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Losing Weight with Five A's (5 A's): Assess, Advise, Agree, Assist, Arrange framework and Motivational Interviewing (MI) for health behavior change counseling

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Losing Weight with Five A's (5 A's): Assess, Advise, Agree, Assist, Arrange framework
and Motivational Interviewing (MI) for health behavior change counseling

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Abstract

According to the Centers for Disease Control and Prevention (CDC), obesity has reached

epidemic levels and has associated with increased risk of morbidity and mortality rates.

The increasing prevalence of obesity is a major public health concern. Researchers

calculate that health care costs are 44% higher among moderately and severely obese

older persons than for persons at normal weights. Seventy-five percent of African

American (AA) women are overweight and obese according to data from the CDC and

The State of Obesity: Better Policies for a Healthier America. Compared to any other

racial ethnic group, AA women are more likely to be obese. Unfortunately, rural areas

are effected by obesity more than their urban counterparts in the United States (US).

Primary care providers (PCPs) are an integral part of the solution to help reducing and

reversing health risk   The aim of this project was to implement an evidence based project

(EBP) entitled the Five A's (5 A's): Assess, Advise, Agree, Assist, Arrange and

Motivational Interviewing (MI) for health behavior change counseling into clinical

practice to assist obese AA women, who present in primary care at a rural health clinic

(RHC), lose weight and improve health outcomes.

Keywords: African American, Five A's, RHCs, primary care, weight loss program

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List of Abbreviations

AA .... African American

BMI .... Body Mass Index

CDC .... Centers for Disease Control

DNP .... Doctor of Nursing Practice

EBP .... Evidence Based Practice

EMR .... Electronic Medical Record

ET .... Evidence Table

IBT .... Intensive Behavior Therapy

JBI .... Joanna Briggs Institute

MI .... Motivational Interviewing

NIH .... National Institute of Health

PDSA .... Plan, Do, Study, Act

PCP .... Primary care provider

PI .... Primary investigator

PICOT .... Population, intervention, comparison, outcome, and time

QI .... Quality Improvement

RCA .... Rapid critical appraisal

RHC .... Rural health clinic

RU .... Research utilization

USPSTF .... US Preventive Services Task Force

Chapter I

Introduction

Obesity has reached epidemic proportions with two-thirds of United States (US) adults either overweight or obese (McGuire, 2012b). According to Sattin *et al.* (2016), more than 75% of African American (AA) women ages 20 or older are overweight and nearly 50% are obese. Among US adults, Black and Latino populations have substantially higher rates of obesity than do White populations (Trust for America's Health and the Robert Wood Johnson Foundation, 2016a). According to the Trust for America's Health and the Robert Wood Foundation (2016b), 47.8% of Black Adults were obese, compared to 42.5% Latinos, and 32.6% White. Eighty two percent of AA women were overweight or obese compared to 63.2% White women and AA adults were nearly 1.5 times as likely to be obese compared with White adults (Trust for America's Health and the Robert Wood Foundation, 2016).

According to the Centers of Disease Control (CDC, 2016), obesity is known to increase health risk for multiple co-morbidities such as hypertension, hyperlipidemia, type 2 diabetes, cancer, and respiratory problems such as sleep apnea and asthma. In fact, 9 out of 10 people with newly diagnosed type 2 diabetes were overweight (CDC, 2016b). The number of cancer cases caused by being obese is estimated to be 20% with

the increased risk of malignancies being influenced by diet, weight change, and body fat distribution together with physical activity (De Pergola & Silvestris, 2013).

The Rural Health Information Hub (2016) found that patients in rural areas experienced higher rates of obesity and its co-morbidities than the nation due to several factors, including access to care, poverty index, and cultural influences. Access to care in many rural counties was challenged at both the individual and the facility level (Department of Health and Human Services-Centers for Medicare & Medicaid Services, 2015). For example, rural areas had proportionately more poor and uninsured persons than urban areas and were served by fewer health care providers on a per capita basis (Probst, Laditka, & Laditka, 2009). Transportation and distance further complicated travel to providers (National Rural Health Association, 2016). To alleviate impediments to rural health care, the federal government initiated rural health clinic (RHCs) in the 1970. Over time, these RHCs demonstrated that they were integral to improving access to care for the underserved and vulnerable populations. Providers at RHCs managed multiple health problems, including obesity and all its associated co-morbidities.

