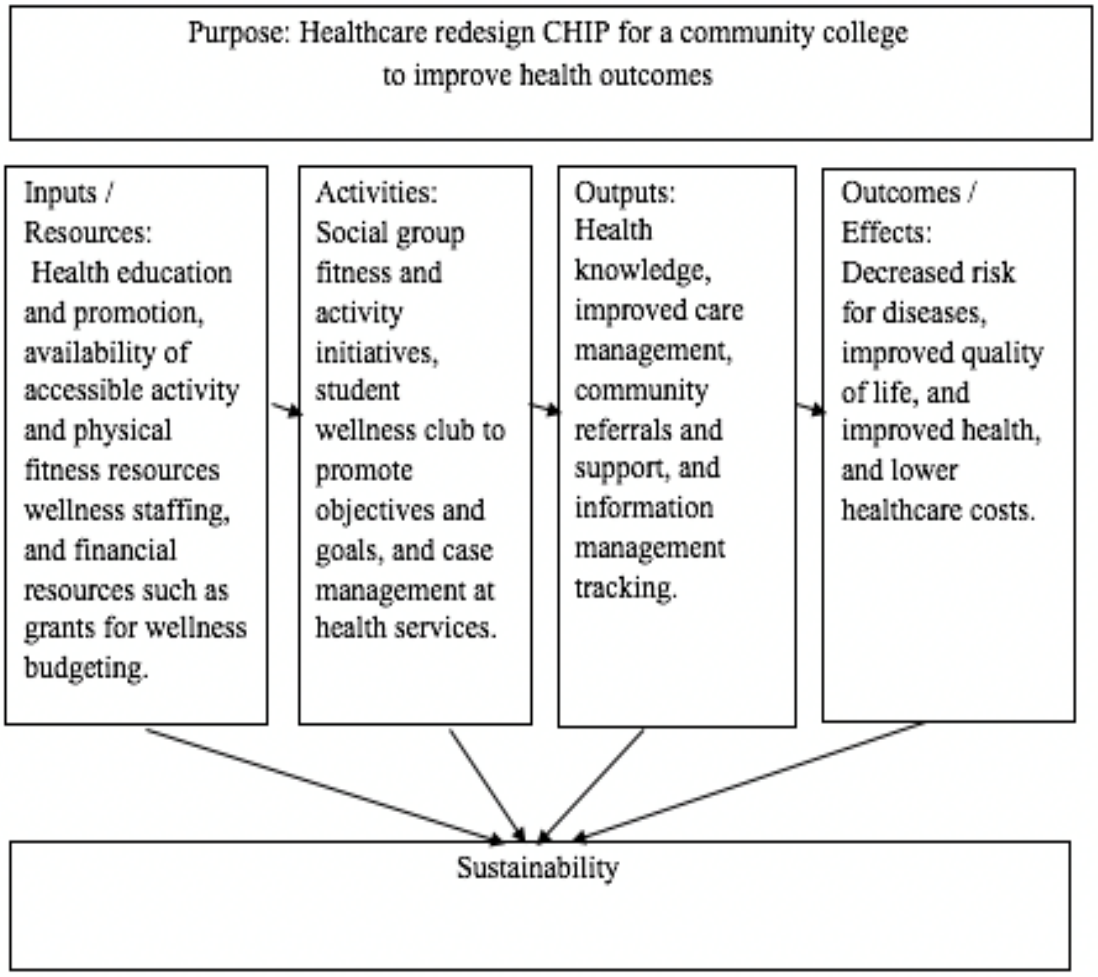
The outdoor quad with walking paths to connect buildings, and an outdoor courtyard with concrete seats should be more utilized. Construction is currently impeding

a fluent loop around the quad. After the new access roads and sidewalks are constructed, distance measurements can be taken and planning to consider the best walking path with distance markers should be implemented. Security patrol the area and the area is well lit currently; no improvements in security or lighting are needed.

A trail within a wooded area adjacent to the athletic fields that had been in use and available for students several years ago should be considered for current maintenance and further development. The exercise stations that existed for stepping exercises, balance beams, pull-up exercises, and other specific muscle strengthening opportunities should be considered for annual increments of funding improvements. Mileage markers and activity instructional plaques can be phased in as future improvements. Security staffing or faculty advisors should be made available during the hours at the trail site when students will be using the trail. The college might consider a student environmental group to support the initiative.

logic model. The model simplifies recommendations and expected outcomes into four distinct parts; inputs or resources, activities, outputs, and outcomes. The concept map provides a visual representation of the recommendations into the parts (Figure 4; Appendix). The representation allows stakeholders to obtain a snapshot of what is necessary to accomplish the goals.

Figure 4.1- logic model



Inputs / Resources. The inputs or resources I recommend are increased health education and promotion, availability of accessible activity and physical fitness resources, wellness staffing, policy inclusion in strategic initiatives, and financial resources such as grants for wellness budgeting. The inputs I recommend are educational, environmental, and regulatory, in alignment with the PPM (Figure 1; Appendix).

Activities. Social group fitness and activity initiatives are recommended by me, a student wellness club to promote objectives and goals including inclusion of wellness into all student groups. Case management at health services is an additional activity and will be evidence-based and per the ICCC constructs.

Outputs. Increased health knowledge, improved care management, community referrals and support, information management tracking, and self-care will be the potential and expected outputs. The outputs are components of the ICCC, and are expected at the patient and family level, community level, and healthcare system level (Figure 3; Appendix).

Outcomes / Effects. Decreased risk for diseases, improved quality of life, improved health, and lower healthcare costs will be the desired outcomes. Evaluation later, after implementation will identify the actual outcomes and effects of the comprehensive health care plan.

Conclusion. The recommendations I made to enable, predispose, and reinforce health behavior are multifaceted. The environmental, ecological, and educational initiatives are intended to increase availability of resources at the college site, provide information about attaining the skills and knowledge necessary for health, and promote self-care for sustainability. The predisposing, enabling, and reinforcing factor recommendations will be put forth by me to the site so administration can prioritize implementation per resources available and changeability. Although applications for grants will be encouraged, the availability of resources would determine the timeframe at which the implementations would take place. The logic model is a simple representation

of the process separated into inputs, activities, outputs, and outcomes. The diagram and conceptual way of thinking can be used to present stakeholders with an overall program process and sequence.

Evaluation Recommendations

After the PRECEDE portion of the PPM, I completed the PROCEED portion. The PROCEED portion of the PPM (Policy, Regulatory, and Organizational Constructs in Educational and Environmental Development) guided me with the implementation and evaluation of the programs. Next, the evaluation recommendations are explained by me and sorted into phases six, seven, and eight of the PPM. The recommended evaluation will not take place in the project but is recommended for future research studies at the site. In addition, evaluation recommendations can be considered for health planning projects at other two-year colleges in the future.

Since I used the objectives from Healthy Campus 2020 (2015) for the project, the evaluation will be based on the same objectives. Healthy Campus 2020 (2015c) encourages use of a spreadsheet (Healthy Campus 2020 (2016b). (see Appendix D1, D2). The process evaluation, the impact evaluation, and the outcome evaluation can be additional columns on the spreadsheet.

