Instituting a Behavioral Wellness Program and Updating a Clinical Pathway for Economically Disadvantaged Overweight and Obese Adults in a Community Health Center: A Clinical Scholarship Project

Kimberly D. Buck

University of Missouri-St. Louis

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Instituting a Behavioral Wellness Program and Updating a Clinical Pathway for Economically Disadvantaged Overweight and Obese Adults in a Community Health Center: A Clinical Scholarship Project

by

Kimberly D. Buck

B.S.N., Nursing, Deaconess College of Nursing – St. Louis, 2005
M.S.N., Nursing, St. Louis University – St. Louis, 2009

A PROJECT PROPOSAL
Submitted to the Graduate School of the UNIVERSITY OF MISSOURI – ST. LOUIS
In partial fulfillment of the Requirements for the Degree

DOCTOR OF NURSING PRACTICE

in
Nursing
June 2014

Advisory Committee
Dr. Anne F. Fish, PhD, RN, FAHA
Chairperson

Shelly Hanko, PhD, FNP

Kuei-Hsiang Hsueh, PhD, RN

Rajeev John, ACSW, LCSW
Abstract

The purpose of this clinical scholarship project is to work with the Midwestern health center to encourage weight loss as well as to promote healthy lifestyles and reduce risk factors among economically disadvantaged persons by: (a) starting a wellness program that incorporates both behavioral and physical health using principles of motivational interviewing and health coaching, and (b) updating a clinical pathway for persons with a body mass index twenty-five or greater. This project is intentionally instituted in an underserved community in an attempt to bridge the gap of health disparities in a population that would otherwise not have access to such programs. The community health center serves as the primary medical home for such populations. This project sought to answer the following questions: (a) Can the Midwestern health center successfully create, implement, evaluate, and sustain a group behavioral health program for weight loss using principles of motivational interviewing and health coaching? And (b) Can the Midwestern health center successfully update a clinical pathway for reducing body mass index?
Acknowledgements

I would like to take time to thank those who have been instrumental in the completion of this project. Dr. Anne Fish, my chairperson, has provided an extensive amount of time, expertise, guidance, and support in the planning and implementation of this project and writing this document. Her encouragement is what helped push me through. She has given me a meaningful understanding of what it is to practice on a doctoral level. Dr. Shelly Hango and Dr. Kuei-Hsiang Hsueh have provided practical insight and support during this process. Rajeev John from Grace Hill has been helpful with his expertise and time. The Grace Hill staff including, Veronica Richardson, Tameka Scott, John Parish, Nancy Phillips-Kuelker, and Richelle Moore, have been extremely pivotal in the development of this project. They welcomed me into their facility wholeheartedly and provided their skills, knowledge, and resources. We worked together to reach our common goal. Finally, I would like to recognize my daughter and family for their love, support, patience, and encouragement. Completing this program has been a challenge, however, having these people behind me, served as motivation to achieve this goal.
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Introduction

This project piloted a wellness program for adults with a body mass index (BMI) ≥ 25 in a community health center that serves economically disadvantaged populations. A wellness program consists of preventative and/or management services and interventions that are aimed to deter the development of chronic conditions as well as manage these conditions in order to prevent negative sequelae. The overarching goal is to promote and improve health. Lifestyle and risk factors are a major factor in the development of chronic conditions such as diabetes, hypertension, and heart disease. An important underlying risk factor for such conditions is being overweight or obese. Therefore, weight loss is imperative in decreasing risk factors by altering lifestyles. Subsequently, weight loss is embedded in this particular wellness program. Behavioral health using motivational interviewing and health coaching are components in health care that can assist in preventing this problem. However, there is great concern for economically disadvantaged populations in the ability to participate in such programs due to limited access to health care, lower socioeconomic status, and/or race/ethnicity. This project sought to develop a wellness program in a local urban community health center to update and implement a clinical pathway with the integration of behavioral health and physical health in order to decrease risk factors and make lifestyle changes that affect chronic conditions.

Problem Situation

Overweight and obesity continue to be highly prevalent, especially in some racial and ethnic minority groups as well as in those with lower incomes and less education (Jensen et al., 2013). A large body of literature shows that economically disadvantaged groups experience a greater prevalence of overweight or obesity compared with their more-advantaged counterparts (Sui, Giskes, & Turell, 2011). Obesity is a preventable risk factor for many chronic diseases
Low income and other disenfranchised populations are at a considerably higher risk for overweight and obesity and these patients often seek care at community health centers (Wilkes et al.). Health centers present an ideal setting for weight management programs, as they offer continuity of care as well as multidisciplinary teams which can provide nutrition and health education (Wilkes et al.). Thus, the premise for this project stems from the need for a wellness program and clinical pathway in a Midwestern health center to reduce BMI and promote health.

**Purpose**

The purpose of this project is to promote healthy lifestyles, encourage weight loss, and decrease risk factors among economically disadvantaged persons by: (a) instituting a program that incorporates both behavioral and physical health using motivational interviewing and health coaching, and (b) updating a clinical pathway for persons with a BMI ≥ 25.

**Issue, Problem Statement, and Rationale for the Project and the Clinical Pathway**

**Issue for the project.** The prevalence of obesity has risen dramatically in the United States (Singh, Siahpush, Hiatt, & Timsina, 2011). The rates for adults have more than doubled during the past three decades (Singh et al., 2011). This is predicted to continue. From 1990 to 2000, the number of deaths attributable to poor diet and physical inactivity has increased substantially and, if the pattern continues, poor diet and physical inactivity may overtake tobacco as the leading preventable cause of death (Jia & Lubetkin, 2005). Increases in obesity prevalence have been marked across all gender, race, and socioeconomic groups (Singh et al., 2011). Because of a relatively high prevalence, a rapidly increasing trend, and large social group disparities, adult obesity is recognized as a major public health problem in the US (Singh et al., 2011). Although obesity rates have continued to increase steadily in both sexes, at all ages, in all
races, and at all educational levels, the highest rates occur among the most economically
disadvantaged groups (Drewnowski & Specter, 2004). The relation between health,
socioeconomic status, and racial/ethnic minority status has been widely documented (Pyatak et
al., 2013). Low income, low educational attainment, and minority race or ethnicity have
consistently been shown, both independently and in combination, to be associated with poor
health and increased risk of health disparities (Pyatak, et al., 2013).

**Issue for the clinical pathway.** The clinical pathway is a tool that is used to ensure
standardization in health care. It promotes structured and efficient care for patients and is based
on evidenced-based practice. Guidelines are typically used to guarantee proficiency of clinical
pathways. The clinical pathway is to serve as a organized method by which providers within the
Midwestern health center can screen for and identify patients with a BMI ≥ 25 and refer them to
a program that will assist the patient in preventing chronic conditions that are associated with
being overweight/obese by reducing the BMI, promoting health, and encouraging healthy
lifestyles.

**Problem statement for the project.** Inequalities in overweight or obesity are considered
a major contributing factor to the higher morbidity and mortality accruing from chronic
conditions such as cardiovascular disease (CVD), diabetes, and some cancers seen among lower
socioeconomic groups (Sui et al., 2011). Therefore, weight loss is the cornerstone to decreasing
risk factors for chronic conditions in economically disadvantaged populations. A wellness
program that specifically targets weight loss will help to promote healthy behaviors and
lifestyles. Given the increasing prevalence of overweight and obesity, it is crucial to increase
access to such programs and find cost-effective ways to provide assistance with weight loss to
large numbers of individuals that are economically disadvantaged.
**Problem statement for the clinical pathway.** Clinical pathways are instituted in several health care facilities and, in fact, are considered a requirement by regulatory bodies. However, the Midwestern health center is not currently using a clinical pathway specifically for wellness associated with weight loss. It is imperative that a clinical pathway be implemented at the Midwestern health center in order to ensure the management of high-quality care for the population it serves. This will allow the Midwestern health center to serve as a benchmark for community centers that serve similar populations.

**Rationale for the project.** The basis for the program at the Midwestern health center is to address issues related to increased BMI ≥ 25, while promoting health and addressing the need for changing lifestyle behaviors that lead to chronic conditions in economically disadvantaged populations in an urban health center.

**Rationale for the clinical pathway.** The basis for the clinical pathway at the Midwestern health center is to institute a systematic process for the Midwestern health center providers of all types to engage patients with a BMI ≥ 25 to lose weight, with one aspect being to encourage patients to become part of the behavioral weight loss program.

**Defining the Threat to Health as Overweight and Obese**

Overweight and obesity are both labels for ranges of weight that are greater than what is generally considered healthy for a given height (Center for Disease Control and Prevention [CDC], 2013). The terms also identify ranges of weight that have been shown to increase the likelihood of certain diseases and other health problems (CDC, 2013). An adult who has a BMI between 25 and 29.9 is considered overweight and an adult who has a BMI of 30 or greater is considered obese. Obesity has a multitude of negative effects on various chronic conditions and, in fact, is the leading cause of some chronic conditions. The 2013 Prevention Status Reports
released by the CDC reports that obesity is associated with increased blood pressure, unhealthy cholesterol levels; chronic diseases such as heart disease, diabetes, some cancers, and osteoarthritis; complications of pregnancy; and premature death (CDC, 2013). In the US, during 2009-2010, based on data from the National Health and Nutrition Examination Survey, approximately 17% of children and adolescents and 36% of adults were obese (CDC, 2013). It is estimated that this number will reach 44% by 2018 (Sherman, Crocker, Dill, & Judge, 2013). Also, US medical costs associated with adult obesity were approximately $147 billion in 2008 (CDC, 2013). A higher prevalence of adult obesity was found in the Midwest. Specifically, in the state of Missouri, 29.6% of adults were obese in 2012 (CDC, 2013). This is a minute decrease from 30.3% in 2011. Furthermore, no state met the Healthy People 2010 goal to lower obesity prevalence to 15% (CDC, 2013).

The Midwestern health center provides primary and preventative health services in medically underserved areas. Patients are uninsured and underserved residents of St. Louis and surrounding communities. The Midwestern health center serves a total of 43,000 patients in St. Louis. Of the 43,000 patients, 18,000 which is 41.8% of those patients have a BMI ≥ 25 and are considered an “at risk” population.

Analyses of data for 68,556 US adults in the National Health Interview Survey by the CDC showed that the highest obesity rates were associated with the lowest incomes and low educational levels (Drewnowski & Specter, 2004). There is no question that obesity and chronic conditions follow a socioeconomic gradient such that the burden of disease falls disproportionately on people with limited resources, racial/ethnic minorities, and the poor (Drewnowski & Specter, 2004).
The concerns of effects of being overweight/obese as it pertains to the Midwestern health center involve a multitude of issues that surround the nature of being economically disadvantaged. These issues include personal, societal, and environmental barriers such as lack of perceived importance, lack of resources, access to care, and inadequate or lack of transportation. These matters are often problematic in reducing BMI, encouraging healthy lifestyles, and promoting health. The Midwestern health center patients are faced with adversities that make it difficult to accomplish these goals. Moreover, with the effects of being overweight/obese in this particular population, the disproportion of the burden of disease will continue to expand which will serve as a catalyst for further increased health care costs and poorer overall health.

**Possible Approaches**

The impact of behavior change interventions in economically disadvantaged communities must be understood prior to incorporating these interventions for a wellness program. Two frequently cited behavioral approaches include motivational interviewing (MI) and health coaching (HC). The well-documented methods and effectiveness of MI for improving multiple chronic diseases have been demonstrated over the past three decades (Simmons & Wolever, 2013). Conversely, HC is a relatively new field that has emerged within the last decade and has been conceptualized and operationalized across a continuum of practices with a wide range in quality care and equivocal evidence (Simmons & Wolever, 2013). Both approaches have origins in behavior change theories and use interpersonal skills that emphasize empathy and meeting patients where they are (Simmons & Wolever, 2013). Motivational interviewing and health coaching are synergistic, but distinct approaches that can be effectively employed to achieve behavior change in healthcare (Simmons & Wolever, 2013).
Motivational interviewing. Motivation seems to be both the key element as well as the central puzzle in efforts to change behavior (Butterworth, 2008). From this, stems the concept of MI. MI is a directive counseling method that elicits self-motivational statements and provides information only after the person has expressed an openness and readiness to change (Befort et al., 2008). The motivational interviewing approach has been incorporated across diverse populations, settings, and health topics (Butterworth, 2008). This concept emerged as an effective therapeutic approach within the addictions field such as illegal drugs and alcoholism. Since then, motivational interviewing, implemented in a formal setting, has been studied and found to be effective in many chronic medical conditions with behavioral components, including overweight/obesity (Cox et al., 2011). Generally, it has been effective in improving general health status or well-being, promoting physical activity, improving nutritional habits, encouraging medication adherence, and managing chronic conditions such as mental illness, hypertension, hypercholesterolemia, obesity, and diabetes (Butterworth, 2008).

Motivational interviewing is not based on the information model; does not rely on information sharing, advice giving, or scare tactics; and is not confrontational, forceful, guilt ridden, or authoritarian (Butterworth, 2008). Rather, an understanding of what triggers change shapes this technique. An interaction that is consistent with motivational interviewing principles consistently outperforms traditional advice giving in the treatment of a broad range of behavioral problems and diseases (Butterworth, 2008). It is a communication method and interpersonal style that focuses specifically on helping patients to resolve ambivalence and make a commitment to change (Simmons & Wolever, 2013). Motivational interviewing is recognized as a technique that is not based on any one particular theory (Hardcastle, Blake, & Hagger, 2011). It has been linked to constructs from a number of social-psychological models of health behavior and represents an
integrated set of theory-based components (Hardcastle et al., 2011). Specifically, motivational interviewing has been shown to provide three of the key components that support psychological needs based on the self-determination theory, to enhance self-efficacy from the social cognitive theory, and to increase attitudes and perceived behavioral control from the theory of planned behavior (Hardcastle et al., 2011). It works by activating patients’ own motivation for change and adherence to treatment (Rollnick, Miller, & Butler, 2008). It is a skillful clinical style for eliciting from patients their own good motivations for making behavior changes in the interest of their own health (Rollnick et al., 2008). It is based on 3 concepts – collaboration, evocative, and honoring the patients autonomy.