The purpose of this Doctor of Nursing Practice (DNP) quality improvement project was to implement the Five A's (5A's):   Ask, Advise, Assess, Assist, and Arrange framework and Motivational Interviewing (MI) for behavior change program to promote weight loss in obese adult AA women ages 18 and older to improve health outcomes in a RHC over an 8-week period. Health outcomes included a 5% reduction in BMI, body weight, and waist circumference. Using the 5 A's framework and MI for health behavior change counseling was considered an effective EBP for weight loss (AHRQ, 2016).

Scope of Clinical Problem. According to Levi, Segal, Rayburn, & Martin (2014) in *The State of Obesity: Better Policies for a Healthier America*, South Carolina (SC) was ranked number 10 in the nation for adult obesity. South Carolina's adult obesity rate was currently 32.1%, an increase from 21.1% in 2000 and from 12.0% in 1990 (Levi *et al.*, 2014). In 2014, 67% of South Carolina adults were either obese or overweight (KFF, 2016). Rural adult residents were more likely to be obese than were urban residents at 27.4% versus 23.9% (South Carolina Rural Health Research Center, 2009).

According to Levi *et al.* (2014), obesity rates were: 28.1% among Caucasians, 42.7% among AA, and Hispanics accounted for 32.2%. For AA women in South Carolina, four out of every five were obese or overweight (SC DHEC, 2016a). Data in Charleston County showed that obesity was increasing (Robert Wood Johnson Foundation and University of Wisconsin Population Health Institute, 2016).

Obesity. Due to the strong correlates between obesity and its morbidity and mortality, reversing the obesity epidemic was an urgent priority (Mokdad *et al.*, 2003). Poor nutrition, lack of physical activity, and excessive alcohol usage directly contributed to obesity (Rural Health Information Hub, 2016). Research demonstrated that weight loss in obese individuals was associated with a lower incidence of health problems and death (Lyznicki, Young, Riggs, & Davis, 2001; Moyer, 2012). According to the CDC (2016a) health problems included: hypertension, dyslipidemia, type 2 diabetes, coronary heart disease, stroke, gall bladder disease, and mental illness such as clinical depression. In 2014, 67 % of adults were diagnosed as either obese or overweight in South Carolina (KFF, 2016). Rural residents were more likely to be obese than were urban residents at 27.4% versus 23.9% (South Carolina Rural Health Research Center, 2009).

Costs related to Obesity. Obesity was associated with job absenteeism and decreased productivity, costing approximately $4.3 billion annually in the United States(Cawley & Meyerhoefer, 2012). Obesity co-morbidities ranged from $147 billion to nearly $210 billion per year in cost for patient care management including medications, hospitalizations, and surgical interventions (Cawley & Meyerhoefer, 2012; Levi *et al.*, 2014; Levi, Segal, Rayburn, & Martin, 2015). The economic cost of obesity in South Carolina was estimated to be $8.5 billion per year and increasing annually (Scaledown.org, 2016). In obese women, heart disease accounted for 22,471 hospitalizations in 2014 in South Carolina, with a total cost of more than $1.2 billion (SC DHEC, 2016a). Hospitalization costs of obesity related to stroke totaled more than $313 million for women in South Carolina in 2014 (SC DHEC, 2016b). *South Carolina Obesity Action Plan 2014-2019* (Scaledown.org, 2016) stated that obesity was linked to chronic diseases of which 80% are preventable.

Access in Rural Areas. The federal government created the RHC program in 1977 to ensure quality health care availability to millions of children and adults who lived in medically underserved rural areas (NARHC, 2016). According to Henry J. Kaiser Family Foundation (2016) ,South Carolina had 108 RHCs. Even with RHCs available, these facilities were less likely to have nutritionists, dietitians, or weight management experts available. Moreover, these rural underserved areas lacked exercise facilities and the infrastructure to encourage physical activity compared to their urban counterparts, making obesity difficult to treat. According the NARHC (2016), infrastructure was defined as the basic physical and organizational structures and

facilities (e.g., buildings, roads, and side-walks, parks) needed for the operation of a community.

Additionally, many rural areas were considered *food deserts*- areas where there is limited availability of fresh, affordable foods due to low volume of consumerism (Rural Health Information Hub, 2016). Thus, many rural residents relied on more expensive and less nutritious options, such as those available at a gas station convenience store.