The data can be added by the implementer to the spreadsheet in the following manner. Additional columns can be added to hold a count of how many students met the learning objectives and participated in the health promotion process (Healthy Campus 2020, 2016b). Also mentioned are alternate evaluation methods.

Phase six. Phase six is the process evaluation and the implementer can use it to determine if the program is reaching the targeted population and achieving desired goals (Green, 1999). For phase 6, Process evaluation, the following question can lead to evaluation methods. Are you doing the things you planned to do? Why the gaps between what was planned and what was occurring? What are the relationships between the components of the program? Is the program reaching the targeted population, and is the program reaching the goals (Green, 1999)?

To evaluate whether the program is reaching the goals, the plan implementer can count how many students have attended the group learning opportunities. In addition, how many students have knowledge of and can verbalize the learning objectives designed, that is, the physical fitness and muscle-strengthening recommendations, as well as the nutrition and weight status objectives? The future implementer can also tally how many students participated in the physical fitness and muscle strengthening activities held on campus. The evaluation will answer the question "how many students participated in the health promotion process"?

To triangulate data, forming a questionnaire to be used periodically throughout the implementation could be useful. The results of the questionnaire can be tabulated on the spreadsheet for analysis. For instance, for the process evaluation, a questionnaire asking the student how many minutes a week does he or she participate in physical activity and muscle-strengthening exercises as defined by Healthy Campus, 2020 (2015a). Likewise, the questionnaire would ask how many fruits and vegetable servings does he or she eat each day? In addition, "do you understand the learning objectives of

the health promotion education initiatives?" The implementer could choose process evaluation by tallying users, having the students complete the questionnaire, and collecting the specific data from the informatics tracker.

Phase seven. The process evaluation is phase seven and the implementer can determine if the program is reaching the targeted population and achieving desired goals (Green, 1999). Phase seven, impact evaluation measures whether the intervention is having the desired impact on the target population. What are the programs intended and unintended consequences? What are the positive and negative effects? Impact evaluation for the project will evaluate the change in behavior, and measures program effectiveness in terms of changes in the predisposing, enabling, and reinforcing factors (Green, 1999). The evaluation can be done by accessing de-identified data on the informatics tracker. The answer to the question of what percentage of students have been impacted by the health promotion program will be pursued by the implementer.

Mathematical analysis would inform the researcher if ten percent, or what percent improvement was made regarding number of students participating in recommended physical activity and fitness guidelines. Likewise, analysis would be done to discover the percentage of students who eat five fruits and vegetable servings per day, and whether the number is a ten percent increase, or what percentage of a change has occurred. A pre-project and post project questionnaire is another way to evaluate the impact of the program. A questionnaire can be completed and statistically analyzed to determine the impact of the health improvement plan. The questionnaire could include impact questions

such as “are you following the guidelines learned at home and school, and have you lost weight since you started the program?”

Phase eight. Phase eight is the outcome evaluation and the implementer can measure overall program goals and can identify if there is a decrease in the incidence or prevalence of the identified negative behavior or an increase in identified positive behavior (Green, 1999). The intent is to measure is the intervention leading to the desired result that was envisioned in Phase one. Did the program achieve its targets? Was there an increase in the percentage of students with a healthy weight and a decrease in students who were at an obese weight over the long term and less chronic disease? Evaluating the outcomes would include monitoring and continuous quality improvement.

The outcome evaluation would involve a longitudinal study to investigate whether the students continue desired behavior, and if the population involved has less chronic disease and lower healthcare costs over a longer-term period. Rural Health Information Hub (2017) describes outcome evaluation as identification of whether there is a decrease in the incidence or prevalence of the identified negative behavior or an increase in identified positive behavior. “Do you have an improved health when you participate in the program?” The process evaluation, the impact evaluation, and the outcome evaluation would be undertaken after implementation of the health promotion project at a future time, and will not be done as part of the current plan, although the evaluation recommendations are recommended for use by the implementer.

Limitations and their Potential Impact on the Findings

Limitations were the small amount of focus group discussions and key informant interviews may make it difficult to generalize findings. If another site were to repeat the process, findings would be different. In addition, answers to interview questions were sorted but not ranked. Prioritization will be deferred to administration for prioritization. Furthermore, unanticipated limitations and the potential impact on the findings is a limited future budget to design planning around. Comprehensive planning as designed in recommendations would require a budget for staffing and ecological and environmental improvements with an outcome of narrowing the evidence-based practice gap. Lack of future staffing could create a lag in health promotion initiatives. The challenge could be partially resolved by applying to grants for a multi-year infrastructure phase in.

Implications Resulting from the Findings

Individuals, institutions, and systems can be effected by the findings in various ways. Informed patients and behavior change can lead to improved health. Institutional health system redesign leads to a more comprehensive approach. Community integration leads to improved use of community resources and integrated health systems.

Individuals. The implications of the CHIP for individuals are that students can develop healthy behaviors at a young adult age with the potential to sustain the behaviors over a lifetime (Bandura, 2004). Researchers have followed a cohort of young adults and found that being overweight between the ages of 20-22 years old correlates with increased risk of obesity between the ages of 35-37 years (McTighue, Garrett, and Popkin, 2002). The healthy behaviors, when sustained, can lead to less chronic disease,

improved health and improved quality of life (Fardet and Boiret, 2013). The environmental and educational initiatives are designed to minimize health disparities and decrease risk for chronic disease in the college population.

Communities. Since poor nutrition, obesity, and inactivity are risk factors for diabetes and are associated with other chronic diseases such as cardiovascular disease, cancers, and many others, more healthy behaviors beginning at a young age could result in less chronic disease (Fardet and Boirie, 2013; World Health Organization [WHO], 2010). In addition, since chronic disease accounts for 50% of all health care dollars spent, sustained healthy behavior may decrease health spending (WHO, 2010). Community partners have encouraged the site health service to create a college wellness initiative at the site, and the project extends the health messaging and health behavior reinforcement to the students and the greater college community.

Institutions. In the quality improvement CHIP, I ensure health care redesign, a comprehensive method of implementing an educational and behavior modification initiative to improve health, and a thorough case management plan to emphasize follow through. Since the project site does not have an established wellness program, the quality improvement project would be a framework to enhance the providers' evidence-based practice and decision making for the college community. The college has students all year but lacks fitness equipment and staffing for the fitness center, therefore, the utilization rate is low. The plan will allow students to access more wellness opportunities. The plan will expand fitness opportunities and educational opportunities for nutrition, healthy weight, and activity.

I also suggest that the plan be implemented in other two and four year colleges which would potentially multiply the learning and self-management of healthy behaviors, since early adoption contributes to students' sustained behavior over a lifetime (Bandura, 2004). College health educators and providers can incorporate the CHIP recommendations to improve the quality of the evidence-based practice.

Systems. The integration of a college health CHIP into the surrounding communities' CHIP by the implementer creates a cooperation and collaboration to improve population health. The determinants of nutrition and weight, as well as physical activity and fitness are emphasized as a population health priority, since obesity correlates with many chronic diseases (Fardet and Boiret, 2013). Population health systems rely on patient cooperation and involvement to reach desired outcomes of improved health. It is difficult to include college health services data that do not bill or have electronic medical records in population health metrics and messaging due to lack of generated data. The data generated and inputted into databases by all future implementers could contribute to more comprehensive analyses potential. Future database warehouses such as ACHA data warehouse could potentially use de-identified data as a source for a comprehensive data collection and analysis efforts.