**Health coaching.** Health coaching has emerged as a fresh, new approach that guides physicians and clinicians to use the patient’s agenda to enhance compliance with healthy behaviors, to prevent exacerbations of chronic illness, and to support lifestyle change (Huffmann, 2009). It surfaced from the concept of motivational interviewing. Health coaching can be defined as helping patients gain the knowledge, skills, tools, and confidence to become active participants in their care so that they can reach their self-identified goals (Bennett, Coleman, Parry, Bodenheimer, & Chen, 2010). It involves health education and health promotion. It is a systematic, collaborative, and solution-focused process that facilitates the enhancement of life experience and goal attainment regarding health (Simmons & Wolever, 2013). Further, it is a method of engaging and guiding others to “discover” and address their own ambivalence about health behavior change (Huffmann, Bello, & Bissontz, 2008). Addressing ambivalence to health behavior change is the primary factor that health coaching seeks to resolve (Huffmann, 2009). Health coaching involves a supportive, yet structured partnership between the participant and the coach that effectively motivates behavior change (Huffmann, 2010). The
underlying theoretical model asserts that behavior changes can be sustained when linked to personal values and sense of purpose (Simmons & Wolever, 2013).

The basic concepts of health coaching include active listening, working from the patient’s agenda, identifying patient beliefs and values, eliciting change talk, and recognizing the patient’s readiness to change (Huffmann, 2010). Additionally, health coaching contains five principle roles which are providing self-management, bridging the gap between clinician and patient, helping patients navigate the health care system, offering emotional support, and serving as a continuity figure (Bennett et al., 2010). Health coaching as an obesity intervention has yet to be fully integrated into primary care practice but has been proven to be effective in corporate wellness and behavioral weight loss programs (Sherman et al., 2013). Health coaching is both a conceptual framework and a distinct job function with potential to improve patient care (Bennett et al., 2010). It involves a paradigm shift from a directive to a collaborative model so that care teams and patients pursue an active partnership, instead of patients being passive recipients of care (Bennett et al., 2010).

**Purpose as Set Forth by the Health Center**

With the Midwestern health center team, the purpose of the wellness program is to promote health and healthy lifestyles that will decrease risk factors for and prevent chronic disease. The wellness program is two-fold, with a behavioral component and a physical component. The behavioral aspect of the program can be viewed as how a person thinks, feels, and acts when faced with life’s situations; how they evaluate their challenges and problems, and explore choices. The program will attempt to alter the participants’ attitude toward being healthy by making healthy lifestyle changes to encourage weight loss with health education, information sharing, building skills and knowledge, increasing confidence, and overcoming obstacles that are
unique to the economically disadvantaged. The physical aspect of the program can be viewed as the general condition of a person’s body and the clinical process and standards of care that are important to facilitate health. The program will aim to prevent disease and the risk of disease as it relates to the benefits of weight loss. A clinical provider is needed for this part of the program in order to address questions and concerns regarding the physical aspects of care including medications, etiology and symptomology of disease, and self-management for chronic disease. This aspect of the program will be delivered in the same fashion as the behavioral component.

With the Midwestern health center team, the purpose for the clinical pathway is to provide a systematic method for the Midwestern health center providers to screen and identify patients with a BMI ≥ 25 and refer them to a wellness program to lose weight by making healthy lifestyle changes. In keeping the Midwestern health center in line with the standard of care and achieving the goal of high-quality care, the most recent clinical guidelines in regard to obesity serves as the basis for the clinical pathway. The 2013 AHA/ACC/TOS Guideline for the Management of Overweight and Obesity in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and The Obesity Society is incorporated into the Midwestern health center’s clinical pathway in order to provide care based on the best evidence. The goals of the American College of Cardiology (ACC) and the American Heart Association (AHA) are to prevent cardiovascular (CV) diseases, improve management of people who have these diseases through professional education and research, and develop guidelines, standards and policies that promote optimal patient care and cardiovascular health (Jensen et al., 2013). Toward these objectives, the ACC and AHA have collaborated with the National Heart, Lung, and Blood Institute (NHLBI) and stakeholder and professional organizations to develop clinical practice guidelines for assessment of CV, lifestyle
modifications to reduce CV risk, and management of blood cholesterol, overweight and obesity in adults (Jensen et al., 2013). The guidelines attempt to define practices that meet the needs of patients in most circumstances (Jensen et al., 2013). As these guidelines are not specific to the economically disadvantage populations, the clinical pathway that will be instituted at the Midwestern health center will, subsequently, be tailored to meet the needs of the population that the Midwestern health center serves.

**Refinement and Refocusing of the Purpose as it Relates to the DNP Student**

The DNP student is essential in this endeavor as she provides the clinical expertise to development of both the wellness program and the clinical pathway. Specific goals for achieving the purpose of the behavioral health aspect include (a) creating the wellness program with an interdisciplinary team at The Midwestern health center, (b) implementing the program using behavioral strategies, (c) serving as a facilitator during the program sessions to help combine the behavioral and physical components, (d) evaluate the program for trends in attendance and weight loss, and (e) plan for sustaining the program once the DNP student has completed her course.

Specific goals for achieving the purpose of the clinical pathway include (a) creating the clinical pathway, (b) implementing the clinical pathway including getting other health care professionals interested in the program, and (c) evaluate the clinical pathway by reviewing the trends in provider use/referrals.

The collaboration model used for this project comes from the National Network for Collaboration framework (see Appendix A) that is used to support collaboration among universities and community-based programs to marshal faculty and program resources to directly respond to the economic, social, and human stresses faced by children, youth and families.
This model seems appropriate due to the nature of this project, in that, the project focuses on responding to the economic and human stresses of the population that is served by the Midwestern health center. The purpose of collaboration for this project includes accomplishing shared vision, decreasing BMI by making health lifestyle changes for weight loss, and impact benchmarks as well as building an interdependent system to address the “at risk” population at the Midwestern health center.

The core of the model represents the common ground of understanding and is centered on a never-ending process, whereby people in the collaboration articulate their common interests - around vision, mission, values and principles (National Network for Collaboration, 1995). This is essential for any successful collaboration. The core for this project stems from the need to promote and improve the health of economically disadvantaged patients with a BMI ≥ 25. The outcomes of the model are the desired conditions for the community and reflect success in working to reach the collaboration’s vision (National Network for Collaboration, 1995). The outcomes for this project are weight loss that decreases BMI and promotes healthy lifestyle changes. The combination of these outcomes further reduces risk factors for CVD and other co-morbidities. Impact measures are embedded within the context of outcomes and are specific measures related to any outcome defined by a collaborative group (National Network for Collaboration, 1995). Impact measures related to this project are behavior changes within the participants, the Midwestern health center team members, and the resources necessary for the program development i.e. skills and time. The relationship between the core and the outcomes in this model are bidirectional, in that, one is contingent on the other. When outcomes are defined and focused on in the initial stages of collaboration, the likelihood of effectiveness and greater participation is increased (National Network for Collaboration, 1995). Contextual and process
factors represent elements that can either enhance or inhibit collaborations and ultimately the desired outcomes (National Network for Collaboration, 1995). Contextual factors for this project include the mandate for an updated clinical pathway specifically for overweight/obese patients, the relationship between the participants and the Midwestern health center team/staff, and increasing wellness to reduce risk factors. Process factors are understanding the population, building a sense of trust, the impact of the weight loss, and communication among the team members. The variables of this project overlap between the components of this collaboration model.

Continued and iterative consensus is used in shared decision making; roles, time, and evaluations are formalized; and links are written in work assignments and tasks. Ideas and decisions are equally shared throughout the planning and implementing phases and will be used in evaluation and sustaining. This model was presented to the Midwestern health center team who was in agreement with this process.

Questions

This project sought to answer the following questions: Can the Midwestern health center successfully create, implement, evaluate, and sustain a group behavioral health program for weight loss using principles of motivational interviewing and health coaching? Can the Midwestern health center successfully update a clinical pathway for reducing BMI?

Significance

Lower socioeconomic status at both the individual and neighborhood level is associated with increased health risks. Weight loss can reduce this risk, but there are few studies that target this population (Wilcox, Sharpe, Parra-Medina, Granner, & Hutto, 2010). Despite high obesity prevalence rates, few low-income persons participate in weight loss maintenance trials (Samuel-
Hodge et al., 2013). Combating obesity among low-income women presents unique challenges that must be addressed if weight loss interventions are to be successful (Moredich & Kessler, 2013). Environmental, personal, and behavioral determinants of BMI are not well understood in the low-income demographic (Dressler & Smith, 2013). Few evidenced-based weight loss treatment options exist for medically vulnerable patients in the primary care setting (Bennett et al., 2012). Tailored weight management programs, addressing the needs of obese low-income persons may produce greater weight loss (Martin et al., 2005). Therefore, The Midwestern health center is an ideal setting to institute a wellness program and apply the evidence that does exist to meet the needs of this population. The wellness program is essential as it provides an opportunity for the economically disadvantaged to participate in such a program that they would, otherwise, not have access to. Dispelling this barrier will produce a domino effect, in that; it will provide them with the proper knowledge and skills that are necessary to make lifestyle changes to reduce risks for chronic diseases. Also, by this program not having an associated fee, as it is a service provided by the clinic as part of their care, it dispels a major barrier that is inherent in this population.

**Literature Review**

This section includes a comprehensive review of the literature related to behavioral strategies for weight loss in economically disadvantaged populations. Key words used for this literature review include weight loss, behavioral interventions for weight loss, motivational interviewing, health coaching, poverty, economically disadvantaged, recruitment, and retention.

**Methods**

Databases used to search the literature were PubMed, CINAHL, Scopus, Ovid, Medline, and the Cochrane Library. This yielded several articles. However, after reading titles, abstracts,
results, discussions, and reviewing tables, the majority of these articles were excluded, as they were not specifically focused on one or more of the concepts pertinent to this project. Many articles were disconnected from the focus of this project such as weight loss not being an outcome, pertained to different populations and age groups, and/or not conducted in the United States. With regard to weight loss in the economically disadvantaged, one article was found for MI, zero articles for HC, and four articles for recruitment and retention strategies (see Appendix B).

**PICOT Questions**

*What is the effect of MI on weight loss in the economically disadvantaged?*

Unfortunately, there was very limited literature found on the effects of motivational interviewing on weight loss in the economically disadvantaged populations. There was only one article that specifically addressed MI, weight loss, and an economically disadvantaged population. This particular study by Befort et al. (2008) compared MI with health education (HE), which is different from HC as it focuses on didactic information and advice, in low-income African American women. Befort et al. (2008) found that both groups lost a significant amount of weight in kilograms, although one behavioral strategy was not superior to the other. This seems to be in line with previous literature on MI; it is beneficial for weight loss. It also strengthens the belief of it being beneficial for the economically disadvantaged as well.

*What is the effect of HC on weight loss in the economically disadvantaged?*

Unfortunately, there was no specific literature found on the effects of health coaching on weight loss in the economically disadvantaged populations. However, there have been studies done with health coaching pertaining to other relevant issues such as diabetes, hypertension, hyperlipidemia, and physical activity as per Margolius et al. (2012), Bennett et al. (2009), and
Thom et al. (2013). There is literature on health coaching and the underserved per Jordan (2013), but not related specifically to weight loss. There have also been studies on how the health coaching technique can help to reduce health care costs as per Bennett et al. (2010) and Huffman (2010). This seems to be a newer concept in weight loss in an economically disadvantaged population that has not been embarked upon just yet. Nevertheless, the findings from the health coaching literature, in a broader sense, prove to be a promising technique for health promotion, prevention, and chronic disease.

**What recruitment strategies are effective for weight loss programs for the economically disadvantaged?** Recruitment and retention are important determinants of success for programs to improve nutrition and lifestyle behaviors, especially when participants are from low-income and racial/ethnic minority populations (Chang, Brown, & Nitzke, 2009). They are key functions for programs promoting nutrition and other lifestyle behavioral changes in low-income populations (Chang et al., 2009). Recruitment and retention of participants, especially low-income and minority members, in longitudinal weight loss trials has not proven an easy task in previous studies (Warner et al., 2013). Therefore, there are few studies that research this phenomenon as it pertains specifically to weight loss.

Warner et al. (2013) conducted a study, Be Fit Be Well which was a randomized, controlled, intervention trial funded by the NHLBI that investigated the challenges of recruitment in this population and attempted revised strategies to overcome this problem. There was a recruitment period of fifteen months. The authors altered the recruitment protocol to fit the needs of their economically disadvantaged population. They used active recruitment methods using an adaptive and comprehensive approach. Warner et al. (2013) were able to recruit a predominantly low-income minority population from three local community health centers and
have 86% complete their 24-month follow-up visit (Warner et al., 2013). This exceeded their goal of 80%. They attributed their success to partnerships with the health center staff, systems for timely tracking of recruitment and the monitoring of activities, and using data to generate new ideas and strategies with quick implementation. Specific strategies such as use of flexible part-time staff, outsourcing recruitment calls to a call center, passive PCP approval, and a willingness to meet the needs of individual participants in a variety of ways (taxi vouchers, evening/weekend appointments, allowing children at appointments, offering home visits) were most effective in achieving strong recruitment and retention numbers.

Parra-Medina et al. (2004) conducted a study, the POWER study, evaluating the feasibility of recruiting overweight adults with diabetes, in medically underserved areas, to a weight management intervention consisting of a 12-month clinical trial of two weight management programs and usual care (Parra-Medina et al., 2004). The authors used medical record review, prescreening phone calls, screening visits, monetary incentives, establishing rapport with participants, and child care as recruitment strategies. Their final sample was overwhelmingly older, female, African American, obese, low socioeconomic status based on education and income (Parra-Medina et al., 2004). They found the most successful and important strategies to be (a) establishing a partnership with community health centers, (b) hiring staff form the community that reflected the study participants’ cultural backgrounds, (c) marketing the project of physicians, staff, and patients, (d) positive reinforcement/social supportiveness, (e) staging recruitment and informed consent process, (f) monitoring progress, and (g) free transportation (Parra-Medina et al., 2004).