Benefits of Weight Loss. Scientific evidence showed that many obesity-related conditions improved with a 5-10% weight-loss (Poirier *et al.*, 2006). According to Poirier *et al.* (2006), a 5-10% weight-loss can result in a five-point increase in HDL cholesterol. In addition, raising HDL by a few points can lower the risk of an individual developing heart disease. Studies have shown that excess body weight accounts for about 25-30% of cases of hypertension (Division of Nutrition, 2016; Levi *et al.*, 2014). Even weight loss as low as 5-10% can lead to very significant benefits including a lesser chance of having a heart attack or stroke (Levi *et al.*, 2014; Levi *et al.*, 2015). For example, in hypertensive patients, a 10 kg (22 lb.) weight loss was associated with an average reduction of 7mm Hg systolic and 3mm diastolic blood pressure compared with controls (NIH, 2010). Primary care practices have the potential to play a key role in improving population health (Goldberg, Feng, & Kuzel, 2016a). Moreover, obesity programs implemented in primary care have improved patient outcomes, but they must be culturally appropriate. Per Nam (2013), the literature showed there are only a few successful programs customized to target obese adult AA women.

Significance of the Project. The economic cost of obesity in South Carolina was estimated to be $8.5 billion per year and growing (Scaledown.org, 2016). *South Carolina*

Obesity Action Plan 2014-2019 (Scaledown.org, 2016) purports that obesity was linked to chronic diseases of which 80% were preventable. Obesity related heart disease and stroke were among those chronic but preventable diseases; unfortunately, the findings were higher among AA women. The purpose of this DNP project was to implement an evidence based practice (EBP) called the Five A's (5 A's) Program: Assess, Advise, Agree, Assist, Arrange and Motivational Interviewing (MI) for health behavior change counseling program to promote weight loss in obese adult AA women ages 18 and older for improving health outcomes.

Statement of Purpose. The purpose of this Doctor of Nursing Practice (DNP) quality improvement project was to implement the use of the 5 A's program: Assess, Advise, Agree, Assist, Arrange and Motivational Interviewing (MI) for health behavior change counseling program to promote weight loss in obese adult AA women ages 18 and older for improving health outcomes who present for services in a RHC over an 8-week period. Health outcomes included a 5% reduction in BMI, body weight, and waist circumference. Simultaneously, this DNP project would serve to reduce the health disparities among obese adult AA women. The first step to creating evidence based protocols (EBP) was to ask a clinical question in the *PICOT* format (Melnyk-Mazurek & Fineout-Overholt, 2015).

PICOT Statement. The EBP question using the **PICOT** format for this DNP project was as follows: For obese adult AA women ages 18 and older who present for primary care in the RHC **(P),** how does the 5 A's program (**I**) compare to current practice (**C**) in promoting weight loss by measuring a 5% reduction in baseline BMI, body weight, and Waist Circumference (**O**) over an 8-week period (**T**)? See Table 1.

Table 1.1

Evidence Based Practice Clinical Question

P-Population	I-Intervention	C-Comparison	O-Outcome	T-Time
Obese Adult AA women ages 18 and older who present for primary care in RHC	5 A's program to promote weight loss in obese AA women	No standard program for obesity	A 5% reduction in baseline BMI, body weight, and Waist Circumference	8 weeks

Definition of Terms.

1. AA: African American Women.

2. Adult women: Ages 18 and older.

3. BMI: A person's weight in kilograms (kg) divided by his or her height in meters squared. The National Institutes of Health (NIH) now defines normal weight, overweight, and obesity according to *BMI* rather than the traditional height/weight charts.

4. Body Weight: Measured in kilograms (kg).

5. Obesity: Body Mass Index (BMI) over 30.

6. Primary Care Provider: A primary care provider (PCP) is a health care practitioner who sees people that have common medical problems. This

person is most often a doctor. However, a PCP may be a physician assistant or a nurse practitioner. PCPs are often involved in the patient's care for a long time.

7. Primary Care: Practices provide health promotion, disease prevention, health maintenance, counseling, patient education, diagnosis and treatment of acute and chronic illnesses.

8. Rural Health Clinic: A clinic is intended to increase access to primary care services for Medicaid and Medicare patients in rural communities.

9. Time: Defined as 8-weeks.

10. Waist Circumference: Defined as $> or = 88$ cm for women identified subjects with body mass index $> or = 30$ (Lean, Han, & Morrison, 1995).

11. Weight-Loss Program: A program that may help you lose weight safely and keep the weight off over time (NIDDK, 2016).

12. Weight loss: Defined as 5% reduction in baseline BMI, body weight, and Waist Circumference will be measured by kilograms (KG).