Implications to positive social change. Potential implications for positive social change could be at the micro, meso, and macro level. At the individual level, a student can formulate personal health goals based on the evaluation which takes place at Health Services and knowledge of evidence-based objectives. Social change can occur because student participation in group learning and health promotion implementation initiatives

can enhance a sense of belonging when at college and can lead to friendships and collaboration.

At a meso level, targeted interventions can be planned because of the site assessment and diagnosis using the PPM. Evidence based guidelines and health promotion education and activities will enhance the environment. In addition, social change can occur when learned behaviors are shared with the family and potentially be incorporated in the culture of the learner.

At a macro level, target community resources and partnerships can be promoted because of the assessment using the PPM. Referrals can be made and resources can be linked. Health messages will be reinforced, and population health outcomes will be improved. Knowledge, skills, evidence based practices, and self-monitoring in a college healthcare redesign will potentially lead to greater confidence, efficiency, and effectiveness to enable people to sustain their own health behavior which will lead to improved population health.

Contribution of the Doctoral Project Team

The project team consisting of the project leader and key informants investigated and contributed knowledge to the investigation to identify education and resources currently in place, so the leader could construct a plan to backfill deficits. Li et al. (2009) concluded any successful health promotion project must include a comprehensive needs assessment. The thorough needs assessment contributed by the project team was the basis of the health program planning.

I will not include implementation of the results in the project. The implementation can be implemented later after money has been allocated to carry out the recommendations. In addition, other two year colleges can include the recommendations in their implementation plan, if it is deemed appropriate and desired. The contribution of the doctoral project will fill a gap in the literature of wellness planning in two-year college populations.

Process of working with the doctoral project team. The process of working with the project team included meeting several times in small groups in a question and answer session to discuss the educational, ecological, environmental, administrative and policy initiatives related to physical activity and fitness, and weight and nutrition. I asked questions about what type of educational initiatives were available and how frequently were they available.

On the topic of physical activity and fitness, I asked what environmental options for physical activity and fitness, such as exercise rooms or outdoor trails are currently on the campus? What has prevented access to the existing opportunities? What would expansion of opportunities consist of? What, if any, deterrents exist? The members of the focus group with most knowledge answered per the expertise of the individual.

The discussion about the indicator of weight and nutrition allowed me the opportunity to ask questions about educational opportunities, availability of fruits and vegetables on campus, and challenges preventing consumption of five servings a day. Case management availability was also assessed by me. I asked questions about health staffing and use of evidence based guidelines.

Roles the project team. The project team assisted in providing information in small group meetings to me about environmental, educational, and policy endeavors the college historically had in place, or has in place currently. The small groups enabled the team to exchange information and find facts to enhance the assessment portion of the phases in the PPM.

The project team included:

1. The nurse researcher
2. Facilities and grounds manager
3. Vice President of Research and Planning
4. Health Services management
5. Events coordinator
6. Community Health Nurse expert- project mentor

The contributions of the project team were to supply information of past health promotion resources and activities on campus for the assessment, educational and ecological diagnosis, and environmental diagnosis for the project. In addition, the project team supplied information of policies predisposing, reinforcing, and enabling the health promotion objectives. Without the assessment phases two, three, and four, the subsequent planning recommendations included for implementation and evaluation could not have been designed or constructed. The entire function of the PPM would not have worked without the cooperation of the project team.

Plans to extend beyond the DNP doctoral project. Plans to extend the project beyond the DNP doctoral work are diverse. I will present the doctoral plan to senior staff

for necessary funding to be requested and approved for implementation. However, implementation of the recommendations was not included by me for the completion of the doctoral project. The health provider at the college will apply for grants next year for funding opportunities as well. A post- project goal will be that the college will become a Healthy Campus 2020 partner (Healthy Campus 2020, 2016b). The partnership will highlight the commitment to college health and the college name will be listed on the participating partners list.

Strength and Limitations

The strengths of the project are the theoretical foundation for the assessment, diagnosis, planning, education, and self-care maintenance leading to sustainability. The PRECEDE-PROCEED model was ideal to guide me in assessing what was needed before planning began. In addition, use of the PPM allowed me to design multifaceted changes in different types of efforts, and implementations are necessary for environmental, behavioral, and social change. Logic model constructs complement the PPM and allow definition in the parts of planning using inputs, activities, outputs, and outcomes as a framework (CDC, 2013).

The ICCC model components are a comprehensive structure for program planning on an individual, family, and community level (Epping-Jordan et al., 2004) Bandura's social cognitive theory (2004) describes a rationale for group young adult learning in the college age group population; that the behaviors are more likely to be sustained into adulthood. Tailored learning strategies strengthen the focused evidence-based educational objectives. Self-care theory forms a ladder of maintenance, monitoring, and management

for the provider to promote sustainability in real time use (Riegel et al., 2012). The use of several theories allowed me to have a comprehensive base for planning initiatives to improve health.

The limitations are I used existing data for the phase one of the assessment. Researchers from Healthy Campus 2020 and ACHA compiled data from two and four year colleges, and only 12 two year colleges participated (ACHA, 2015b). The 12 participating two year colleges were all from the same state. Therefore, the data may not have captured the specific population of two year colleges across the nation. The fact that pre-existing data was used by me is not a significant weakness because the assessment and planning does not rely on the baselines and targets in Healthy Campus 2020 specifically. I based the assessment and planning on a well-developed body of research knowledge previously done, and meta-analysis of the research prioritizing the determinants and linking obesity to chronic disease (Fardet and Boiret, 2013).

The limitations I project in the implementation of the plan are that the students only attend college for a two-year degree, or single classes, so a long-term follow through would not be possible. Emphasis would have to be placed on self-care and maintenance to sustain behaviors and reach desired outcomes.

Recommendations for future projects. The project has grown the body of knowledge available to be used in college community health improvement plans and the methodology can be reused across the country and around the world, especially in the two-year college campus. The PRECEDE- PROCEED Model is a proven health planning model that can be used for future planning projects (Green & Kreuter, 2005). Analysis of

college health communities such as the analysis suggested in the project using the PRECEDE- PROCEED model can lead to effective health promotion (Li et al., 2009). Financial and other resources can be allocated to promote improved health outcomes.

Policies can be designed, approved and implemented to promote population health. Review of the best practices literature and interviewing would result in information about costs, economic benefit and time allotment necessary to apply new approaches. Policy development is an important approach to improve population health outcomes after evidence is gathered and analyzed. Development of policies would be directed by data analysis and the analysis completed using the PRECEDE-PROCEED Model for planning health promotion in two-year colleges.

New practice strategies such as specific health projects based on measured need can improve healthcare quality by targeting care to actual needs, not just assumed needs of the community (Green and Kreuter, 2005). The health services would consider increasing the amount of time and resources spent on health promotion and disease prevention programs. Financial factors and human resources in terms of staffing would have to be increased. New standards of care relevant to the new practice guidelines of case management will be implemented, and full time staff at each campus could develop.