Chang et al. (2009) specifically reviewed strategies in low-income overweight and obese mothers that were participating in a community-based randomized pilot trial, Mothers in Motion.
Participants were recruited from three WIC programs. One of the aims was to identify successful strategies for participant recruitment and maintaining active participation (Chang et al., 2009). It is stated that presenting a program to potential participants during the recruitment phase needs a careful planning in finding that some overweight and obese mothers were not interested in a program to prevent weight loss due to previous failures and that some were still looking for quick fixes rather than long term lifestyle behavioral changes (Chang et al., 2009). Subsequently, a recruitment strategies used by the authors was using an interactive DVD with the key message being “happy and healthy family” rather than “prevention of weight gain”. Other strategies were showing respect, establishing rapport, providing incentives, and childcare. Specifically, Chang et al. (2009) found that talking to them individually was more successful than recruiting 2 or more at the same time and that the WIC mothers who refused initially decided to participate after they saw the positive interaction between recruiters and their children.

**What retention strategies are effective for weight loss programs for the economically disadvantaged?** Retention in weight loss trials has been an ongoing challenge (Warner et al., 2013). Long-term weight loss trials have traditionally had low to moderate retention levels (Warner et al., 2013). Factors contributing to low retention rates among middle-aged overweight and obese women who participated in weight loss interventions have been reported (Chang et al., 2009). Although overweight low-income women are interested in losing weight, they rarely take part in organized weight loss programs (French, Neumark-Sztainer, Story, & Jeffery, 1998).

French et al. (1998) investigated barriers for participation in weight loss programs among low-income women. The authors developed and evaluated the feasibility and effectiveness of a weight loss program for low-income women that addressed childcare and program fees as
barriers to participation (French et al., 1998). The effectiveness of monetary incentive coupons for increasing attendance was also examined (French et al., 1998). Findings revealed that women with higher education, employed, older, and less depressed were most likely to attend sessions. Subsequently, women who attended four or more sessions lost more weight than those who attended zero to three sessions (French et al., 1998). There was no significant difference in attendance with those who receive monetary incentive coupons. Ultimately, French et al. (1998) found that targeting program fees and childcare did not have a strong effect on attendance or weight loss among low-income women in a weight loss program and incentive coupons did have a significant effect on attendance or weight loss. It was presumed that unmeasured stressors associated with having a low income contributed to low participation rates (French et al., 1998).

The current literature addresses retention strategies along with recruitment strategies, as recruitment and retention are often concepts that are presented and discussed on a contingent basis. Strategies for both concepts are done simultaneously. Parra-Medina et al. (2004) found that the main reasons for dropping out included family/personal issues and time constraints. The highest retention rates were in the usual care group, which consisted of only one meeting with a nutritionist over the 12-month period (Parra-Medina et al., 2004). This was only significant at 3 months. The rationale for this finding was subject burden associated with the one of the treatment interventions – intensive lifestyle intervention.

Chang et al. (2009) had a retention rate of 59.3% at six months. This compared to 47% for a community-based weight management program for overweight and obese adults per other researchers and 73% for a primary care weight management intervention for low-income African-American women aged 18 to 65 years old. Chang et al. (2009) found that the main reasons for dropouts were loss to follow up due to disconnected phones and self-reported loss of
interest. Findings were consistent with previous studies that reported difficulties in maintaining participation in longitudinal studies (Chang et al., 2009).

**Results and Synthesis**

Despite there being a plethora of literature on the burden and associations between being overweight and obese and the economically disadvantaged, fewer interventions have been directed to this population. Further, motivational interviewing and health coaching have not been readily explored within this phenomenon. These behavioral techniques are newer concepts for weight loss programs for the economically disadvantaged, which is evident by the current literature. General research on these techniques appears to be beneficial. As they have been promising in other areas of interest within health care, they seem to be an innovative approach in overall health as well as weight loss for the economically disadvantaged. Didactic techniques and traditional teaching methods are becoming techniques of the past as the paradigm shift to patients becoming more autonomous and viewed as an active participant in their own health care continues to evolve and become prevalent within our health care system. As there is a paucity of literature on these behavioral strategies in this specific context, the concepts will be applied to this particular project as it has been applied in chronic conditions such as diabetes and hypertension.

There are clinical trials that have been done to address the burden of overweight/obese and weight loss in the low-income populations such as the WISEWOMEN project that has become the Weight-Wise programs, Be Fit Be Well, The Shape Program, and Sisters Taking Action for Real Success (STARS), which is currently being done. They have innovative tailored programs that are typically based on the Social Cognitive Theory, Transtheoretical Model of Behavior Change, and self-efficacy. These studies are specifically focused on culturally
appropriate, group-based behavioral and social support interventions for weight loss and maintenance (Wilcox et al., 2011). There is also a study currently being done specific to low-income Latinos, Vivamos Activos Fair Oaks Program, that is focused on lifestyle interventions to reduce BMI. The Weight-Wise program is an intervention that was modeled after the Diabetes Prevention Program and PREMIER lifestyle interventions (Wilcox et al., 2011). This intervention is a 16-week intervention with weekly group sessions, with the focus alternating by week on healthy eating or physical activity (Gustafson et al., 2009). This is the basic prototype in which the wellness program at the Midwestern health center will be based. There have been several similar interventions among this population that have been successful. It seems to be the general consensus among these studies that the tailored intervention groups for weight loss and maintenance have had positive results (Bennett et al., 2012; Bennett et al., 2013; Martin et al., 2006; & Samuel-Hodge et al., 2012). To further confirm this, a systematic literature review performed by Moredich & Kessler (2013) found similar results stating that customized weight loss interventions are effective in obese, low-income women.

One study was found on MI (Befort et al., 2008) and based on this one study that compared MI and HE, MI is not recommended over HE as it pertains to attendance and weight loss. However, both groups did demonstrate a significant amount of weight loss. Currently, The Shape Program and Be Fit Be Well studies are using MI as part of the behavioral change component.

There were no studies found on HC in the specific population studied that focused on attendance and weight loss. After reviewing the recent clinical trials, none of them have utilized HC in regard to weight loss and attendance in the economically disadvantaged as it is a relatively new field. Therefore, further research is needed to explore this strategy within this domain.
Randomized control trials on the economically disadvantaged focused on the effectiveness of interventions and not on testing the recruitment and retention strategies. Current literature related to recruitment and retention among the economically disadvantaged revealed several issues to overcome. The common themes identified as well as those that facilitated success include (a) using monetary incentives, (b) establishing and maintaining partnerships with the community health centers and staff, (c) establishing a rapport with the potential participants, (d) social support i.e. transportation and child care, (e) matching ethnic backgrounds of recruiters with participants, (f) women are more likely to participate in programs, and (g) keep content brief and concise. Also, the study by Warner et al. (2013) found it very effective to have follow up visits at the health centers to be an important advantage in retaining participants and also linking the intervention to the patient’s primary care. Therefore, this finding will coincide perfectly with the program being implemented at The Midwestern health center since it is the participants are already receiving their primary care within this system.

**Strategies and Lessons Learned From the Literature**

The need to include ethnically and socioeconomically diverse populations in research is widely acknowledged, however, important challenges have been identified in recruiting, retaining, and implementing culturally relevant interventions in diverse populations (Pyatak et al., 2013). Poverty, and its impact on life stability, is an important factor to consider when planning research among populations living under this condition (Pyatak et al., 2013). Pyatak et al. (2013) identified themes that underscored challenges for recruiting and retaining economically disadvantaged populations which include tracking and scheduling participants, retaining staff, collecting accurate data, negotiating health and socioeconomic tradeoffs, understanding life and medical histories, and defining the scope of the intervention. In the
literature explored pertaining to weight loss programs, tracking eligible participants, negotiating tradeoffs, and defining the scope of the intervention were typical themes that were embedded challenges in describing recruitment and retention processes. These issues were revised in a few of these studies, but will continue to arise, if not properly addressed at the onset of program planning. Strategies that are necessary should aim at the themes noted in the previous section, in order for any program targeted for the economically disadvantaged to be successful.

**Strategies and Lessons Learned by the Health Center Personnel**

The current literature was presented to the Midwestern health center team. They were enthused about the findings. Consequently, the findings ignited further eagerness after learning that motivational interviewing and health coaching were fairly new concepts in weight loss in the population that the Midwestern health center serves. The team members were very accepting of this endeavor as it serves as an innovative approach, not only to the specific population, but also to the Midwestern health center as a major organization within the Midwest area.

**The Model Upon Which the Overall Evidence-Based Approach is Based**

The model on which this project is based is the Johns Hopkins Nursing Evidence-Based Practice Model (see Appendix C). This model facilitates the translation and application of evidence into practice. The Johns Hopkins model facilitates bedside nurses in translating evidence to clinical, administrative, and educational nursing practice (Melnyk & Fineout-Overholt, 2011). At the core of the Johns Hopkins model is evidence (Newhouse, Dearholt, Poe, Pugh, & White, 2007). In the Johns Hopkins model the EBP is a problem-solving approach to clinical decision-making within a health care organization that integrates the best available scientific evidence with the best available experiential (patient and practitioner) evidence, considers internal and external influences on practice, and encourages critical thinking in the
judicious application of such evidence to care of the individual patient, patient population, or system (Newhouse et al., 2007).

This model fits with the project because of the mere concept of taking the current literature on weight loss programs in the economically disadvantaged and applying it within the Midwestern health center organization. There is a current gap specific to this The Midwestern health center, in that, a wellness program focused on weight loss is needed, but there has been no implementation thus far. Therefore, examining the evidence and applying it particularly to this The Midwestern health center to fit their needs is appropriate in instituting such a program. This model provides a systematic process for establishing this program. Additionally, this model incorporates the use of an interdisciplinary team in which the basis of the program at the Midwestern health center is centered on. There are three major components in the John Hopkins model – practice question, evidence, and translation (PET) and within these components are eighteen prescriptive steps. (Melnyk & Fineout-Overholt, 2011). These steps are: Step 1 - Identify an EBP question, Step 2 - Define the scope of the practice question, Step 3 - Assign responsibility for leadership, Step 4 - Recruit an interdisciplinary team, Step 5 - Schedule a team conference, Step 6 - Conduct an internal and external search for evidence, Step 7 - Appraise all types of evidence, Step 8 - Summarize the evidence, Step 9 - Rate the strength of evidence, Step 10 - Develop recommendations for change in systems of processes of care based on the strength of evidence, Step 11 - Determine the appropriateness and feasibility of translating recommendations into specific practice setting, Step 12 - Create an action plan, Step 13 - Implement the change, Step 14 - Evaluate outcomes, Step 15 - Report the results of the preliminary evaluation to decision makers, Steps 16 - Secure support from decision makers to implement the recommended change internally, Step 17 - Identify the next steps, and Step 18 -
Communicate the findings (Newhouse et al., 2007). These steps are crucial to implementing the program at The Midwestern health center and have been followed thus far and have proven to be an iterative process.

**Final Evidence of Project Completion**

Implementation of the project was completed in July 2014. The following sections present the project development, implementation, and results of the project.

**The Evidence-Based Approach to Developing the Project**

In the development of the project, the first two components of the Johns Hopkins model, practice question and evidence were utilized. In applying these two concepts, the first ten steps are implemented. Based on the Midwestern health center’s need, appropriate questions were identified which were presented as PICO questions in a previous section. The PET process uses the PICO approach, which narrows the question (Newhouse et al., 2007). The scope of the questions was defined as a specific population, the economically disadvantaged, within a specific organization, the Midwestern health center, which allows for properly identifying stakeholders. Assigning responsibility for leadership was not followed per se as the various team members serve as leaders within their respective scopes. However, in regard to searching and synthesizing the evidence, the DNP student served as the leader and was responsible for keeping the other team members informed. Recruiting an interdisciplinary team was not an issue as the Vice President and Patient Car Medical Home (PCMH) director appointed them based on the disciplines needed to make this particular program meaningful. This was done prior to the addition of the DNP student. Scheduling team meetings were collectively. The team meetings were fundamental to the planning of the project. The DNP student was responsible for keeping minutes and presenting them back to the team as an executive summary at the following meeting.
(see Appendix D). The next four steps involve conducting the literature search that was the sole responsibility of the DNP student.

**Team Meetings**

The Midwestern health center team for the wellness program consists of a registered dietitian, two social workers that have the ability to practice as behavioral health consultants, a registered nurse, and the DNP student. Meetings have been held since January 2014. Team meetings were held weekly to biweekly depending on the responsibilities, information, and tasks needed to be obtained and completed prior to the following meeting. Meetings were held at one specific Midwestern health center location at the same time. Meetings were semi-formal and interactive.

**Development of Educational Manual and Planning Each Session**

The manual for the program sessions (see Appendix E) was made collaboratively with input from each team member based on what the Midwestern health center needed and what the clinical guidelines recommended for such a program. Decisions regarding the order of speakers, topics, time allotments, and activities were made collectively as well. The manual is based on respective knowledge and skill set of the team members’ disciplines. The registered dietitian does the introductions to the sessions. The registered dietitian also does the weigh-in for participants. The registered dietitian starts the program topics with nutrition. The registered nurse follows with activities to link the importance of the topics to their specific “real world” situations. The registered nurse provides the social support in the program. The registered dietitian, then, presents various aspects of physical activity. This is followed by the clinical component of the program in providing discussion of chronic diseases, which is presented by the DNP student. Lastly, the behavioral health strategies and related topics are given by the two
licensed social workers. Only one of the social workers will end the sessions with realistic goal setting with the participants based on information learned, in preparation for the next session.

**Development of the Clinical Pathway Including the Clinical Guidelines Used**

Healthcare providers are on the front line of the obesity epidemic – poised to identify who needs to lose weight for health reasons and in a prime position to direct successful weight loss efforts (Obesity Society, 2013). The American Heart Association, American College of Cardiology and Obesity Society has developed comprehensive treatment recommendations to help healthcare providers tailor weight loss treatments to adult patients affected by overweight or obesity (Obesity Society, 2013). The new guideline report is based on a systematic evidence review that summarizes the current literature on the risks of obesity and the benefits of weight loss (Obesity Society, 2013). It summarizes knowledge on diets for weight loss, the efficacy and effectiveness of comprehensive lifestyle interventions on weight loss and weight loss maintenance (Obesity Society, 2013). Therefore, these guidelines serve as the foundation in which The Midwestern health center’s clinical pathway will be built upon.