13. Five A's (5 A's) Program: Defined as using the interventions: Assess, Advise, Agree, Assist, Arrange in addition to Motivational Interviewing (MI) for health behavior change counseling program to promote and sustain weight loss.

Conclusion. In conclusion, PCPs are needed to integrate EBPs in to clinical practice to effectively manage the obesity epidemic and help reduce the health disparities especially in obese AA women. Finding effective weight loss EBPs to implement in rural health proved to be very difficult but did accentuate the need for an intervention to reduce

obesity and thwart co-morbidities. According to Dearholt and Dang (2012), the EBP had

to be culturally appropriate. Emerging evidence demonstrated positive outcomes using

the 5 A's framework of obesity management in RHCs (Peterson & Cheng, 2013).

Chapter II

Literature Review

The purpose of this chapter was to conduct a substantive literature review and appraise the evidence on weight loss and obesity management practices for disparate populations while identifying gaps in the literature. As the literature search proceeded, the Evidence Based Practice (EBP) question was further shaped with new insights and fortified using expert opinions and evidenced based articles that resulted in modifications and enhancements of the original EBP question being asked (Melnyk-Mazurek & Fineout-Overholt, 2015). The literature review was conducted to include current references within the past 5 years but some "classic references" were used that were considered seminal work (Melnyk-Mazurek & Fineout-Overholt, 2015). On March 10, 2016, a comprehensive search strategy was performed based on the following EBP question: For obese adult AA women ages 18 and older who present for primary care in the RHC (**P**), how does the 5 A's program (**I**) compare to current practice (**C**) in promoting weight loss by measuring a 5% reduction in baseline BMI, body weight, and Waist Circumference (**O**) over an 8-week period (**T**)?

Search Strategy. The goal of the EBP question was to search for the highest quality of knowledge in providing care to produce the greatest positive impact on patients' health status and healthcare outcomes (Melnyk-Mazurek & Fineout-Overholt, 2015). The key was to know how to match the sources of evidence with the question to

be answered (Melnyk-Mazurek & Fineout-Overholt, 2015). Tutorials provided by the USC Library helped in the navigation of many databases and selection of articles. Databases used included: National Guideline Clearinghouse, CINAHL, Joanna Briggs Institute, Cochrane, Agency for Health Care Research and Quality, Evidence-Based Nursing and PubMed. These databases provided access to scholarly articles and books from all around the world. The search strategy for the EBP question used several databases and the articles of interest were organized in an Evidence Table (Appendix J). PICOTS definitions (population, intervention, comparison, outcomes, timing, and setting) were used to help identify the concepts of interest for the search. According to Melnyk-Mazurek & Fineout-Overholt (2015) integrating EBP into clinical practice was successful when the evidence was robust.

The search strategies used both the inclusion and exclusion criteria to identify the best articles of interest. The inclusion criteria for articles of interest included: obese adult AA women ages 18 and older who received care in a primary care clinic for weight management. The following exclusion criteria was used: overweight patients, weight loss in pregnant women, all Caucasian women, BMI < 30, children, elderly, weight loss with medication management, studies outside the US, articles older than 2000, studies comparing one weight-loss program versus another, and urban settings. Having defined the parameters of the EBP question, the evidence was screened for inclusion criteria, abstracted, and appraised using a rating scale and then summarized (Melnyk-Mazurek & Fineout-Overholt, 2015). Although several databases were searched, only the articles that supported the EBP question were further reviewed.

Rapid critical appraisal (RCA) was a process used to evaluate articles of interest. According to Fineout-Overholt *et al.* (2010), RCA was a methodology that helped the researcher review each study to determine its level of evidence, how well it was conducted, and how useful it was to practice. The articles that supported the EBP questioned were analyzed. The evidence and quality rating guide by the *Johns Hopkins Nursing Evidence-Based Practice Models and Guidelines* (Dearholt & Dang, 2012) was used to further analyze the articles of interest.

Sources of Evidence. The search strategy began with PubMed Advanced using the following keywords: "o*besity primary care weight loss behavior modification intervention counseling.*" Forty-three articles were found and four were of interest. An RCA was completed on four articles and they were placed in the ET (Befort *et al.*, 2016; Peterson & Cheng, 2013; Steglitz, Sommers, Talen, Thornton, & Spring, 2015; Wadden, Butryn, Hong, & Tsai, 2014). Seven articles were found using a different set of keywords: "*obesity overweight primary care weight management implementation tools*." One article met the inclusion criteria. Following the RCA, the article was placed in the Evidence Table (Osunlana *et al.*, 2015). Below this article was a "*similar articles*" tab and another article of interest was found (Campbell-Scherer *et al.*, 2014). Four articles were found using just keyword: "*5 A's weight loss.*" The RCA was completed on the one article and it was placed in the Evidence Table (Gudzune, Clark, Appel, & Bennett, 2012).