The macro systems issues that might inhibit implementation and strategies for resolving issues are the college systems and departments, or other pre-existing policies that conflict with new policy. The micro issues that might inhibit implementation are individual's willingness to accept change and participate in the health initiatives.

Employees and students' willingness to use resources such as fitness center, or eat health foods might be a barrier in health improvement outcomes.

Leadership is necessary to plan policy change and accomplish policy approval. Leadership is also required to highlight research and attain funding for projects. It could be stated that the entire community is a stakeholder because the community college is taxpayer funded, and the community would benefit from improved health programs and a safer and healthier community in general.

Community based health centers such as college based health can identify resources, increase messaging and health promotion education, enhance the training and availability of staff, and endorse policies to enhance integration with population health metrics in the surrounding community. The pre-existing health metrics found in local and state public health and Healthy Campus 2020 (2016) databases have already been established and prioritized as most important for reaching the goal of improved health outcomes, decreased chronic diseases, decreased health costs, and improved quality of life. Similar future projects addressing similar topics with similar methods will establish a coherence with priority health initiatives in all areas of the world.

Section 5: Dissemination Plan

I plan to disseminate the doctoral work to the institution experiencing the problem by presenting a slide show and summary of the work to the participating focus group, employees, students, and administration, and allowing for questions and answers after the presentation. I plan to offer the opportunity for individual appointments with me to discuss the project in more depth, if requested. I will also disseminate a power point for reference by emailing to the stakeholders for reference.

Appropriate Audiences and Venues

The American College Health Association (ACHA) and the Mid-Atlantic College Health Association (MACHA) accept poster presentations for the annual meeting (ACHA, 2016; MACHA, 2016). The attendees are college health employees from 2 and 4-year colleges. The ACHA poster presentation venue would be an appropriate place for the professionals to see and read the project description. The conceptual maps and theoretical models can be visualized by the reader for easier comprehension of how the constructs interact and lead to one another. Discussion can take place face to face to explain the methodology and results in more detail.

The Journal of American College Health is a journal published in cooperation with the ACHA (2016). Major articles, research, projects, and case studies are included in the publication (ACHA, 2016c). The journal is the only scholarly publication devoted to only college students' health (ACHA, 2016). The journal would be an appropriate dissemination venue for the intended target audience.

Contributions to Nursing and Society

The social ramifications of the application of theories and research in the project have the potential to be far reaching. The learning of objectives, along with the desired health behavior change in the persons' early 20s could impact the person's maintenance of the behaviors at older ages (Bandura, 2004). The health behaviors, if maintained, could lead to decreased obesity, which is a risk factor for many chronic diseases (Fardet and Boiret, 2013).

The ramifications for nursing needs are a theory based, comprehensive health care redesign for a 2-year college health clinic setting. The project shows a framework to college health nurses, and even other settings, from which to build an improvement plan. The nursing needs of a student at an individual level of care, and the college population are accomplished by the plan.

From a nursing point of view, I have accomplished a new comprehensive model for healthcare assessment, redesign, and planning. The combinations of the theories and health planning model addresses the student needs, the system needs, the regulatory needs, and repeats public health messaging of providers and health departments in the greater surrounding communities. The new model is a tool for nurses to learn to use to broaden the nurse practice strategies in the college setting and beyond. Further uses of the project model by nurses would define assessment and planning capabilities, broaden and direct collaboration and leadership efforts, and expand the capabilities of college health.

The recommendations from a nursing perspective are at the practice level and the community health level. At the practice level, I have constructed a theoretical health

systems redesign, and the model can be replicated for use in other settings. In the project I included a strategy to redesign college health to improve health determinants and outcomes. The redesign includes self-management support, delivery system redesign, decision support, and clinical information systems. The redesign and future applications can lead to college community health changes in other locations.

The impacts to the discipline are numerous. The systems redesign of the project and future replication in other 2-year colleges would contribute to process improvement and evidence based practice in the setting. The case management and informatics use would contribute to the available data for analysis. The available data in 2-year colleges is limited, and additional data could contribute to the already existing data to allow for data warehousing and further research. The integration of data from the college setting is necessary to keep up with the advancements seen with county, state, national, and international CHIPs, and would allow for determinations of health in the college population. In addition, the project could supplement information and messaging for the Healthy Campus 2020 (2016b) initiative.

Future studies could replicate the model to base initiatives on measured need, not just assumed needs. College based health can identify resources, increase messaging, and enhance training. In addition, studies could identify and evaluate disparities of health by benchmarking college data to surrounding states and populations. By benchmarking and comparing to other populations, differences in obesity rates or activity levels would become apparent. The analysis can lead to public health interventions such as the ones designed in the project to improve health outcomes in the college population. The

improved health outcomes could lead to a decrease in chronic diseases, decreased health care costs, and improved quality of life.

Analysis of Self

As a scholar, I incorporated objectives in the Essentials of Doctoral Education for Advanced Nursing Practice. The objectives of the American Association of Colleges of Nursing (2006) are underpinnings for practice. The objectives include organizational and systems leadership for quality improvement and systems thinking, scholarship and analytical methods for EBP, information systems and technology, policy for advocacy, interprofessional collaboration, prevention for population health, and advanced nursing practice.

The completion of the journey included challenges and setbacks. In the process, I had to incorporate many scholarly perspectives on theoretical models and frameworks to be comprehensive and successful. The solutions I found through collaboration led to a more robust scholarly product. The insights I gained from the process formed a more scholarly foundation for future learning.

Summary

In conclusion, I have made an essential message clear in the doctoral project to the readers and extended audience. The message of eating more fruits and vegetables and being more active is being given in primary care settings, public health venues, and should be reinforced by providers in all levels of school health. Obesity has been considered a gateway disease and has been shown to correlate with many chronic diseases and subsequent health care costs (Fardet and Boiret, 2013).

The use of the PPM guides providers in comprehensive planning based on predisposing, enabling, and reinforcing behavior change, not just teaching about the goals related to change (Green, 1999). If students want to include the healthy behaviors in their lifestyle, are enabled to include the change, and are rewarded for the healthy behavior, the student is more likely to be successful and reach objectives (Green, 1999). Reliance on the ICCC and self-care model reinforces the expected change and both parts are essential for sustaining the behaviors (Improving Chronic Illness Care, 2016; Riegel, Jaarsma, & Stromberg, 2012).

Since behavioral changes in the 20s-age group can continue into older ages, a potential lifetime of more healthful behavior can be encouraged by use of the program. Other college health providers can use the CHIP as a template within their own population. Providers can integrate college health data into the population health metrics and goals by using the CHIP. The CHIP has the potential to increase healthy behavior, impact the prevalence of chronic disease, potentially decrease healthcare costs, and improve quality of life for individuals and communities.