In researching these guidelines, there are three main components that are required for a comprehensive lifestyle program which includes a reduced calorie diet 1200-1500kcal/day for women and 1500-1800kcal/day for men, increased physical activity, at least 150minutes/week, which is at least 30minutes/day most days of the week, and behavior therapy consisting of self-monitoring of food intake, physical activity, and weight (Jensen et al., 2013). The guidelines advise overweight/obese individuals who would benefit from weight loss to participate for at least 6 months in a comprehensive lifestyle program that assists participants in adhering to a lower calorie diet and in increasing physical activity through the use of behavioral strategies, onsite, high-intensity (at least 14 sessions in 6 months) comprehensive weight loss interventions
provided in individual or group sessions by a trained interventionist, and prescribe face-to-face or telephone-delivered weight loss maintenance programs that provide regular contact at least monthly with a trained interventionist, all of which are rated as high strength of evidence (Jensen et al., 2013). This particular curriculum for weight loss has been shown to produce average weight losses of approximately 8 kg (17.6 pounds) in a six-month period when frequent on-site sessions are used which approx. to losses of 5 – 10% of initial body weight. (Jensen et al., 2013). This program will be used within the clinical pathway as an intervention for the Midwestern health center patients with the predetermined BMI. Nonetheless, the ultimate decision about care of a particular patient must be made by the healthcare provider and patient in light of the circumstances presented by that patient (Jensen et al., 2013). As a result, situations might arise in which deviations from these guidelines may be appropriate (Jensen et al., 2013). With respect to this, tailored interventions as well as unique considerations in the development and implementation of the clinical pathway are necessary for the economically disadvantaged. Therefore, the clinical pathway (see Appendix F) was altered to fit the Midwestern health center’s needs. Regular discussion with the PCMH director for collaboration on the clinical pathway was necessary to ensure the accuracy of their needs and utilization.

Consensus and Approval of the Education Manual and Session Plan

The consensus and approval of the educational manual was decided on in March 2014. Structure of the program and topics were discussed and approved unanimously among the team. However, it is understood that the topics may evolve as the program progresses based on the participants’ needs.
Consensus and Approval of the Clinical Pathway

The consensus and approval of the clinical pathway was decided on in June 2014. The clinical pathway was created using the Lucidchart program. It was approved by the PCMH director and the Midwestern health center team members. The needs of the Midwestern health center with respect to the most effective way to utilize the clinical pathway were met with incorporating the 2013 AHA/ACC/TOS obesity guidelines. The use of these guidelines allows the Midwestern health center to integrate the most recent and robust evidence-based practice into their organization and patient care practices. The implementation of the clinical pathway will be utilized as the program continues. The goal is for there to be a continued increase of participants in the program, which will lead to participants having healthier lifestyles and reduce BMI, as providers utilize the clinical pathway.

Dissemination of the Program Announcement and Clinical Pathway to Facilitate Buy-In

Dissemination of the session announcement was done via word of mouth from the Midwestern health center team members to the Midwestern health center providers and use of flyers, titled Chose to Lose (see Appendix G). The clinical pathway is distributed via the PCMH director.

The Evidence-Based Approach to Implementing the Project

With respect to the Johns Hopkins model, implementing the project reflects the third phase of the model’s process, which is considered translation. During this phase, the team determines if the changes to practice are feasible given the target audience (Newhouse et al., 2007). The change is then implemented and evaluated and the results are communicated to the appropriate individuals both internal and external to the organization (Newhouse et al., 2007). The next eight steps reflect the process used to implement the project at The Midwestern health
center. The appropriateness and feasibility of translating the recommendations into The Midwestern health center’s population was discussed and approved by the team during the team meetings and necessary resources were obtained and utilized including a digital scale, stadiometer, health coaches to schedule appointments for the program, and administrative staff to obtain necessary data. The action plan is the educational manual as it serves as the protocol and framework in which the program will be applied. Implementing the program has officially started with the first session complete. Evaluating the outcomes will be examined simultaneously as the sessions progress via debriefing meetings immediately following the sessions. Changes will be made accordingly, if needed. Reports of the results, changes, and communications of findings will be made during debriefing meetings as well as to the Vice President and PCMH director periodically. The registered dietitian and social workers will likely report this to the Vice President, PCMH director, and the DNP student.

**Setting and Sample**

The setting for this project was a Midwestern health center at two locations, site 1 and site 2. The Midwestern health center provides comprehensive primary and preventative health care services are through five health center locations in St. Louis, Mo. and provide a safety net to those without health insurance. No one is denied service based upon his or her inability to pay. In 2012, the Midwestern health center saw approximately 47,000 patients. Ninety percent of these patients were below 100 percent of the federal poverty level. Many of them suffer from chronic illnesses like cardiovascular disease and diabetes, which, if not detected early and controlled, could lead to more serious consequences, including death. The participants eligible for the wellness program are any adult patients, within the Midwestern health center system, with a BMI $\geq 25$. 

**Evaluation Framework for Program Sessions**

The framework used to evaluate the program sessions comes from the National Obesity Observatory (NOO). The National Obesity Observatory was established to provide a single point of contact for wide-ranging authoritative information on data and evidence related to obesity, overweight, underweight and their determinants (National Obesity Observatory, 2009). It is part of an executive agency of the Department of Health in England and was established to protect and improve the nation’s health and wellbeing and to reduce inequalities. The Standard Evaluation Framework (SEF) is a list of data collection criteria and supporting guidance for collecting high quality information to support the evaluation of weight management interventions (see Appendix H). The aim of the SEF is to support high quality, consistent evaluation of weight management; diet and physical activity interventions in order to increase the evidence base (National Obesity Observatory, 2009). This is particularly useful due to the nature of data to be observed during the program. However, there were items that were eliminated from this framework – item 5, 16, 20, 25, 27, 28, 29, 30, 32, 33, 35, 36, 37, 38, 39, 40, 42, 43, 44, 45, 52, 54, and 57. These items were eliminated because these outcomes were not investigated as part of this project and/or were not applicable to this particular population.

**Characteristics of the Program**

Detailed characteristics of the program to be implemented at the Midwestern health center were decided on during the planning phase and will likely evolve as the program continues. The official start date is March 27, 2014. Rooms are reserved through August 2014 at site 1 and site 2. Room numbers will not be on recruitment flyers, titled Choose to Lose. However, personnel at the front desk will tell participants the appropriate room. The topics for first 8 sessions are planned (see Appendix I). Any patient with BMI ≥ 25 can attend the wellness
program with varying levels of readiness and also, could be referred to the dietitian for individual consult, depending on their needs and achievements. The goal of the program is to decrease BMI, increase attendance/participation, and refer to an “advanced” group, possibly. This will be decided as the program continues to determine if there is an interest among the participants.

There are four health coaches, one at each site, who will make appointments with no registration required. Scheduling templates are currently in the Midwestern health center’s electronic health record system. Thirty participants are recruited for a goal of 12 participants at each session. Sessions are ninety minutes every Thursday 2-3:30pm every week at alternating locations (site 1 and site 2). Participants will sign in on and Excel spreadsheet used to verify attendance every session. Each of the three required components, diet, physical activity, and behavioral health, will be presented at every session. Every team member will present at every session. Teaching skills and information building with group discussion will be done at each session. Dietitian will weigh participants at the beginning of each session. Weights will be done as privately as possible in one corner with a digital scale at each session and height at initial session with stadiometer to ensure that valid and reliable measures are used. No other assessments will be done. Measures recorded on spreadsheets are height, weight, and attendance. Height and weight are later entered into the electronic health record system via the registered dietitian. There will be goal setting at the end of each session via the social workers that specialize in the behavioral techniques used. Team members will use their own educational materials. Healthy snacks will be provided on certain weeks. The snacks will be considered an incentive. This will replaces monetary incentives as this has been found to be helpful in current recruitment and retention literature. The snacks are also to provide participants of examples of eating healthful foods. Lastly, there is an option for participants to announce
improvements/weight loss during sessions or a team member to announce it with participants’ permission (these participants will be identified by registered dietitian during weigh-in). If there are Spanish-speaking participants, an interpreter will be provided. No follow up phone calls will be done due to the transient nature of this population.

**Forms for Information Collection**

The forms to collect height, weights, and names for attendance will be created on Excel spreadsheets by the registered dietitian, as this team member is responsible for collecting data. This is done at the beginning of each session. The dietitian will, then, enter heights and weights into the participants’ electronic medical chart after the sessions.

**Recruitment of Participants**

Data used to select participants include diagnosis codes for overweight, obese, and morbidly obese and anyone who has seen a provider within the last 12 months. Participants will be recruited via “Chose to Lose” flyers in the clinic and any self-referrals, referrals by health care providers, and team members or health coach referrals. Recruitment is an open enrollment process. Providers were given a two-week notice about Wellness Program. The two social workers put flyers in exam rooms and announced program to providers starting on March 10, 2014. PCMH nurses informed PCMH patients about program. Flyers were mailed to PCMH patients on March 7, 2014. The Midwestern health center will provide transportation for those participants who do not have Medicaid as Medicaid provides transportation for their members.

**Retention of Participants**

Retention is fairly contingent on recruitment strategies used. It has been reported and investigated simultaneously with recruitment in the literature. Although monetary incentives were not used during this program, providing healthy snacks served as an incentive to retain
participants. Not only was this strategy used to retain, but also serve as an example of healthy eating habits and food choices that will assist in weight loss.

**Educational Materials**

Team members will be using their own supplemental educational materials to stimulate discussion and teach. These will be for the participants’ benefit and will not be collected by the team.

**Procedure for Data Collection**

Anthropometric measures are used as a source of data for this project in order to calculate participants’ BMI. The CDC recommends measuring anthropometrics according to the 2013 Anthropometry Procedures Manual, which is the procedure that will be followed for this project. Participants in the wellness program understand and agree that their height will be recorded at their first session and their weights will be recorded every session thereafter. Participants’ are assured that all data will be kept confidential at the beginning of each session and will be entered into their chart. Their health care team at the Midwestern health center will only view this data when appropriate. The height is recorded via a stadiometer with a fixed vertical backboard and an adjustable headpiece. The procedure for measuring height includes:

- Participants are asked to remove any hair accessories that may affect an accurate measurement.
- They are asked to stand up straight against the backboard with both feet flat on the platform, with heels together and toes apart, ensuring that the head, shoulders and heels are touching the backboard.
- The head is aligned in the Frankfort horizontal plane in which the horizontal line from the ear canal to the lower border of the orbit of the eye is parallel to the floor and
perpendicular to the backboard

- The headpiece is then lowered so it sits firmly on top of the participants’ head
- The registered dietitian asks the participant to take a deep breath and hold this position (taking a deep breaths straightens the spine which yields a more accurate measurement) (CDC, 2013).

The weight is recorded via a digital weight scale that has been calibrated by the registered dietitian. The weight is measured in pounds so it is easy to translate to the participant. The procedure for measuring weight includes:

- The participants’ are asked to remove their shoes and jacket and/or sweater (they are not able to be in an exam gown based on the nature of the setting)
- The participants are asked to stand in the center of the scale platform with their hands at their sides looking straight ahead (CDC, 2013).

**Protection of Human Subjects**

Permission to initiate the project was obtained from the Vice President of the Midwestern health center.

**Results**

In this program, all participants had a BMI ($\text{lb/in}^2 \geq 25$. They were economically disadvantaged. All participants were female. Six sessions were held at site 1 and five sessions were held at site 2 for a total of eleven sessions thus far. Data were limited to attendance, BMI, and weight and reported as frequencies, ranges, modes, and means. These data were collected over 5 sessions for site 1 and over 6 sessions for site 2.
What are the overall findings regarding attendance reported by the registered dietitian at 3 months? There were a total of five participants at site 1 and eleven participants at site 2. The maximum number of participants at any given session at site 1 was three. The maximum number of participants at any given session at site 2 was seven. Attendance ranged from 1 to 5 sessions out of 6 at site 1. The mode was 1 session. Attendance ranged from 1 to 5 sessions out of 5 at site 2. The mode was 1 session.

What are the overall findings regarding BMI and weight reported by the registered dietitian at 3 months? The mean BMI fat at baseline for site 1 was 41.4 (range = 28.3 – 47.3) and the mean BMI fat at baseline for site 2 was 42.4 (range = 34.2 – 64.8). At site 1, the group as a whole regardless of the number of sessions attended had a reduction in BMI from 0 – 0.9. There was no increase in BMI at this site. At site 2, the group as a whole regardless of the number of sessions attended had a reduction in BMI from 0 – 1.1. There was no increase in BMI at this site. The mean weight at baseline for site 1 was 237.1 pounds (range = 174.8 – 299.8) and the mean weight at baseline for site 2 was 244 pounds (range = 194.6 – 364.2). At site 1, the group as a whole regardless of the number of sessions attended lost between 0.2 and 5.8 pounds. There was no weight gain at this site. At site 2, the group as a whole regardless of the number of sessions attended lost between 0.2 and 6.2 pounds. No one gained weight at site 2.

The Evidence-Based Approach to Evaluating the Project

The evaluation of this project is based on the CDC’s Framework for Program Evaluation in Public Health (CDC, 2011). Public health programs aim to prevent or control disease, injury, disability and death (CDC, 2011). This project is embedded in public health as the Midwestern health center serves the community. This program aims to prevent and control disease that could potentially lead to disability and/or death. The CDC has reported that programs that work well in
some settings fail dismally in others because of the fiscal, socioeconomic, demographic, interpersonal, and inter-organizational settings in which they are planted (CDC, 2011). This project focuses on the socioeconomic status of its participants. Keeping the socioeconomic status of the participants in the forefront of the planning, implementation, and evaluation stages helps to decrease chances of dismal outcomes and effectiveness. This project is a direct service intervention being that it is a program that offers education and self-management skills that promote healthy lifestyle changes focused on weight loss to reduce risk for chronic conditions. Assessing the value and impact of the program has been and will continue to be performed in a repetitious manner. The framework has six steps and the evaluation process has been used continuously throughout the program. The evaluation team is the same team that has developed and implemented the program.