Using the Cochran Library, thirty-six articles were found using the following keywords: "*obesity and weight loss*" and two articles that were of interest. The RCA determined that the two articles should be placed in the Evidence Table (Hooper *et al.*,

2015; Nikolaos Mastellos, Laura H. Gunn, Lambert M. Felix, Josip Car, & Azeem Majeed, 2014a).

Forty-four articles using CINAHL Complete were found using the keywords: "*African American weight loss and women.*" Two articles were found using the keywords. The RCA was completed on the two articles and they were placed it in the Evidence Table (Chugh, Friedman, Clemow, & Ferrante, 2013; Nam, 2013). Seventy-four articles were found when the keywords were changed to: "*obesity weight loss and rural.*" and Boolean *"AND"* was used. Two articles of interest were found. Following the RCA, the two articles were placed it in the Evidence Table (Appendix J).

Web of Science revealed twelve articles using the keywords: "*obesity and rural and African American women and weight loss.*" Two articles of interest were found. The RCA revealed that the two articles were of interest and they were placed it in the Evidence Table (Foley *et al.*, 2012; Parker, Coles, Logan, & Davis, 2010).

In the National Guideline Clearinghouse, 238 articles were found using the keywords: "*obesity and national.*" Of the 238 articles, only one met the inclusion criteria. The RCA was completed, and the article was placed in the Evidence Table (U.S. Department of Health and Human Services, Released 2006 May (revised 2014)).

Ten articles were found in Joanna Briggs Institute using the keywords: *"weight loss interventions and adults."* Only one was of interest. An RCA was completed and the article was placed in the Evidence Table (Chronic Disease Node Group and Chen Zhili, 2014).

Institute of Medicine. Three reports, seven meetings, and two activities were found using the keywords: "*obesity and rural.*" One report of interest was identified.

The RCA was completed and the report was placed in the Evidence Table (McGuire, 2012a).

In Agency for Health Care Research and Quality, 25 articles were found using the keywords: "*obesity and rural health and 5 A's.*" Again, only one article met the inclusion criteria. The RCA indicated that the article was of good quality and it was placed in the Evidence Table (McGinnis Paul, Davis, DeSordi, & Thomas, 2014).

Evidence Based Nursing 1,497 articles using the keywords: "*5 A's weight loss intervention.*" Only one article was of interest. The article was placed in the Evidence table following the RCA (Brown, 2012).   After a thorough literature search, all sources of evidence were reviewed and appraised.

Analysis of the Evidence. The search strategy on March 2016 found a total of 21 articles. The research design methods were considered based on sample, sample size and setting. Study findings were evaluated as well as the threats to validity and reliability. Limitations and the study findings were documented and were considered if the articles helped answer the EBP question. The summary of the Evidence Table can be found in Appendix J. The articles encouraged Motivational interviewing (MI) in combination with 5A's evidence based intervention to promote weight loss in AA women. MI is a set of clinical skills and strategies to help the PCP adhere to the counseling style to assist clients to explore and resolve ambivalent feelings (Chen, Zhili et al., 2014). The 5As weight loss intervention included five major steps: Ask, Advise, Assess, Assist, and Arrange. Using MI and the core principles of the 5 A's approach helped the PCP improve patient outcomes (Campbell-Scherer *et al.*, 2014; Chronic Disease Node Group and Chen Zhili, 2014; Wadden *et al.*, 2014)**.**

Level I- Grade A Research. This group of articles provided strong compelling evidence with consistent results. These studies included experimental studies, randomized control trials (RCT), and systematic reviews of RCTs, with and without meta-analysis. They were also considered high quality which means that the results were consistent and generalizable with sufficient sample size for the study design. These studies also showed adequate control and provided definitive conclusions with consistent recommendations based on comprehensive literature review that included thorough reference to scientific evidence. Table 2.1 lists the articles.