References

American Association of Colleges of Nursing (2006). *The essentials of doctoral education for advanced nursing practice*. Retrieved from http://www.aacn.nche.edu/publications/position/DNPEssentials.pdf

American College Health Association (2015). *Education.* Retrieved from www.acha.org/ACHA/Education.aspx

American College Health Association (2016). Student Learning Outcomes http://www.acha.org/ACHA/Resources/Topics/Learning_Outcomes.aspx

American College Health Association (2016b). *Collaborators.* Retrieved from http://www.acha.org/HealthyCampus/Collaborators/HealthyCampus/Collaborators.aspx?hkey=e7ea31a3-8c36-4400-b61e-5ed49370bd1d

Atlantic Cape Community College (2012). Fact book online 2010-2011. Retrieved from http://atlantic.edu/about/research/documents/ACCCFACTBOOK10-11Final.pdf

Atlantic County Division of Public Health (2014). Community Health Improvement Plan 2014-2018. Retrieved from http://www.aclink.org/PublicHealth/pdf/CHIP2014-18.pdf

Bandura, A. (2004). Health promotion by social cognitive means. *Health Education & Behavior*. *31*(2).143-164. Doi: 10.1177/1090198104263660.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology, 2001. (52)*:1-26. Retrieved from www.annualreviews.org

Basch, C. (n.d.). Healthier students are better learners: High-quality, strategically planned, and effectively coordinated school health programs must be a

fundamental mission of schools to help close the achievement gap. *Journal of School Health, 2011; 81*(10), 650-662.

Bellocco, R., Jia, C., Ye, W., & Lagerros, Y. (2010). Effects of physical activity, body mass index, waist-to-hip ratio and waist circumference on total mortality risk in the Swedish National March Cohort. *European Journal of Epidemiology*, *25*(11), 777. Doi:10.1007/s10654-010-9497-6

Cawley J., Meyerhoefer C. (2012). The medical care costs of obesity: An instrumental variables approach. Journal of Health Economics. 31(1): 219-230. 2012.

Centers for Disease Control and Prevention (2010). Community Health Assessment aNd Group Evaluation (CHANGE) Action Guide: Building a Foundation of Knowledge to Prioritize Community Needs. Atlanta: U.S. Department of Health and Human Services, 2010. Retrieved from http://www.cdc.gov/nccdphp/dch/programs/healthycommunitiesprogram/tools/change.htm

Centers for Disease Control (2013). Developing and using a logic model. Retrieved from http://www.cdc.gov/dhdsp/programs/spha/evaluation_guides/logic_model.htm

Centers for Disease Control and Prevention (2015a). CHSI; Information for improving community health. Retrieved from www.cdc.gov/CommunityHealth/Info/AboutData http://wwwn.cdc.gov/communityhealth

Centers for Disease Control and Prevention (2015b). Healthy weight; It's not a diet, it's a lifestyle! Retrieved 7/23/2015 from

http://www.cdc.gov/healthyweight/effects/index.html

Child Development Institute (2015). Erik Ericson's stages of social-emotional development. Retrieved from https://childdevelopmentinfo.com/child-development/erickson/#.WOUFN9Lyu70

Community Tool Box (2017). PRECEDE PROCEED. Retrieved from http://ctb.ku.edu/en/table- contents/overview/other-models-promoting-community-health-and-development/preceder-proceder/main

Dee, A., Kearns, K., O'Neill, C., Sharp, L., Staines, A., O'Dwyer, V., & ... Perry, I. J. (2014). The direct and indirect costs of both overweight and obesity: a systematic review. *BMC Research Notes, 7*(1), 2. Doi:10.1186/1756-0500-7-242

Definition of Wellness (2013). Definition of a health indicator. Retrieved from http://definitionofwellness.com/wellness-dictionary/health-indicator/

Epping-Jordan, J., Pruitt, S., Bengoa, R., & Wagner, E. (2004). Improving the quality of health care for chronic conditions. Retrieved from Quality & Safety in Health Care 2004;*(13)*299–305. Doi: 10.1136/qshc.2004.010744

Ewell (2001). Accreditation and student learning outcomes: A proposed point of departure. Council for Higher Education Accreditation. 2001. Retrieved from http://files.eric.ed.gov/fulltext/ED469482.pdf.

Fardet, A., & Boirie, Y. (2013). Associations between diet-related diseases and impaired physiological mechanisms: a holistic approach based on meta-analyses to identify targets for preventive nutrition. *Nutrition Reviews, 71*(10), 643-656 14p. doi:10.1111/nure.12052

Friis, R. H., & Sellers, T. A. (2014). Epidemiology for public health practice (5th Ed.). Sudbury, MA: Jones & Bartlett.

Goetzel, R. Z., Roemer, E. C., Pei, X., Short, M. E., Tabrizi, M. J., Wilson, M. G. … Baase, C.M. (2010). Second-Year Results of an Obesity Prevention Program at the Dow Chemical Company. *Journal of Occupational and Environmental Medicine / American College of Occupational and Environmental Medicine*, *52*(3), 291–302. doi:10.1097/JOM.0b013e3181d46f0b

Goetzel, R. Z., Xiaofei, P., Tabrizi, M. J., Henke, R. M., Kowlessar, N., Nelson, C. F., & Metz, R. D. (2012). Ten Modifiable Health Risk Factors Are Linked To More Than One-Fifth Of Employer-Employee Health Care Spending. *Health Affairs*, *31*(11), 2474-2483. doi:10.1377/hlthaff.2011.0819

Green, L (1999). What can we generalize from research on patient education and clinical health promotion to physician counseling on diet? European Journal of Clinical Nutrition; 53*(2)*, S9-S18.

Green L., Kreuter M. (2005). Health Program Planning: An Educational and Ecological Approach. 4th edition. McGraw-Hill, New York; 2005.

Healthy Campus 2020 (2015). Student objectives. Retrieved from https://www.acha.org/HealthyCampus/Objectives/Student_Objectives/

Health Indicators Warehouse (2016). National College Health Indicators. Retrieved from http://www.healthindicators.gov/Resources/DataSources/NCHA_82/Profile

Healthy Campus 2020 (2015a). Characteristics of a Healthy Campus Initiative. Retrieved from http://www.acha.org/HealthyCampus/HealthyCampus/Characteristics.aspx

Healthy Campus 2020 (2015b) Student objectives. Retrieved from http://www.acha.org/HealthyCampus/Objectives/Student_Objectives/HealthyCampus/Student_Objectives.aspx?hkey=a9f191de-243b-41c6-b913-c012961ecab9

Healthy People 2020 (2011). Nutrition and weight status. Retrieved 7/23/2015 from http://www.healthypeople.gov/2020/topics-objectives/topic/nutrition-and-weight-status

Healthy People 2020 (2016). Educational and community based programs. Retrieved from http://www.healthypeople.gov/2020/topics-objectives/topic/educational-and-community-based-programs

Healthy Campus 2020 (2016). Take the pledge; Become a Healthy Campus partner. Retrieved from https://www.acha.org/HealthyCampus/Take_The_Pledge/HealthyCampus/TakeThePledge.aspx?hkey=4c4d9f0e-7157-4f8b-a928-dd0495310c4a

Healthy Campus 2020 (2016b). Track your own data; Healthy Campus spreadsheet. Retrieved from https://www.acha.org/app_themes/HC2020/documents/HC2020_Student_Objectives_spreadsheet.xls

Improving Chronic Illness Care (2016). The chronic care model. Retrieved from http://www.improvingchroniccare.org/index.php?p=The_Chronic_Care_Model&s=2

Johns, D., Hartman-Boyce, J., Jebb, S., Aveyard, P. (2014). Diet or exercise interventions vs. combined behavioral weight management programs: A systematic review and

meta-analysis of direct comparisons. Journal of the Academy of Nutrition and Dietetics. 2014October; 14(10):1557-68. Doi 10.1016/j.jand.2014.07.005

Kattelmann, K. K., White, A. A., Greene, G. W., Byrd-Bredbenner, C., Hoerr, S. L., Horacek, T. M., ... & Brown, O. N. (2014). Development of Young Adults Eating and Active for Health (YEAH) internet-based intervention via a community-based participatory research model. *Journal of nutrition education and behavior*, *46*(2), S10-S25.