Application of the CDC Model Regarding Evaluation

The first step is to engage stakeholders which were the Midwestern health centers’ Vice President and PCMH director, the Midwestern health centers’ staff such as health coaches and administrative staff, team members, providers, and the participants. The second step is to describe the program, which has been done in detail with the characteristics of the program. The characteristics of the program describe the targets, needs, outcomes, activities, and resources used and needed during the program. This was started during the planning phase and was updated throughout the process via regular debriefings. The third step is to focus the evaluation. This is rooted in the process evaluation part of the National Obesity Observatory core criteria tool used to specifically evaluate to program itself (Appendix H). The core criteria were modified based on the needs and outcomes of the program implemented at the Midwestern health center. The fourth step is to gather credible evidence, which was done by developing PICO
questions specifically, related to the population, indicators, and outcomes. The literature review provided evidence that was applied to the program. The results of the measurable outcomes and sources of data – weight and attendance, collected and reported by the registered dietitian, served as evidence for the effectiveness of the program.

The fifth step is to justify conclusions. After the data were collected and analyzed, it was compared to the program goals. There are high no show rates within the organization as a whole, subsequently, it was somewhat expected that this may carry over with the program. This suggests that retention strategies are instrumental in the success and effectiveness of the program. The reductions in BMI overall were minute. This is likely due to the data being collected only after a few sessions. It would have been ideal for the data to be collected and analyzed after session 14. At any rate, the findings are in line with the program goals. The program shows promise, albeit the program being in its infancy. Weight loss by attendance can be determined at a later time when there are more participants.

The sixth step is to ensure the use of the findings and share lessons learned. Findings will be presented in poster form at conference. Also, they were presented to the Midwestern health center team members. The team members expected the findings discussed. It was agreed that recruitment and retention are the biggest obstacles in making this program successful. The clinical pathway serves as a recruitment tactic for providers; however, its utilization is in its infancy as well. More Chose to Lose flyers have been made and distributed since the program’s inception. Team members continue to personally invite eligible participants.

**The Evidenced-Based Approach to Planning Sustaining the Project**

The plan for sustaining this project is based on the CDC’s Sustainability Planning Guide for Healthy Communities, which is the guide used to sustain the CDC’s Healthy Communities
Program (CDC, 2009). One of the efforts via this planning guide is to create sustainable, community-based improvements that address the root cause of chronic diseases and related risk factors (CDC, 2009). This is a direct replication of the type of program that is instituted at the Midwestern health center. The Sustainability Planning Guide is a synthesis of science- and practice-based evidence designed to help coalitions, public health professionals, and other community stakeholders develop, implement, and evaluate a successful sustainability plan (CDC, 2009). The goal of the Midwestern health center program is comparable to the premise of the CDC’s Healthy Communities Program which is to improve health and well-being of individuals by changing health-related behaviors which means addressing factors that influence those behaviors (CDC, 2009). This guide focuses on developing and implementing a sustainability plan that includes ten steps. Many of these steps and its principles overlap with the CDC’s Framework for Program Evaluation.

Application of the CDC Model Regarding Sustainability

The first step is to create a shared understanding of sustainability. The Midwestern health center team established this very early on in the planning stages as this program was intended to be a permanent intervention within the organization and part of the patients’ plan of care. The second step is to create a plan to work through the process. This is where the Midwestern health center team was formed. A multidisciplinary approach was deemed necessary to provide all the essential components to make this program a success. With this approach, resources for the participants are more accessible and they are able to obtain all the necessary information, education, and self-management skills needed to accomplish their weight loss goals. Team members collaborated effectively during the entire process and this is to continue. The third step is to position coalition efforts to increase the odds of sustainability. Assessing partnerships that
support the program was essential. This was accomplished, first, with the Vice President and PCMH director at the Midwestern health center as they helped to identify the need for the program and made other staff and providers aware of it. Also, the team members followed suit with connecting with the providers, administrative staff, and health coaches.

The fourth step is to look at the current picture and pending items. Since this is a brand new program for the Midwestern health center, there was nothing previously in place. A list of resources necessary for the program was compiled along with a list of activities for the program. This included the time of the staff at the Midwestern health center, digital scale, stadiometer for accurate heights, brief training of appointment scheduling for health coaches, creating flyers, discussing topics to be presented, and discussing the updating and utilization of the clinical pathway. The fifth step is to develop criteria to help determine which efforts to continue. Typically, this step is based on funding. However, luckily, this was not a significant issue for the Midwestern health center as there was no additional funding necessary to develop this program. In fact, the team members were being used more efficiently and able to reach more patients at a time in participating in the program. In regard to the clinical pathway, it serves as a systematic approach to chronic disease prevention; therefore, its use will be indefinite. However, it is understood that it may be altered, if needed, as the program and the organization itself evolves.

The sixth step is to decide what to continue and prioritize. Based on the findings thus far, recruitment and retention strategies are of priority. With the use of the clinical pathway and time, these issues are expected to improve. Tracking eligible participants and defining the scope of the intervention were considered and addressed from the onset and during the program and continue to be a priority. There were no activities or issues identified that will be discontinued thus far. The seventh step is to create options for maintaining priority efforts. Continued support from
staff and providers are essential in maintaining the efforts necessary to keep the program going. Feedback from the registered dietitian to the participants’ provider on their progress may help to increase support for the program. The eighth step is to develop a sustainability plan is combined with the ninth step, which is to implement the sustainability plan specifically with respect to the Midwestern health center because it was done simultaneously. The development and implementation of the sustainability plan has been executed with executive summaries for updates and progress, regular debriefings throughout the implementation process, review of goals, review of recruitment and retention strategies, and review of data and findings. The fact that the program becomes part of the participants’ plan of care also provides sustainability. Moreover, having the program sessions planned for the all fourteen sessions provides sustainability for the program. The sessions will be repeated. Session topics may be altered based on participant need and/or request. The tenth step is to evaluate outcomes and revise as needed. This step is embedded in the program evaluation previously discussed.

**Conclusion**

Using a multidisciplinary approach in regard to a wellness program that focuses on weight loss serves to combat several issues that are associated with the socioeconomically disadvantaged population. The program was open enrollment so there was no commitment required which made it flexible for the participants since this population is often transient. Because each class is on weight loss, participants get a lot of information and stories from various professionals at each visit so that even if they come once, they can take away something to assist in their weight loss endeavor. This population inherently lacks various resources. The program and the individual team members bridged this gap to accessibility to resources that the participants’ might not otherwise be exposed to. Since the population has limited insurance, if
they have it all, these payers do not typically cover services provided by a registered dietitian. Thus, having this program allows participants to see a registered dietitian for counseling on nutrition and exercise. There was no fee for the program, as typical weight loss programs require. Instead, the program is incorporated into the participants’ plan of care. This, in itself, validates the importance of addressing and conquering overweight and obesity within the Midwestern health center. The Midwestern health center serves as the primary medical home for this population providing primary care services; therefore, participants do not have to be referred out for the services and education that this program provides.

Specifically, using a combination of MI and HC in the program provided strategies to incorporate and utilize self-care management. The participants assessed their own motivation and readiness to change. Perhaps, the use of these strategies, made some participants realize that they were not as ready to engage in a weight loss program at the time, which may serve as a reason for not returning. In any case, they were able to create their own action plan to accomplish their weight loss goals after all necessary information and education were given. This was demonstrated with the goal setting part of the program delivered by the social workers. The classroom style with group interaction provided a trusting partnership between the participant and the team members.

Can the Midwestern health center successfully create, implement, evaluate, and sustain a group behavioral health program for weight loss using principles of motivational interviewing and health coaching? Yes. The Midwestern health center has demonstrated these capabilities in order to promote healthy lifestyle changes for weight loss for the population it serves. Can the Midwestern health center successfully update a clinical pathway for reducing body mass index? Yes. The current evidence-based guidelines were applied and structured to the Midwestern
health center’s needs for provider use in reducing BMI.

**Future Directions**

Evidence-based guidelines support strategies aimed at intensive behavioral counseling and regular, moderate physical exercise for prevention and treatment of adult obesity (Christie, Meires, & Watkins, 2007). Although the guidelines used for this project were not specifically aimed toward the socioeconomically disadvantaged population, its application is likely to provide similar outcomes. The strategies and lessons learned from the program so far continue to confirm the need for effective recruitment and retention strategies, including tracking eligible participants and negotiating socioeconomic tradeoffs. MI and HC as a part of this program continue to show promise in regard to its use with the socioeconomically disadvantaged. These strategies allowed the participants to become active in their goals and overall health.

Reducing BMI within the economically disadvantaged will help to decrease BMI among the state and national populations, as they are included in the populations. As of 2011, 15.8% of the Missouri population is at or below poverty compared to 15.9% of the US population (United States Census Bureau, 2012). In targeting this population, it helps to reduce risk factors and chronic conditions that will contribute to the overall health of the population as a whole. In doing so, reaching the Healthy People 2020 goals for weight loss may not seem far-fetched seeing as though no state met the goals for 2010. This program falls directly in line with the concepts of the Healthy People 2020 initiatives, in that, interventions to improve weight can help change individuals’ knowledge and skills, reduce exposure to foods low in nutritional value and high in calories, or increase opportunities for physical activity (Healthy People 2020, n.d.). Interventions can help prevent unhealthy weight gain or facilitate weight loss among obese people and they
can be delivered in multiple settings, including health care settings, worksites, or schools (Healthy People 2020, n.d.).

The advanced practice nurse is in a unique position to impact weight loss and reduction of BMI among the socioeconomically disadvantaged by bridging the gap for accessing resources, being an advocate for weight loss activities by promoting healthy lifestyles, and providing necessary education related to weight loss and chronic disease in a primary care setting. By including an advanced practice nurse in the multidisciplinary team, the advanced practice nurse is able to provide medical education to the participants. Consequently, the participants are able to get the same information, if not more, than their primary care providers would give. There is also more time allotted to give and explain the information that the participants would not otherwise receive during a regular medical visit with their providers.

Furthermore, the doctor of nursing practice education has provided an opportunity to apply current literature and evidenced-based practice into the Midwestern health center organization. This has been influential in keeping the Midwestern health center with the best practices possible and ensuring quality care for their patients for improved health outcomes.
Appendices

A. National Network for Collaboration Model
B. Evidence Tables for Literature Review
C. John Hopkins Nursing Evidence Based Model
D. Executive Summaries
E. Education Manual for Program Sessions
F. BMI Clinical Pathway
G. Choose to Lose Flyer
H. Standard Evaluation Framework Core Criteria
I. Session Topics
Appendix A

National Network for Collaboration Model

![Diagram of Collaboration Framework]

**Figure 2: Grounding: Diversity**
## Appendix B

Evidence Tables From Literature Review

### Table B1
Clinical Question: What is the effect of motivational interviewing on weight loss in economically disadvantaged persons?

<table>
<thead>
<tr>
<th>Author</th>
<th>Sample size, Study Design, Setting, Inclusion Criteria, Groups, and Measures</th>
<th>Weight (kg)</th>
<th>Attendance (sessions)</th>
</tr>
</thead>
</table>
| Befort et al, 2008 | 44 obese AA women; Randomized; AA women recruited from a community health center serving predominantly lower-income AAs in Kansas City, MO; Inclusion criteria were >18 years of age, BMI>30, not pregnant or planning pregnancy for 6 months, not involved in any other weight loss program, free from psychiatric illness/substance abuse, able to walk for at least 10min, not planning to move out of state for 6 months, able to obtain medical clearance from PCP; Groups were weight loss program + MI (n=21) who received 4 30min individual sessions w/ an advanced clinical psychology student and weight loss program + HE (n=23) which were given by same students and structured using handouts; Measures were program adherence, dietary intake, PA, weight/height, motivation, and self-efficacy for diet/exercise | MI and HE groups lost a significant amount of weight in kg  
Main effects for condition were not statistically significant for weight outcomes (p=.13 to .95) and BG effect sizes were trivial to small Cohen’s d= -.04 to -.27  
Mean            BGD  
MI    -2.6           0.6  
HE    -3.2  
P=NS  
Statistically significant – NO  
Direction – not as expected  
Magnitude - small | MI group attended a mean of 7.2 group sessions  
HE group attended a mean of 9.4 group sessions; Cohen’s d= -.46 (p>0.05), not statistically significant  
Mean BGD  
MI    7.15           2.20  
HE    9.35  
P=NS  
Statistically significant – NO  
Direction – not as expected  
Magnitude – moderate |
### Table B2
Clinical Question: What are the recruitment strategies for a weight loss program in the economically disadvantaged persons?