Table 2.1

Level I-Grade A Research

Author-Year	Name of Article
1. Chronic Disease Node Group et al. (2014)	Motivational interviewing: Overweight and obesity.
2. Campbell-Scherer *et al*. (2014)	Implementation and evaluation of the 5 A's framework of obesity management in primary care: design of the 5 A's Team (5 A'sT) randomized control trial.
3. Wadden, T. A *et al*. (2014)	Behavioral treatment of obesity in patients encountered in primary care settings: A systematic review.
4. Perri, M. G. *et al.* (2014)	Comparative effectiveness of three doses of weight-loss counseling: two-year findings from the rural LITE trial.

Note: Abbreviated from Appendix J

In the literature review, there were four articles with Level I-Grade A research, the highest level of evidence, to help answer the EBP question and intervention planning. Per Melnyk-Mazurek & Fineout-Overholt (2015), systematic review methodology provided the most rigorous approach to minimizing the bias in reviewing studies.

The purpose of the article by Chronic Disease Node & Chen (2014) was to perform a systematic review evaluating behavior change interventions using MI in overweight or obese adults. Characteristics of the evidence for this summary were based on a structured search of the literature and selected evidence-based health care databases (Chronic Disease Node Group and Chen Zhili, 2014). The systematic review with meta-analysis evaluated the effectiveness of MI with 5A's in weight-loss interventions including 12 RCTs (Chronic Disease Node Group and Chen Zhili, 2014). The method was given a Grade A for best practice recommendations. It found that MI may have facilitated behavior change by enhancing the client's intrinsic motivation. MI helped clients change their behavior and it outperformed traditional advice in approximately 80% of the studies (Chronic Disease Node Group - Updated by: Chronic Disease Node & Chen, 2014b). The MI approach was centered on a guiding style of communication using reflective listening to decrease conflict and resistance. The authors also found that four key principles of MI interviewing were expressing empathy, developing discrepancies between actual and desired behavior, rolling with resistance and supporting self-efficacy (Chronic Disease Node Group - Updated by: Chronic Disease Node & Chen, 2014b). None of the studies reported motivational interviewing to be harmful or to have any kind of adverse effect. The article also found MI could enhance weight loss in overweight and obese patients (Chronic Disease Node Group and Chen Zhili, 2014).

In an RCT, Campbell-Scherer *et al.* (2014) investigated the effectiveness of 5 A's in primary care. The study by Campbell-Scherer (2014) was large, with a sample size comprised of over 24 practices with over 6500 patients in a primary care setting. The

results of the study showed the MI facilitated behavior change to support weight loss (Campbell-Scherer *et al.*, 2014).

Clinic-based multidisciplinary teams (RN/NP, mental health, dietitians) were randomized to control or to the 5 A'sT intervention group to participate in biweekly learning collaborative sessions supported by internal and external practice facilitation (Campbell-Scherer *et al.*, 2014). Inclusion criteria for the study included all adult patients 18 years and older with a BMI ≥25, enrolling in PCP programs for health, able and willing to give written informed consent in English. The learning collaborative content addressed provider-identified barriers to effective obesity management in primary care and evidence-based shared decision making tools were co-developed and iteratively tested by practitioners (Campbell-Scherer *et al.*, 2014). Moreover, the patient-level outcomes were also assessed, through a longitudinal cohort study of patients from randomized practices (Campbell-Scherer *et al.*, 2014). Patient outcomes included clinical (e.g., BMI, blood pressure), health-related quality of life (SF-12, EQ5D), and satisfaction with care.

Qualitative data collected from providers and patients were evaluated using thematic analysis to understand the context, implementation and effectiveness of the 5 A'sT program (Campbell-Scherer *et al.*, 2014). The data was analyzed using power calculations of both simple and cluster randomizations. Each clinic was considered as a cluster and the intra class correlation was estimated to be 0.40 (Campbell-Scherer *et al.*, 2014). Power calculations were based upon the SF-12 and the BMI. For SF-12, a moderate effect size was 0.3, and for a 5% reduction in BMI, a moderate effect size was 0.23 to 0.25. The goal was to aim for 80% power for this study protocol (Campbell-

Scherer *et al.*, 2014). According to Campbell- Scherer *et al.*(2014) the trial anticipated the enrollment goal to have a 30% lack of adherence to the complete measurement protocol, ensuring that in this scenario the power will remain reasonable at 70%.

However, there were several limitations in the study. For example, children and pregnant women were excluded. Also, since this was a trial for primary care management of obesity, patients whose obesity was co-managed by an obesity specialist or tertiary care center were also excluded (e.g., patients referred for bariatric surgery), as well as patients who were unable to participate in regular clinic visits or programs due to geographic, social, or physical reasons (Campbell-Scherer *et al.*, 2014).