Li, Y., Cao, J., Lin, H., Li, D., Wang, Y., & He, J. (2009). Community health needs assessment with PRECEDE-PROCEED model: a mixed methods study. *BMC Health Services Research*, *9*181. Doi:10.1186/1472-6963-9

McTigue, K., Garrett, J., Popkin, B., (2002). The natural history of the development of obesity in a cohort of young US adults between 1981 and 1998. Annals of Internal Medicine; (136) 857-864.

Mid-Atlantic College Health Association (2016). News and announcements. Retrieved from https://www.acha.org/midatlantic

Montgomerie, A. M., Chittleborough, C. R., & Taylor, A. W. (2014). Physical Inactivity and Incidence of Obesity among South Australian Adults. *Plos ONE*, *9*(11), 1-7.doi:10.1371/journal.pone.0112693

National College Health Assessment (2009). Undergraduate students reference group. Retrieved from http://www.acha-ncha.org/docs/NCHA-II_WEB_SPRING_2015_UNDERGRADUATE_REFERENCE_GROUP_EXECUTIVE_SUMMARY.pdf

National Institute of Health; National Institute of Diabetes and Digestive and Kidney Disease (2012). Overweight and Obesity Statistics. Retrieved 7/23/2015 from http://www.niddk.nih.gov/health-information/health-statistics/Pages/overweight-obesity-statistics.aspx

Ottoson, J. & Green, L. (2005). Community outreach: from measuring the difference to making a difference with health information. Journal of Medical Library Association 93(4), supplement 2005.

Phillips, J., Rolley, J., & Davidson, P. (2012). Developing targeted health services interventions using the PRECEDE-PROCEED Model: Two Australian case studies.

Riegel, B., Jaarsma, T., & Stromberg, A. (2012). A middle-range theory of self-care of chronic illness. Advances in Nursing Science; *(35)*3; 194-204. Wolters Kluwer Health, Lippincott Williams & Wilkins

Rural Health Information Hub (2017). PRECEDE- PROCEED. Retrieved from https://www.ruralhealthinfo.org/community-health/health-promotion/2/program-models/precede-proceed

Tudor-Locke, C., Bassett, D. (2004). How many steps per day are enough? Preliminary pedometer indices for public health. *Sports Medicine (34)*:1–8. Retrieved 7/23/2015 from http://link.springer.com/article/10.2165/00007256-200434010-00001#page-1

United States Department of Agriculture (2016). Super tracker. Retrieved from https://www.supertracker.usda.gov/

U.S. Department of Health and Human Services; Centers for Disease Control and Prevention (2011). Introduction to program evaluation for public health programs: A self-study guide. Atlanta, GA. Retrieved 7/23/2015 from http://www.cdc.gov/eval/guide/cdcevalmanual.pdf

U.S. Department of Health and Human Services; Physical Activity Guidelines Advisory Committee [PAGAC] (2008). Physical Activity Guidelines Advisory Committee Report, 2008. Washington, DC

U.S. Department of Health and Human Services Centers for Disease Control (2013). Behavioral Risk Factor Surveillance System; Prevalence and trends data, New Jersey. Retrieved from http://apps.nccd.cdc.gov/brfss/page.asp?yr=2013&state=NJ&cat=PA#PA

U.S. Department of Health and Human Services (2014a). Health Indicators Warehouse. Retrieved from http://www.healthindicators.gov/Indicators/Selection

U.S. Department of Health and Human Services; Centers for Disease Control and Prevention (2014b). Healthy People2020. Retrieved from http://www.healthypeople.gov/2020/topics-objectives/topic/educational-and-community-based-programs

U.S. Department of Health and Human Services (2014c). Office of Disease Prevention and Health Promotion. Healthy People 2020; Leading Health Indicators: Clinical preventative services. Washington, DC. Retrieved from http://www.healthypeople.gov/sites/default/files/HP2020_LHI_Clin_Prev_Srv_0.pdf

Valentijn, P., Schepman, S., Opheij, W., and Bruijneels, M. (2013). Understanding integrated care: a comprehensive conceptual framework based on the integrative functions of primary care. International Journal of Integrated Care *(13)*22March, 2013. URN:NBN:NL:UI:10-1-114415-http://www.ijic.org

Walden University (2015). Doctor of Nursing Practice (DNP) Practicum and DNP Project Manual. Retrieved from http://academicguides.waldenu.edu/ld.php?content_id=7356974

Whittemore, R., & Knafl, K. (2005). The integrative review: updated methodology. Journal of Advanced Nursing, 52(5)546-553 8p. doi10.1111/j/1365-2648.2005.03621.x

W.K. Kellogg Foundation (2006). logic model development guide. Retrieved from https://www.wkkf.org/resource-directory/resource/2006/02/wk-kellogg-foundation-logic-model-development-guide