<table>
<thead>
<tr>
<th>Author</th>
<th>Sample size, Study Design, Setting, Inclusion Criteria, Groups, Measures</th>
<th>Strategy</th>
<th>Results/Attendance/Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warner et al, 2013</td>
<td>365 participants; Randomized; Community health clinics in Boston neighborhoods; Eligibility criteria were &gt;21 years old, BMI 30-50, dx with HTN with prescribed antihypertensive med, Groups for outcomes specific to HTN were usual care group and intervention group; Measures were recruitment and retention activities</td>
<td>Protocol: Identify potentially eligible patients via medical review</td>
<td>&gt;95% of enrolled patients were identified via medical record review</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Revised strategies: Provider referrals</td>
<td>&lt; 20 referrals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Self-referrals via flyers in waiting rooms/patient rooms</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Refer a friend</td>
<td>&lt; 10 inquiries most of which were ineligible</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Newspaper ads</td>
<td>&lt; 20 inquiries (only 1 enrolled)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Protocol: patient names given to PCP for approval and contact</td>
<td>Passive approval decreased identification time to initial patient contact</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Revised strategies: Implemented passive provider approval system</td>
<td>29 still waiting on provider approval as opposed to 219 waiting on provider approval prior to this system;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Protocol: Intro letter sent and RA confirm eligibility</td>
<td>454 potentially eligible patients had never been reached at end of recruitment</td>
</tr>
<tr>
<td>Revised strategies:</td>
<td>Revised strategies:</td>
<td></td>
<td></td>
</tr>
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<td>---</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Collaborate w/ health center adm staff to get updated patient contact info</td>
<td>Hired and trained part-time staff to help with assessments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchased online people search website for up to date patient info</td>
<td>Protocol: 2 RAs responsible for completion of baseline and follow up assessments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mailed self-addressed, postage-paid card asking best times to contact; card completion for $75 gift card raffle</td>
<td>Of the 1,406 med records reviewed, 79% (1,106) met eligibility criteria</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hired off-site call center to make intake calls</td>
<td>Medical record review (dx of DM, age, BMI&gt;25)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved weekly call volume</td>
<td>Prescreening phone call</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Few cards returned for patients with incorrect info</td>
<td>Of the 1,406 med records reviewed, 79% (1,106) met eligibility criteria</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Website did provide correct contact info</td>
<td>60% (664) of the 1,106 were successfully contacted for a prescreening phone call; successful contacts were during weekdays (95%) with preferred time being AM (33%) and afternoon (57%); mean # of attempts were 1.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parra-Medina et al, 2004</th>
<th>189 subjects; Randomized; 2 community health centers in rural medically underserved counties in SC; Inclusion criteria were &lt;45 years old, dx of diabetes; There were 3 intervention groups – intensive lifestyle, reimbursable lifestyle, and usual care; Measures were recruitment and retention strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical record review (dx of DM, age, BMI&gt;25)</td>
<td>Of the 1,406 med records reviewed, 79% (1,106) met eligibility criteria</td>
</tr>
<tr>
<td>Prescreening phone call</td>
<td>60% (664) of the 1,106 were successfully contacted for a prescreening phone call; successful contacts were during weekdays (95%) with preferred time being AM (33%) and afternoon (57%); mean # of attempts were 1.8</td>
</tr>
<tr>
<td>Chang et al, 2009</td>
<td>129 participants; Randomized; 3 WIC programs in Michigan; Inclusion criteria were non-pregnant AA and WW 18-34 years old, BMI 25.0-39.9; Groups for Mothers in Motion (MIM) intervention group (diet, PA, stress management, usual WIC care) and control group (usual WIC care and an option of receiving an interactive DVD); Measures were fat/fruit/veggie intake, PA, perceived stress, affect, depression, and</td>
</tr>
</tbody>
</table>

|  | Screening visits | Randomized visit | 21% (236) of those contacted via phone and were interested; 187 completed first visit and 164 complete second visit | 143 were successfully randomized |

|  | Monetary incentives at screening visit 1 and randomization ($10 gift certificate to local grocery store and $25 after randomization); intended to acknowledge patient contribution and encouraged participation | Final sample was older, female, AA, obese, low SES based on education and income; successful strategies were partnering with CHC, positive reinforcement/social supportiveness, monitoring progress, and free transportation | |

|  | Baby-sitting | WIC mothers who refused initially decided to participate after they saw the positive interaction between recruiters and their children | |

|  | Talking to them individually was more successful than recruiting 2 or more at the same time | |

<p>| | | | |
|  | | | |</p>
<table>
<thead>
<tr>
<th><strong>height/weight</strong></th>
<th><strong>Eakin et al, 2007</strong></th>
<th><strong>Identify patients from clinic database who met eligibility criteria, sent letters with stamped self-addressed postcards signed by PCP describing study and recommending participation, if postcards were not returned, f/u phone calls were made (this procedure has been used in previous evaluations of the intervention on largely white patient samples which resulted in high participation rates)</strong></th>
<th><strong>605 patients were mailed letters of which 9% (56) returned post cards declining further contact; successful calls were made to 62% (345) of remaining patients (average 3 calls to make contact)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>200 patients; Randomized; CHC providing primary care to primarily low-income and the medically underserved in urban north Denver w/ large % of Spanish-speaking patients; Inclusion criteria were 1 or more chronic conditions for which a lifestyle intervention would be appropriate, &gt;30 years old, having a phone, not planning to move during study’s time frame; Groups for Resources for Health study were intervention group and usual care group; Measures were collected as part of the baseline assessment of study participants</strong></td>
<td><strong>200 patients agreed to participate (33% of original pool of 605)</strong> Of 605, 57% were reached by phone and 78% of those reached by phone and eligible for study participation)</td>
<td><strong>Females were 2.16 times more likely to participate</strong></td>
<td></td>
</tr>
</tbody>
</table>
## Table B3
Clinical Question: What are the retention strategies for a weight loss program in the economically disadvantaged persons?

<table>
<thead>
<tr>
<th>Author</th>
<th>Sample size, Study Design, Setting, Inclusion criteria, Groups, Measures</th>
<th>Strategy</th>
<th>Results/Attendance/Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>French et al, 1998</td>
<td>55 participants; Randomize; Public health clinics; Inclusion criteria not discussed; Treatment groups were identical in content and format and provided fee child care during sessions</td>
<td>One of the treatment groups received weekly incentive coupons of $10 for free fruits/veggies; coupons were not contingent on weight loss and were given at the end of each session</td>
<td>Attendance did not differ by treatment groups Women with higher incomes were most likely to attend sessions Mean weight change was -1.5lbs and did not differ by treatment group Women who attended &gt;4 sessions lost more weight than those who attended 0 to 3 sessions which is statistically significant (p&lt;.003) Incentive coupons did not have a sig effect on attendance or weight loss. Major finding of study is that program fees and child care did not have a strong effect on attendance or weight loss among low-income women in a weight loss program.</td>
</tr>
<tr>
<td>Parra-Medina et al, 2004</td>
<td>189 subjects; Randomized; 2 community health centers in rural medically underserved counties in SC; Inclusion criteria were &lt;45 years old, dx of diabetes; There were 3 intervention groups – intensive lifestyle, reimbursable lifestyle, and usual care; Measures were recruitment and retention strategies</td>
<td>Monetary incentives ($25 pharm gift certificate and refrigerator magnet at 3 months, $20 grocery store gift certificate and t-shirt at 6 months, and $20 grocery store gift certificate and cookbook at 12 months)</td>
<td>Main reasons for dropping out included family/personal issues and time constraints; highest retention rates were in the usual care group which was only statistically significant at 3 months (p=.02)</td>
</tr>
<tr>
<td>Chang et al, 2009</td>
<td>129 participants; Randomized; 3 WIC programs in Michigan; Inclusion criteria were non-pregnant AA and WW 18-34 years old, BMI 25.0-39.9;</td>
<td>$40 for completing a phone interview and returning to WIC clinic where they had been recruited to have weight taken; $10 for</td>
<td>Of 118 participants, 59.3% (70) at 6 months and 40.7% (48) at 1 year completed phone interviews and 49.2% (58) at 6 months and 33% (39) at 1 year returned to</td>
</tr>
<tr>
<td>Study</td>
<td>Participants</td>
<td>Intervention Details</td>
<td>Outcomes</td>
</tr>
<tr>
<td>-------</td>
<td>--------------</td>
<td>----------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Groups for Mothers in Motion (MIM) intervention group (diet, PA, stress management, usual WIC care) and control group (usual WIC care and an option of receiving an interactive DVD); Measures were fat/fruit/veggie intake, PA, perceived stress, affect, depression, and height/weight completion of final data; $20 if interviews were complete for all 3 points of data collection</td>
<td>WIC clinics to have weight taken Main reasons for dropouts were loss to f/u due to disconnected phones and self-reported loss of interest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eakin et al, 2007</td>
<td>200 patients; Randomized; CHC providing primary care to primarily low-income and the medically underserved in urban north Denver w/ large % of Spanish-speaking patients; Inclusion criteria were 1 or more chronic conditions for which a lifestyle intervention would be appropriate, &gt;30 years old, having a phone, not planning to move during study’s time frame; Groups for Resources for Health study were intervention group and usual care group; Measures were collected as part of the baseline assessment of study participants</td>
<td>Alternative contact phone numbers; at least 10 calls attempted per participants at varying times of the day and days of the week including evenings and weekends Home visits were made to alleviate transportation difficulties</td>
<td>Of 200 enrolled, 68.5% (137) were reached for 6 weeks assessment and 81.0% (162) were reached for 6 month assessment Intervention did not impact retention rates</td>
</tr>
</tbody>
</table>
Appendix C

Johns Hopkins Nursing Evidence Based Practice Model

![Diagram of the Johns Hopkins Nursing Evidence Based Practice Model]

Evidence-Based Practice Process

Practice Question, Evidence, Translation (PET)

Source: Urol Nurs © 2012 Society of Urologic Nurses and Associates
Executive Summary 1 – Midwestern Health Center Wellness Program 1/16/14 (Revised)

**Problem/Issue:** We are all here to combat issues related to increased body mass index (BMI) >25, while promoting health and addressing the need for changing lifestyle behaviors that lead to chronic conditions in disadvantaged populations in an urban clinic system.

**Purpose:** With the Midwestern health center team, the purpose is to: 1) Create a wellness program,
2) Implement the program with both behavioral and physical aspects,
3) Implement a clinical pathway and/or process including getting other health care professional interested,
4) Serve as a facilitator during program sessions,
5) Evaluate the program including participant attendance
6) Evaluate the clinical pathway, and
7) Plan for sustaining the program.

**Team Members Thus Far:** Vice President; RN Director; Social Workers; Dietitian; Nurse Care Manager

**The Program:** The **Behavioral Aspect** of the program can be viewed as: how a person thinks, feels and acts when faced with life’s situations; how they evaluate their challenges and problems, and explore choices combined with **Physical Aspect** of the program that can be viewed as: the general condition of a person’s body and the clinical process and standards of care that are important to facilitate health

**Literature Review-Evidence Underpinning the Program:**
- Principles of Motivational Interviewing (MI) include Asking, Listening, Informing; MI is usually for individuals, but attempt to apply in group setting; results of effectiveness of MI are mixed, but using principles of MI remains a highly recommended strategy by experts.
- 5 A’s Framework includes Assess, Advise, Agree, Assist, Arrange and is a highly recognized process
- Lifestyle Interventions for Weight Loss per AHA/ACC/TOS guidelines suggest >14 on-site contacts in first 6 months which is standard for behavioral weight loss interventions

**Clinical Pathway:** Standard of Care includes 1) risk factor assessment in adults starting at age 20 y,
2) Family history of CHD updated regularly,
3) Smoking status, diet, alcohol intake, and physical activity assessed at every routine evaluation,
4) Blood pressure, body mass index, waist circumference, and pulse (to screen for atrial fibrillation) recorded at each visit, at least every 2 y and,
5) Fasting serum lipoprotein profile (or total and HDL cholesterol if fasting is unavailable) and fasting blood glucose measured according to patient’s risk for hyperlipidemia and diabetes, respectively, at least every 5 y; if risk factors are present, every 2 y.

**Literature Review-Evidence Underpinning the Pathway:** Use Chronic Disease Management Model for Primary Care of Patients with Overweight and Obesity and Lifestyle Management Recommendations 2013
Executive Summary 2 – Midwestern Health Center Wellness Program 1/23/14 (Revised)

Description of the Program According to the 2013 AHA/ACC/TOS Overweight and Obesity Guidelines: (a) advise overweight/obese individuals who would benefit from weight loss to participate for at least 6 months in a comprehensive lifestyle program that assists participants in adhering to a lower calorie diet and in increasing physical activity through the use of behavioral strategies (High Strength of Evidence), (b) onsite, high-intensity (at least 14 sessions in 6 months) comprehensive weight loss interventions provided in individual or group sessions by a trained interventionist (High Strength of Evidence), and (c) prescribe face-to-face or telephone-delivered weight loss maintenance programs that provide regular contact at least monthly with a trained interventionist (High Strength of Evidence).

Program Requirements: There are 3 components that are required for a comprehensive lifestyle program; (a) reduced calorie diet – 1200 to 1500 kcal/day for women and 1500 to 1800 kcal/day for men; (b) increased physical activity – at least 150 min/week, which is at least 30 mins/day most days of the week; and (c) behavior therapy – self monitoring of food intake, physical activity, and weight (High Strength of Evidence)

This particular curriculum for weight loss has been shown to produce average weight losses of approximately 8 kg (17.6 lbs) in a 6-month period when frequent on-site sessions are used which approximates to losses of 5-10% of initial body weight.

Effectiveness of Telephone-Delivered Intervention: Interventions that are delivered by telephone or face-to-face counseling, and which also include the use of either commercially-prepared prepackaged meals or an interactive web based program, the phone delivered and face-to-face delivered interventions produced similar mean net weight losses of approximately 5 kg (11 lbs) at 6 and 24 months (Low Strength of Evidence).

Individual vs Group: There does not appear to be substantial differences in the size of weight losses produced by individual or group-based sessions when high-intensity, comprehensive lifestyle intervention delivered on-site (Low Strength of Evidence).

Health Coaching: There was nothing found in the 2013 guidelines specifically regarding health coaching – this will have to be searched in current literature as it pertains to weight loss.

Characteristics of Program (so far): a) anyone can attend, open enrollment with varying levels of “readiness”, b) goal of 12 participants, c) 90 min sessions on Thursday afternoons at site 1 and site 2, d) sessions will be appointment based (necessary for documentation and transportation), e)
behavioral component at each session, f) teaching skills and info building w/group discussion, g) ultimate goal is to decrease BMI, increased attendance/participation, referral to “advanced” group.

The “advanced” group is an opportunity for those who are more committed to the weight loss program.
Executive Summary 3 – Midwestern Health Center Wellness Program 2/6/14 (Revised)

Low-income population and weight loss: Currently not addressed in 2013 guidelines. Time and money are the main barriers to healthy eating among the low-income population. Fast food/unhealthy food is cheaper and easily accessible than the market/grocery store. There is a popular misconception among the low-income population of “the bigger the better”. Therefore, weight gain is equivalent to being satisfied and happy. If weight is lost, then that tends to mean something is wrong. Also, among low-income women and physical activity, they tend to put their husband and children first. The need and/or desire for exercise are rarely a priority, which ties into lack of time. One way they have fit this in is with playing with their active children. Transportation is also a barrier as they have mentioned dangerous neighborhoods, traffic, and distance. Solutions mentioned included ways to incorporate fitness into daily schedules, having weekly sessions to increase morale, learning exercises that can be done at home, taking home information about chronic diseases, and getting statistics of persons that are similar to them.