Nevertheless, the 5 A'sT trial provided a wide range of insights into current practices, knowledge gaps and barriers that limit obesity management in primary practice. The study used existing resources, collaborative design, practice facilitation, and integrated feedback loops to increase the quantity and quality of weight management visits in primary care (Campbell-Scherer *et al.*, 2014). Since the 5A'sT trial was ongoing the findings related to weight loss and BMI were not yet evaluated (Campbell-Scherer *et al.*, 2014).

Wadden *et al.* (2014) reviewed 3304 abstracts that yielded 12 trials, involving 3893 participants and found that intensive behavioral counseling could induce clinically meaningful weight loss, but there was little research on primary care practitioners providing such care. The purpose of the study was to conduct a systematic review summarizing the results of RCTs involving patients recruited from a primary care setting. The CMS-defined primary care practitioners either worked alone or with trained interventionists and delivered behavioral weight loss counseling (Wadden *et al.*, 2014).

The 12 identified studies included a total of 3893 participants, with a range of 50 to 665 persons per study. Across trials, mean baseline BMIs ranged from 32.0 to 38.5 and ages from 49.4 to 55.7 years. The percentage of women ranged from 46.5% to100%. The authors of the systematic review found that PCPs did play a critical role in both diagnosing and treating obesity (Wadden *et al.*, 2014). Surprisingly, no studies were found where primary care practitioners delivered counseling that followed the CMS guidelines.

However, in the former trials, more treatment sessions, delivered in person or by telephone by trained interventionists were associated with greater mean weight loss and likelihood of patients losing 5% or more of baseline weight (Wadden *et al.*, 2014). The systematic review summary showed that the mean 6-month weight changes from baseline in the intervention groups ranged from a loss of 0.3 kg to 6.6 kg (Wadden *et al.*, 2014). In the control group, mean change ranged from a gain of 0.9 kg to a loss of 2.0 kg (Wadden *et al.*, 2014). Weight loss in both groups generally declined with longer follow-up (12-24 months). In addition, interventions that prescribed both reduced caloric energy intake (e.g., 500 kcal/d) and increased physical activity (e.g., 150 minutes a week of walking), with traditional behavioral therapy, generally produced larger weight loss than interventions without all 3 specific components. Wadden *et al*. (2014) also found that a range of trained interventionists, who delivered counseling in person or by telephone, could be considered for treating overweight or obesity in patients encountered in primary care settings.

Lastly, Perri *et al*. (2014) evaluated the effects and costs of three doses of behavioral weight-loss treatment delivered via Cooperative Extension Offices in rural

communities. The study included obese adults (N = 612) who were randomly assigned to low, moderate, or high doses of behavioral treatment (i.e., 16, 32, or 48 sessions over two years) or to a control condition that received nutrition education without instruction in behavior modification strategies. The results of the study showed that the two-year mean reductions in initial body weight were 2.9% (95% Confidence Interval = 1.7-4.3), 3.5% (2.0-4.8), 6.7% (5.3-7.9), and 6.8% (5.5-8.1) for the control, low-, moderate-, and high-dose conditions, respectively. The moderate-dose treatment produced weight losses similar to the high-dose condition and significantly larger than the low-dose and control conditions. Cost-effectiveness analyses favored the moderate-dose treatment over all other conditions (Perri *et al.*, 2014).

The study by Perri *et al.* (2014) had both strengths and weakness. The results of the experimental study with RCTs found that a moderate dose of behavioral treatment produced two-year weight reductions comparable to high-dose treatment but at a lower cost. These findings have important policy implications for the dissemination of weight-loss interventions into communities with limited resources. Unfortunately, only 11-17% of the study group included AA women. Threats to validity and reliability of this study included the Hawthorne effect, which results in participants responding a particular way when they know they are being observed (Dearholt & Dang, 2012). Inclusion criteria for this study were patients free of uncontrolled hypertension, diabetes, and did not present with any other active disease in the last twelve months. However, patients who suffered substance abuse and presented with clinically significant depression were excluded from the study (Perri *et al.*, 2014).