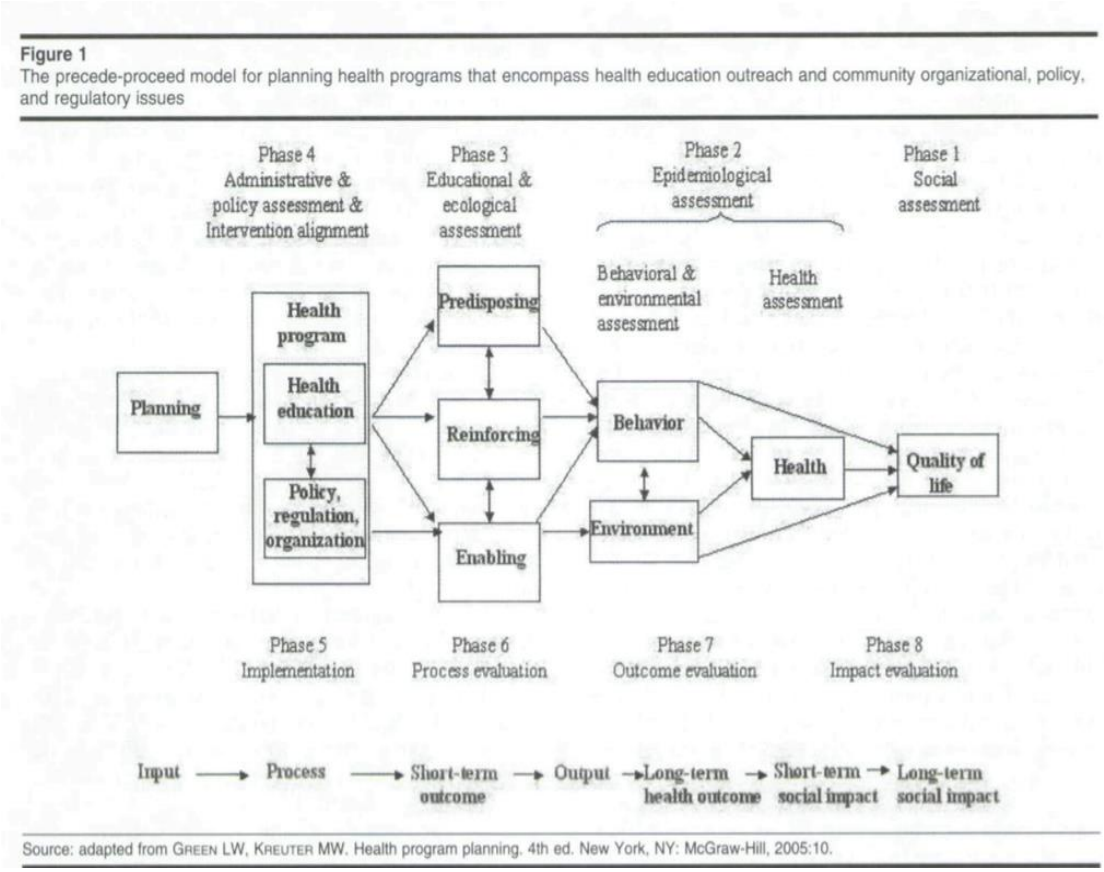
World Health Organization (2006). Definitions and metadata. Retrieved from http://www.who.int/whosis/whostat2006DefinitionsAndMetadata.pdf?ua=1

World Health Organization [WHO] (2010). Physical activity and adults. Retrieved from http://www.who.int/dietphysicalactivity/factsheet_adults/en/

Appendix A

Figure 1

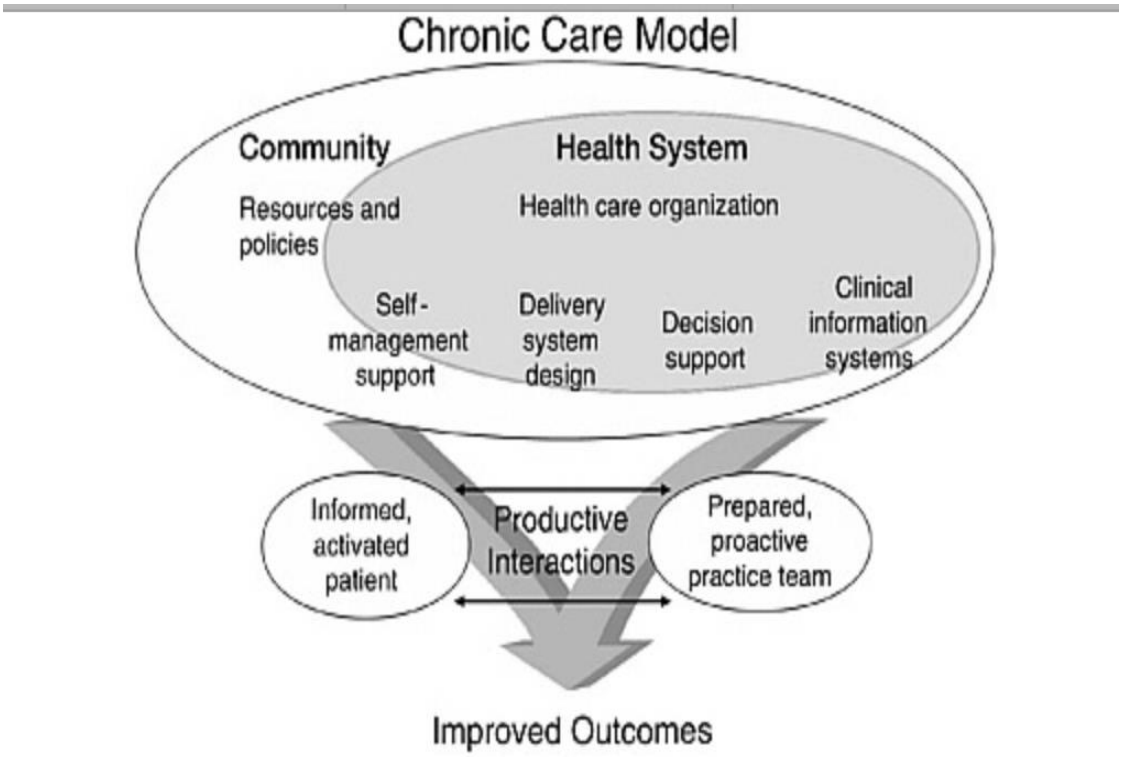
The precede-proceed model



Appendix B

Figure 2

The chronic care model (CCM)



Appendix C

Figure 3

Innovative care for chronic conditions (ICCC) model

Appendix D1

Table 1

Nutrition and Weight status data (Healthy Campus 2020, 2016)

	Topic Area: Nutrition and Weight Status	Data Source	Base-line 2010	Target 2020	More Information
NWS-8	Increase the proportion of students who are at a healthy weight.	American College Health Association – National College Health Assessment II (ACHA-NCHA II), Questions 49 & 50, or see ACHA-NCHA Spring 2010 Reference Group Executive Summary, page 13, for calculated BMI	61.6%	67.8%	Healthy weight is defined as a body mass index (BMI) of 18.5-24.9

NWS-9	Reduce the proportion of students who are obese.	American College Health Association – National College Health Assessment II (ACHA-NCHA II), Questions 49 & 50, or see ACHA-NCHA Spring 2010 Reference Group Executive Summary, page 13, for calculated BMI	11.6%	10.4%	Obese is defined as a body mass index (BMI) > to 30
NWS-14/15	Increase the proportion of students who report eating five or more servings of fruits and vegetables per day.	American College Health Association-National College Health Assessment II (ACHA-NCHA II), Question 28	6.0%	6.6%	

Appendix D2

Table 2

Physical Activity and Fitness data (Healthy Campus 2020, 2016)

	Topic Area: Physical Activity and Fitness	Data Source	Base-line 2010	Target 2020	More Information
PA 2.1	Increase the proportion of students who report meeting current federal guidelines for aerobic physical activity.	American College Health Association-National College Health Assessment II (ACHA-NCHA II), Questions 29A & 29B, or see ACHA-NCHA Spring 2010 Reference Group Executive Summary, page 12	48.7%	53.6%	Federal guidelines for aerobic physical activity is defined as engaging in aerobic physical activity of at least moderate intensity for (Cont'd)

at least 30 minutes on five or more days per week or vigorous intensity for at least 20 minutes on three or more days per week

NOTE: For substantial health benefits, adults should do at least 150 minutes (2 hours and 30 minutes) a week of moderate-intensity, or 75 minutes (1 hour