Updated Characteristics of Program: (a) flyer Choose To Lose with scale and food with start date March 27, 2014 (other slogans to be used throughout the program); (b) any patient with BMI>25 can attend, varying levels of readiness; (c) BMI >25 will be referred to the wellness group and BMI >25 could be referred to the dietitian for individual consult; (d) 4 health coaches, 1 at each site, will make scheduled appointment with no registration required; (e) recruit 30 participants for a goal of 12 participants; (f) 90 min sessions every Thursday 2-3:30pm every week at alternating locations (MOF and Soulard); (g) sign in on attendance sheet every session; (h) each component at every session; (i) every team member presents at every session; (j) teaching skills and info building with group discussion; (k) weigh as privately as possible in one corner with digital scale at each session and height at initial session with stadiometer (no other assessments to be done); valid and reliable height and weight measures used; (l) goal setting at end of each session; (m) only measures recorded on spread sheet are height and weight; (n) goal to decrease BMI, increase attendance/participation, referral to “advanced” group; and (o) no follow up phone calls.

Contacts: Social worker checking with Jennifer regarding intake/contact for program and available rooms for the sessions, RN making flyers and checking with IT for all BMI reports. Data will be gathered based on (a) diagnosis codes for overweight, obese, and morbidly obese; and (b) anyone who has seen a provider within the last 6-12 months.
Recruitment Plan: Participants will be recruited through (a) flyers in the clinic and any self-referrals, (b) HCPs referral, and (c) team or health coach referrals. Need to consider how to make HCPs aware of the program and this process – potentially 2-week notice for all providers.

Mass mailings: This will include all PCMH patients with a BMI >25. This is to be reported via Trevor.

Retention Plan: Do we have a plan to keep participants engaged in this program? And is there a process?

Program Evaluation: Use CDC’s framework. Engage stakeholders – providers, management, participants, funding agencies, NCQA. Describe the program – combat issues related to increased BMI, while promoting health and addressing the need for changing lifestyle behaviors that lead to chronic conditions in disadvantaged populations. We are currently in the planning stage. Focus Evaluation Design – Is the program working? Use process evaluations. Is the program being implemented as intended? Gather Credible Evidence – Literature review, group discussions, and observations. Justify Conclusions – analyze and interpret findings and make judgments. Use of Evaluation Findings – continuous feedback and dissemination.

Plan for Sustaining Program: Continued communication, feedback, and marketing. Document and communicate efforts and successes to stakeholders and community.
Executive Summary 4 – Midwestern Health Center Wellness Program 3/13/14 (Revised)

Midwestern Health Center Statistics: Grace Hill currently serves a total 43,000 patients. 18,000 have a BMI >25. There are currently 91 PCMH patients with BMI >25.

Updated Characteristics of Grace Hill’s Program: (a) flyer Choose To Lose with scale and food with start date March 27, 2014 (other slogans to be used throughout the program); (b) any patient with BMI>25 can attend, varying levels of readiness; (c) BMI >25 will be referred to the wellness group and BMI >25 could be referred to the dietitian for individual consult; (d) 4 health coaches, 1 at each site, will make scheduled appointment with no registration required; (e) recruit 30 participants for a goal of 12 participants for each session; (f) 90 min sessions every Thursday 2-3:30pm every week at alternating locations (site 1 and site 2); (g) sign in on attendance sheet every session; (h) each component at every session (diet, physical activity, behavioral); (i) every team member presents at every session; (j) teaching skills and info building with group discussion; (k) weigh as privately as possible by the registered dietitian in one corner with digital scale at each session and height at initial session with stadiometer (no other assessments to be collected); valid and reliable height and weight measures used; (l) goal setting at end of each session; (m) only measures recorded on spread sheet are height, weight, and attendance; (n) goal to decrease BMI, increase attendance/participation, referral to “advanced” group; and (o) no follow up phone calls, (p) rooms are reserved through August 2014, (q) room numbers will not be on flyers, people at the front desk will tell participants the room, (r) topics for first 8 sessions are planned, (s) scheduling templates are now in the system, (t) if there are Spanish speaking participants, an interpreter will be provided, (u) official start date is March 27th at site 1 and April 3rd at site 2, (v) each team member will use their own educational materials, (w) dietitian will weigh participants at beginning of each session, (x) a spreadsheet using Excel will be created to record height and weight and sign in sheets for recording information, (y) healthy snacks will be provided on certain weeks, (z) option for participants to announce improvements/weight loss during sessions or a team member to announce it with participants’ permission (these participants will be identified by dietitian during weigh-in)

Updated Team Members: Nancy LCSW will be resigning and her last day is March 11th. Her supervisor, Rajeev LCSW has agreed to take her place in the program. Rajeev has experience with teaching in the Diabetic Cluster group. Decision to be made regarding authorship between
them. Rajeev will add a “mindfulness” component within the Behavioral Strategies i.e. relaxation, meditation.

**Updated Recruitment Plan:** Data used to select participants include diagnosis codes for overweight, obese, and morbidly obese and anyone who has seen a provider within the last 12 months. Participants will be recruited through (a) flyers in the clinic and any self-referrals, (b) HCPs referral, and (c) team member or health coach referrals. Providers were given a 2-week notice about Wellness Program. Rajeev and Nancy have put flyers in exam rooms and announced program to providers on 3/10/14. PCMH nurses have informed PCMH patients about program. Flyers were mailed to PCMH patients on 3/7/14. Grace Hill will provide transportation for those participants who do not have Medicaid, as Medicaid provides transportation for their members.

**Project Questions:** (1) Can Grace Hill successfully create, implement, evaluate, and sustain a group behavioral health program for weight loss using principles of motivational interviewing and health coaching? (a) What is the overall trend in attendance reported by the registered dietitian at four months? (b) What is the overall trend of weight loss reported by the registered dietitian at four months?

**Clinical Pathway Questions:** (1) Can Grace Hill successfully create a clinical pathway for reducing BMI? (a) What is the overall trend in provider referrals to the program reported by PCMH director at four months?

**Refining Clinical Pathway:** Tameka contacted in regards to specific criteria for clinical pathway. Will plan to meet with her the end of March or beginning of April to discuss details.
Executive Summary 5 – Grace Hill’s Wellness Program and Clinical Pathway 6/12/14

Program Progress – we are on Session #6; there have been no delays are setbacks noted thus far as reported by the team members; participant feedback has been positive; individual appointments are offered at the end of every session with dietitian and/or social workers; participants are given opportunity to express and discuss their personal issues/challenges; other resources are offered as needed to help with their issues to keep them on track with healthy lifestyles; sessions 9-14 are currently being formed

Team Members – new RN will start at Session #7; all other team members remain the same

Recruitment – CHOOSE TO LOSE flyers remain in exam rooms; recruitment has been most successful with individual/personal invitation by staff members; health coaches continue to make appointments for interested and eligible participants

Retention - The maximum number of participants has been 7 so far; the majority of these participants are return patients; dietitian reported attendance trends today via Excel spreadsheets

Review of Literature – findings were presented to team members via power point slides

Clinical Pathway – this has been approved by PCMH director; pathway presented to team members; team members are pleased with clinical pathway as well; there are no suggestions provided as deemed fine as is; pathway utilization is anticipated by session 8

Program/Session Evaluation – NOO Standard Evaluation Framework for weight management interventions were presented; framework was reviewed and adjusted based on the needs, criteria, and outcomes of this weight loss program; items that were not crossed out on the tool are considered essential for program success; team members reviewed framework and adjustments and are pleased with all selections

Sustaining – use CDC Sustainability Model; there is no cost to Grace Hill other than staff time; no financial barriers have been identified; administration has supported continued to support the program; by the class being lead by a multi-disciplinary team, the loss of one group member will not cause the team to fall apart

Results – presented by registered dietitian today, weight and attendance trends on Excel spreadsheets

Publication – What is unique about this program for the purpose of publication? What journals would this type of program be included in? Team members to brainstorm on this and bring ideas; meeting scheduled for next week to specifically address publication; ideas expressed today
include a) people in poverty have a different set of needs; b) patients not being referred out for everything – Midwestern health center viewed as a “one stop shop”; c) the multidisciplinary approach to weight loss within the primary care setting establishes a medical home; d) the medical home model has been written into the ACA and, therefore, this program will be in compliance with this; e) using all resources available with the organization/facility; f) this program incorporates self care management and the participants have their own action plan in place to accomplish their weight loss goals (this is displayed with in the goal setting part of the program delivered by the social workers)
Appendix E

Educational Manual for Program Sessions

Outline for Midwestern Health Center Education Manual – 90 Minutes (Revised)

Weigh-In – 20 minutes (Registered Dietitian)

a) Weights to be measured as privately as possible via digital scale and heights to be measured at initial session

Introduction – 5 minutes (Social Worker or Registered Dietitian)

a) Welcome
b) Purpose of class

Physical Activity – 5 minutes (with 5 minute Q&A) (Registered Dietitian)

a) What is BMI and what does it mean?
b) Amount of physical activity in 1 week
c) Creative ways to accomplish necessary amount of physical activity
d) Weight loss success stories

Nutrition/Eating – 15 minutes (with 2 minute Q&A) (Registered Dietitian)

a) Discuss portion sizes, serving size, eating breakfast, eating control, late eating, temptations and snacks, calorie intake related to beverages, sugars and carbs, fiber, etc.
b) Core or health beliefs or misperceptions about foods
c) Misinformation and myths
d) Weight loss success stories

Chronic Disease – 10 minutes (Nurse Practitioner)

a) Briefly discuss weight-related chronic diseases (e.g. heart disease, diabetes, and hypertension)
b) Briefly discuss how losing weight decreases risks for diseases

Nursing – 10 minutes (RN Care Manager)

a) What does it mean to have a healthy weight?
b) Breaking out of bad habits-Activity as it relates to current habits such as television watching
c) Food choices on a budget using Schnucks circular
d) Weight loss success stories

Behavioral Strategies Including Motivational Interviewing Techniques – 15 minutes (with 5 minute Q&A) (Social Worker)

a) Harmful eating; Being honest with themselves how harmful things are
b) Denial and other emotional responses; Thoughts between emotions (including anger) and actions
c) Stress management (HALT), coping mechanisms
d) Sleep and weight gain; Normalizing sleep and eating schedule
e) Stigma, self-esteem, body image, discrimination, comparing themselves to others
f) Mindfulness and self-awareness; Feeling like they can take action; Psychology of marketing
g) Social eating and pressure; Social support-dealing with those who are profoundly discouraging
h) Weight loss success stories

Summary and Goal Setting for Next 2 Weeks – 5 minutes (Social Worker)

a) Help participant make realistic, achievable, short-term goals
Appendix F

BMI Cluster Clinical Pathway

1. **Patient Encounter**
   - Measure weight, height, calculate BMI
   - **BMI > 25**
     - **Yes**: Blood pressure, fasting blood sugar, fasting lipid panel
     - **No**: Assess readiness to make lifestyle changes to achieve weight loss (all levels of readiness)

2. **Assess readiness to make lifestyle changes to achieve weight loss (all levels of readiness)**
   - **No**: Advise to avoid weight gain, address and treat other risk factors
   - **Yes**: Determine weight loss and health goals and intervention strategies; Document self-management goals; Refer to BMI class

3. ****Comprehensive lifestyle intervention: CHOOSE TO LOSE high-intensity lifestyle intervention Refer to Chronic Disease Dept.

4. **Evaluate for weight loss >5% and sufficient improvement in health targets at 6 months**
   - **Yes**: Follow up with provider and weight loss maintenance
     - **Yes**: Intensive behavioral treatment; Reassess and address medical or other contributory factors; Individual consultation with Registered Dietician
     - **No**: Continue intensive medical management of CVD risk factors and obesity-related conditions; Individual consultation with Behavioral health consultant and Registered Dietician
   - **No**: Reassess for weight loss >5% and sufficient improvement in health targets

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*Assess risk for cardiovascular disease and/or presence of obesity-related comorbidities i.e. hypertension, diabetes, dyslipidemia.

**Ask questions about history of weight gain and loss over time, details of previous weight loss attempts, dietary habits, physical activity, family history of obesity, and other medical conditions that may affect weight.

***The most effective behavioral weight loss treatment is in-person, high-intensity (at least 14 sessions in 6 months) comprehensive weight loss interventions provided in individual or group sessions. The 3 principal components of an effective high-intensity, on-site comprehensive lifestyle intervention include moderately reduced calorie diet, increased physical activity, and the use of behavioral strategies to facilitate adherence to recommendations. This has been shown to produce a weight loss of approximately 17.6 pounds in 6 months which approximates losses of 5-10% of initial body weight (Jensen et al., 2013).

Adapted from 2013 AHA/ACC/TOES Obesity Guidelines
Appendix G

Choose to Lose Flyer

TODAY IS THE CHANCE TO CHANGE YOURSELF FOR THE BETTER

CHOOSE TO LOSE!

STARTING MARCH 27, 2014

Meet your Dietitian!

Healthy Eating Planning

Exercise Tips

Stress Management

For more information contact:

Come join our class, and learn more about weight management and how to improve your health.
Appendix H

Standard Evaluation Framework Core Criteria

The National Obesity Observatory was established to provide a single point of contact for wide-ranging authoritative information on data and evidence related to obesity, overweight, underweight and their determinants.

The Standard Evaluation Framework is a list of data collection criteria and supporting guidance for collecting high quality information to support the evaluation of weight management interventions.

This is a quick reference guide to the core criteria of the Standard Evaluation Framework. Essential criteria are presented as the minimum recommended data for evaluating a weight management intervention. Desirable criteria are additional data that would enhance the evaluation.

Supporting guidance for each criterion is available from www.noo.org.uk/ef. This describes why particular criteria have been categorised as essential or desirable, and gives further information on collecting data.

<table>
<thead>
<tr>
<th>Part one: Intervention details</th>
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<tbody>
<tr>
<td>1. Title/name of intervention</td>
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<tr>
<td>2. Aims and objectives (including primary and secondary outcomes)</td>
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<td>3. Intervention timescale (exposure, quantity and duration)</td>
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<td>4. Intervention delivery dates</td>
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<td>6. Duration of funding (including dates)</td>
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<td>7. Location and setting</td>
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<tr>
<td>8. Description of intervention:</td>
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<td>• target population</td>
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<td>• context</td>
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<td>• delivery method</td>
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<td>• deliverer</td>
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<td>• unit of delivery</td>
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<td>• details of quality assurance mechanisms</td>
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<tr>
<td>9. Rationale for intervention (including theoretical basis)</td>
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<td>10. Core staff competencies required</td>
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<td>11. Incentives for attendance</td>
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<tr>
<td>12. Details of training needs (including quality assurance of training)</td>
</tr>
<tr>
<td>13. Method of recruitment and referral</td>
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<tr>
<td>14. Participant consent mechanism</td>
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<tr>
<td>15. Participant admission/exclusion criteria</td>
</tr>
<tr>
<td>16. Cost of intervention per participant</td>
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<td>17. Cost to participant</td>
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<tr>
<td>18. Detailed breakdown of cost</td>
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<td>19. Type of evaluation and evaluation design</td>
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<td>20. Details of quality impact assessment</td>
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<td>21. Relevant policy and performance context</td>
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<tr>
<td>22. Details of health needs assessments that have been conducted</td>
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<tr>
<td>23. Contact details</td>
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<tr>
<td>24. Commissioner(s) of the intervention and sources of funding</td>
</tr>
<tr>
<td>25. Declaration of interest</td>
</tr>
<tr>
<td>26. Details of type and extent of any clinical involvement</td>
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</tbody>
</table>
**Part two: demographics of individual participants**
- 27. Age
- 28. Sex
- 29. Ethnicity
- 30. Disability
- 31. Measure of socio-economic status
- 32. Additional information including marital status, medical history, smoking status, parity and family make-up
- 33. Details of parental weight status (for children)

**Part three: baseline data**
- 34. Height and weight (to calculate Body Mass Index)
- 35. Additional proxy measures for adiposity
- 36. Measure(s) of dietary intake and behaviour
- 37. Measure(s) of physical activity levels and behaviour
- 38. Potential facilitators of, and barriers to, lifestyle change

**Part four: follow-up data**

**Impact evaluation**
- 39. Follow-up data: minimum of three follow-up points, including at one year
- 40. Follow-up data on key measures (height, weight, physical activity and diet) over a greater term than one year
- 41. Height and weight (to calculate Body Mass Index and attendance)
- 42. Follow-up data on additional proxy measures for adiposity (collected at baseline)
- 43. Dietary intake and behaviour
- 44. Physical activity levels and behaviour
- 45. Follow-up measures on potential facilitators of, and barriers to, lifestyle change (collected at baseline)

**Process evaluation**
- 46. Number invited
- 47. Number recruited
- 48. Number attended each session or contact point
- 49. Number completed
- 50. Number of participants at each follow-up point
- 51. Methods of data collection and timings
- 52. Reasons for opt-out (where applicable)
- 53. Details of any unexpected outcomes and/or deviations from the intended intervention design and the reasons why
- 54. Participants' satisfaction with the intervention
- 55. Plans for sustainability

**Part five: analysis and interpretation**
- 56. Summary of results compared to baseline (for primary and secondary outcomes)
- 57. Details of any further analyses and statistical methods used
- 58. Limitations and generalisability
Appendix I

Session Topics

Session #1

Introduction (Registered Dietitian)
- Purpose of class
- Weight loss
- Benefits of weight loss

Weigh-In (Registered Dietitian – 20minutes)

Nutrition (Registered Dietitian – 15minutes)
- Getting started with good eating habits
- What’s a healthy diet

Nursing (RN Care Manager – 10minutes)
- Planning meals prior to grocery shopping

Physical Activity (Registered Dietitian – 5minutes)
- Importance/benefits of exercise
- Getting started with increasing activity level

Chronic Disease (Nurse Practitioner – 10minutes)
- Effects of obesity on health (bring in large visual of the human body)
- Benefits of weight loss
- Weight loss stopping progression of disease

Behavioral Strategies (Social Worker – 15minutes)
- Mindfulness – breathing, meditation, changing eating habits (activity with raisins)

Summary and Goal Setting for Next 2 weeks (Social Worker – 5minutes)
Session #2

Abbreviated Introduction (Social Worker)
  - Purpose of class
  - Benefits of weight loss

Weigh-In (Registered Dietitian – 20minutes)

Nutrition (Registered Dietitian – 15minutes)
  - Beverages

Nursing (RN Care Manager – 10minutes)
  - Budgeting – “eating right when money’s tight”

Physical Activity (Registered Dietitian – 5minutes)
  - Cardio/Aerobic exercise

Chronic Disease (Nurse Practitioner – 10minutes)
  - Cardiovascular disease and how it is affected by weight loss

Behavioral Strategies (Social Worker – 15minutes)
  - Importance of goals
  - Past successes
  - Identify persona strengths
  -

Summary and Goal Setting for Next 2 weeks (Social Worker – 5minutes)
Session #3

Abbreviated Intro (Social Worker)
  - Purpose of class
  - Benefits of weight loss

Weigh-In (Registered Dietitian – 20minutes)

Nutrition (Registered Dietitian – 15minutes)
  - Breakfast

Nursing (RN Care Manager – 10minutes)
  - Grocery store ad activity – “what would you buy?”

Physical Activity (Registered Dietitian – 5minutes)
  - Consistency

Chronic Disease (Nurse Practitioner – 10minutes)
  - Stress and how it affects weight

Behavioral Strategies (Social Worker – 15minutes)
  - Connection between thoughts, feelings, and actions

Summary and Goal Setting for Next 2 weeks (Social Worker – 5minutes)
Session #4

Abbreviated Intro (Social Worker)
- Purpose of class
- Benefits of weight loss

Weigh-In (Registered Dietitian – 20minutes)

Nutrition (Registered Dietitian – 15minutes)
- Portion control
- Eating healthy at home

Nursing (RN Care Manager – 10minutes)
- Eating in front of the television

Physical Activity (Registered Dietitian – 5minutes)
- Success stories – Walking

Chronic Disease (Nurse Practitioner – 10minutes)
- Effects of stress on the body (bring in pictures of stressed individuals)

Behavioral Strategies (Social Worker – 15minutes)
- Deep breathing exercises

Summary and Goal Setting for Next 2 weeks (Social Worker – 5minutes)
Session #5 (Snacks provided – granola bars and fresh fruits)

Abbreviated Introduction (RN Care Manager)
  - Purpose of class
  - Benefits of weight loss

Weigh-In (Registered Dietitian – 20 minutes)

Nutrition/Eating (Registered Dietitian – 15 minutes)
  - Low sodium/salt diet

Nursing (RN Care Manager – 10 minutes)
  - Importance of adherence to medications

Physical Activity (Registered Dietitian – 5 minutes)
  - Resistance exercises and toning

Chronic Disease (Nurse Practitioner – 10 minutes)
  - Effects of weight and weight loss on hypertension
  - Briefly discuss hypertension

Behavioral Strategies (Social Worker – 15 minutes)
  - Depression and how it relates to exercise/activity and food
  - Recognizing stress and stress management

Summary and Goal Setting for Next 2 weeks (Social Worker – 5 minutes)
Session #6

Abbreviated Introduction (RN Care Manager)
- Purpose of class
- Benefits of weight loss

Weigh-In (Registered Dietitian – 20 minutes)

Nutrition/Eating (Registered Dietitian – 15 minutes)
- Low fat intake
- “Fat, the good, the bad, and the ugly”

Nursing (RN Care Manager – 10 minutes)
- How weight affects sleep
- Sleep disorders and how it affects physical activity

Physical Activity (Registered Dietitian – 5 minutes)
- How to increase physical activity
- Creative alternatives to increase physical activity

Chronic Disease (Nurse Practitioner – 10 minutes)
- Briefly introduce and describe obstructive sleep apnea
- Weight being a risk factor for OSA

Behavioral Strategies (Social Worker – 15 minutes)
- Sleep hygiene

Summary and Goal Setting for Next 2 weeks (Social Worker – 5 minutes)
Session #7

Abbreviated Introduction (RN Care Manager)
  - Purpose of class
  - Benefits of weight loss

Weigh-In (Registered Dietitian – 20 minutes)

Nutrition/Eating (Registered Dietitian – 15 minutes)
  - Real life success stories
  - 400 lb patient lost 200 lbs and how he did it

Nursing (RN Care Manager – 10 minutes)
  - Grocery store ad activity “What would you buy?”

Physical Activity (Registered Dietitian – 5 minutes)
  - Real life success story
  - How 400 lb patient lost 200lbs on his own

Chronic Disease (Nurse Practitioner – 10 minutes)
  - Discuss weight loss drugs and avoiding dependence on them i.e. Phentermine, Orlistat

Behavioral Strategies (Social Worker – 15 minutes)
  - Positive thinking

Summary and Goal Setting for Next 2 weeks (Social Worker – 5 minutes)
Session #8 (Snacks provided – smoothies and yogurt)

Abbreviated Introduction (RN Care Manager)
  - Purpose of class
  - Benefits of weight loss

Weigh-In (Registered Dietitian – 20 minutes)

Nutrition/Eating (Registered Dietitian – 15 minutes)
  - Sugar intake

Nursing (RN Care Manager – 10 minutes)
  - Healthy cooking tips

Physical Activity (Registered Dietitian – 5 minutes)
  - Revisit cardio and aerobic exercises

Chronic Disease (Nurse Practitioner – 10 minutes)
  - Diabetes and how it relates to weight

Behavioral Strategies (Social Worker – 15 minutes)
  - Soft belly breathing

Summary and Goal Setting for Next 2 weeks (Social Worker – 5 minutes)
Session #9

Abbreviated Introduction (Social Worker)
- Purpose of class
- Benefits of weight loss

Weigh-In (Registered Dietitian – 20 minutes)

Nutrition/Eating (Registered Dietitian – 15 minutes)
- Portion control

Nursing (RN Care Manager – 10 minutes)
- How depression affects weight

Chronic Disease (Nurse Practitioner – 10 minutes)
- How weight affects the digestive system
- Issues with gallbladder, ulcers, and liver

Physical Activity (Registered Dietitian – 5 minutes)
- Strengthen your Abs/Core

Behavioral Strategies (Social Workers – 15 minutes)
- Depression and how it relates to exercise and food
- Sign/symptoms of clinical depression
- Food and Mood

Summary and Goal Setting for Next 2 weeks (Social Worker – 5 minutes)
Session #10

Abbreviated Introduction (Social Worker)
  - Purpose of class
  - Benefits of weight loss

Weigh-In (Registered Dietitian – 20 minutes)

Nutrition/Eating (Registered Dietitian – 15 minutes)
  - Healthy Snacks

Nursing (RN Care Manager – 10 minutes)
  - Aging and weight

Chronic Disease (Nurse Practitioner – 10 minutes)
  - Musculoskeletal problems
  - How weight affects arthritis

Physical Activity (Registered Dietitian – 5 minutes)
  - Thinking about joining a gym? Things to consider

Behavioral Strategies (Social Worker – 15 minutes)
  - Pain Management

Summary and Goal Setting for Next 2 weeks (Social Worker – 5 minutes)
Session #11

Abbreviated Introduction (Social Worker)
- Purpose of class
- Benefits of weight loss

Weigh-In (Registered Dietitian – 20 minutes)

Nutrition/Eating (Registered Dietitian – 15 minutes)
- Fiber

Nursing (RN Care Manager – 10 minutes)
- Tips for cutting sugar and carb intake

Chronic Disease (Nurse Practitioner – 10 minutes)
- How weight relates to various cancers

Physical Activity (Registered Nurse – 5 minutes)
- Exercise success stories

Behavioral Strategies (Social Worker – 15 minutes)
- Personal Boundaries and Time Management

Summary and Goal Setting for Next 2 weeks (Social Worker – 5 minutes)
Session #12

Abbreviated Introduction (Social Worker)
  - Purpose of class
  - Benefits of weight loss

Weigh-In (Registered Dietitian – 20 minutes)

Nutrition/Eating (Registered Dietitian – 15 minutes)
  - Super Foods

Nursing (RN Care Manager – 10 minutes)
  - Pros and Cons of formal diets i.e. Weight Watchers, South Beach, Atkins, etc.

Chronic Disease (Nurse Practitioner – 10 minutes)
  - Obesity and Thyroid Conditions

Physical Activity (Registered Dietitian – 5 minutes)
  - Cross Training and Circuit Training

Behavioral Strategies (Social Worker – 15 minutes)
  - Deep Breathing

Summary and Goal Setting for Next 2 weeks (Social Worker – 5 minutes)
Session #13

Abbreviated Introduction (Social Worker)
- Purpose of class
- Benefits of weight loss

Weigh-In (Registered Dietitian – 20 minutes)

Nutrition/Eating (Registered Dietitian – 15 minutes)
- Carbs
- How to count carbs
- Pros and cons of low-carb diets

Nursing (RN Care Manager – 10 minutes)
- Asthma and how it relates to weight

Chronic Disease (Nurse Practitioner – 10 minutes)
- Respiratory issues and weight (lung capacity, oxygen exchange, etc.)

Physical Activity (Registered Dietitian – 5 minutes)
- Fun ways to burn calories

Behavioral Strategies (Social Worker – 15 minutes)
- Mind/Body Connection

Summary and Goal Setting for Next 2 weeks (Social Worker – 5 minutes)
Session #14

Abbreviated Introduction (Social Worker)
- Purpose of class
- Benefits of weight loss

Weigh-In (Registered Dietitian – 20 minutes)

Nutrition/Eating (Registered Dietitian – 15 minutes)
- Review of previous topics/wrap up

Nursing (RN Care Manager – 10 minutes)
- Review of previous topics/wrap up

Chronic Disease (Nurse Practitioner – 10 minutes)
- Review of various body systems and how it relates to weight
- Questions on any medical condition from participants/brief Q&A session

Physical Activity (Registered Dietitian – 5 minutes)
- Review of previous topics/wrap up

Behavioral Strategies (Social Worker – 15 minutes)
- Review of previous topics/wrap up

Summary and Goal Setting for Next 2 weeks (Social Worker – 5 minutes)
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