(Cont'd)

					and 15 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous intensity aerobic activity
PA-2.2	Increase the proportion of students who report meeting current federal guidelines for muscle-strengthening activity.	American College Health Association-National College Health Assessment II (ACHA-NCHA II), Question 29C	37.6%	41.4%	Federal guidelines for muscle-strengthening activity is defined as performing muscle-strengthening activities on (Cont'd)

two or more

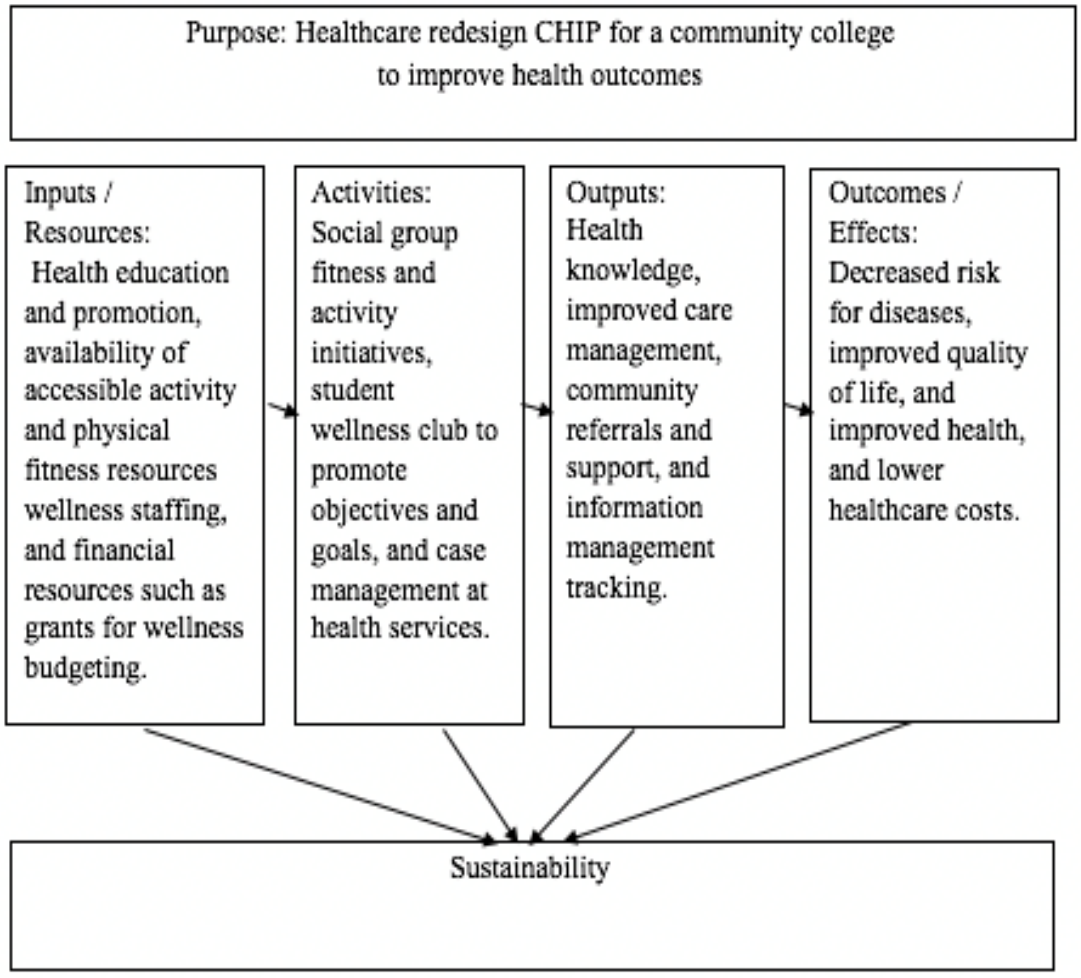
days of the

week

Appendix E:

Figure 4

Logic model



Appendix F:

Figure 5

CHIP Planning Gantt chart

	Week 1-2	Week 3-4	Week 5-6	Week 7-8	Week 9-10	Week 11-12
Task 1	Phase 1 Social Assessment	Phase 3 Educational And ecological Assessment	Phase 4 Admin-istrative assessment	Phase 4 Admin-istrative alignment	Phase 5 Implement ation planning	Design Logic model mapping
Task 2	Phase 2 Epidemio-logical Assessment	Predisposing Factors assessment	Policy assessment	Policy alignment	Phase 6 Process evaluation planning	Writing
Task 3	Behavioral Assessment	Reinforcing factors assessment	Health program education assessment	Health program intervention-al alignment	Phase 7 Outcome evaluation planning	Diagram construction (Cont'd)

Task 4	Environ-mental Assessment	Enabling factors assessment	Policy, regulation, organization assessment	Policy, regulation, and organization alignment	Phase 8 Impact evaluation planning	Edits and style

Appendix G:

Figure 6

College Health Improvement Plan (CHIP) Implementation Gantt chart

	Month 1-2	Month 3-4	Month 5-6	Month 7-8	Month 9-10	Month 11-12	Subsequent years
Task 1	Meet with stakeholders and acquire approvals for plan.	Acquire approvals to place in strategic initiative for coming years and allow for budgeting of health improve-ment plan.					
Task 2	Place educational written	Using Bandura's social	Plan and meet with community	Schedule and implement	Schedule and implement	Schedule and implement	Schedule and (Cont'd)

	materials in student areas on nutrition, weight, exercise, and activity	earning theory, design, plan and implement group learning of nutrition, weight, fitness and activity.	partners to visit college and conduct group sessions on nutrition, weight, fitness, and activity.	group informatio n sessions for instruction on nutrition, weight, fitness and activity with communit y partners.	group infor-mation sessions for instruction on nutrition, weight, fitness and activity with community partners.	group information sessions for instruction on nutrition, weight, fitness and activity with community partners.	implement group infor-mation sessions for instruction on nutrition, weight, fitness and activity with commun-ity partners.
Task 4	Place education al written materials in student	Meetings with food vendors to encourage fruit and	Have language about increased fruit and	Evaluate fruit and vegetable offerings in	Evaluate current suggested nutrition-al guide-lines	Evaluate student satisfaction with nutrition	Evaluate student satisfac-tion with (Cont'd)

	areas on nutrition, weight, exercise, and activity	vegetable choices in cafeteria.	vegetables written in to future bids for concession services.	cafeteria. Evaluate student satisfaction with nutrition education	and update education-al materials and curriculum.	education. Plan and implement student nutrition club led by student government and faculty advisor.	nutrition education. Modify instructional method according-ly.
Task 5	Design overall plan for walking paths.	Have new walking path surveyed for distance measurements.	Design signs to reflect distances for path	Publicize and implement social walking events on trails.	Plan and implement student fitness club led by student govern-ment.	Use budget for walking path signs, advertise-ments, and mainten-ance	Use budget for walking path mainten-ance.
Task 6	Stakeholder meeting	Determine budget amount	Place budget amount in request for	Use budget for walking	Plan and implement student	Order fitness equipment	Use budget for (Cont'd)

	for fitness center on all campuses	necessary to provide equipment and space for fitness area.	fiscal year 2017-18	path signs, advertisements, and maintenance.	fitness club led by student government.	and have installed in allocated areas.	fitness center maintenance.