Synthesis of Level I-Grade A Articles. All four articles met the inclusion criteria of interest which included: obese adult AA women ages 18-44 receiving care in a primary care clinic for weight management. MI was a set of clinical skills and strategies to help the PCP adhere to the counseling style to assist clients to explore and resolve ambivalent feelings (Campbell-Scherer *et al.*, 2014; Chronic Disease Node Group and Chen Zhili, 2014; Perri *et al.*, 2014; Wadden *et al.*, 2014). The data have so far shown that provider behavior was a key feature in the 5A's weight loss intervention and if providers do not have the skills, beliefs and confidence to be able to intervene effectively with patients, there will not be an improvement in obesity management in primary care (Campbell-Scherer *et al.*, 2014). However, the results of the study by Wadden *et al*. (2014) found that none of the PCPs delivered counseling that followed the CMS guidelines. According to Perri (2014), the results of the experimental study with RCTs found that a moderate dose of behavioral treatment produced two-year weight reductions comparable to high-dose treatment but at a lower cost. The four Level I- Grade A research articles that were reviewed provided an evidence based intervention called the 5 A's weight loss intervention with MI when used by trained provider could benefit obese AA women with weight loss in RHC.

Level I-Grade B Research. There were four articles that provided good evidence and consistent results from the literature review. These articles received a quality guide grade B because the results were reasonably consistent but the data were incomplete (Dearholt & Dang, 2012).

Table 2.2

Level I-Grade B Research

Author-Year	Name of Article
1. Befort, Christie A *et al.* (2016)	Protocol for the Rural Engagement in Primary Care for Optimizing Weight Reduction (RE-POWER) Trial: Comparing three obesity treatment models in rural primary care.
2. Sherson, Elaine A *et al.* (2014)	A review of the use of the 5 A's model for weight loss counselling: differences between physician practice and patient demand.
3. Hooper, Lee *et al.* (2015)	Effects of total fat intake on body weight.
4. Bennett, G. G *et al.* (2013)	Behavioral treatment for weight gain prevention among black women in primary care practice: A randomized clinical trial.

Note: Abbreviated from Appendix J

The purpose of the study by Befort *et al.* (2016) was to perform a cluster-randomized pragmatic trial to evaluate the comparative effectiveness of three obesity treatment models in rural primary care: the Intensive Behavior Therapy (IBT) fee-for-service (FFS) model reimbursed by Medicare, a team-based model that recognized the patient-centered medical home (PCMH) as a preferred delivery approach, and the centralized disease management (DM) model, in which phone-based counseling is provided outside of the primary care practice. The study included cluster RCT with over 36 primary care practices in rural health; however, since the study was multi-institutional there were possible variations in how the investigator carried out and interpreted the results.

The protocol in rural Midwestern U.S. was randomized to deliver one of the three interventions to 40 patients (N = 1440) age 20 to 75 with a BMI 30–45 kg/m2. In the FFS

arm, primary care providers counseled patients to follow evidence-based weight loss guidelines using the Medicare-designated treatment schedule (Befort *et al.*, 2016). In the PCMH arm, patients received a comprehensive weight management intervention delivered locally by the practice personnel using a combination of in-person and phone-based group sessions. In the DM arm, the same intervention was delivered remotely by obesity treatment specialists via group conference calls. The primary outcome was weight loss at 24 months. Additional measures included fasting glucose, lipids, quality of life indicators, and implementation process measures.

Although CMS established the FFS obesity treatment model in late 2011, it has not yet been rigorously evaluated for effectiveness. The results of this study were still pending (Befort *et al.*, 2016). The study by Befort *et al.* (2016) was among the first large scale, pragmatic effectiveness trials of obesity treatment conducted in rural America to date. Previous trials in underserved populations have targeted African Americans, Hispanics, and individuals of low socioeconomic status. Another current trial was focused on rural community health centers in North Carolina. Befort *et al.* (2016) found that rural residents face many of the same barriers as other underserved populations such as lack of access and environmental support. Results from the current protocol would also provide valuable information regarding the dissemination potential of these treatment models (Befort *et al.*, 2016).

The protocol would use the RE-AIM framework which has been frequently used to assess obesity treatment implementation in worksites, schools, and geographically linked communities, but few studies have systematically examined the implementation process in primary care (Befort *et al.*, 2016). As a result of this study, two on-going

hybrid effectiveness-implementation mixed methods studies are underway in specific primary care settings. Each RE-AIM measure will be compared across treatment arms using descriptive statistics. In this study after aggregating to the practice level, the patient-level factors (session attendance, ratings of care) will be tested and compared across arms using separate analysis of variance (ANOVA) models (Befort *et al.*, 2016).

Although the study is still in progress, the study has several strengths and weaknesses. According to Befort *et al.* (2016), primary care is the foundation of the U.S. healthcare system, but has been under-utilized for obesity treatment, particularly in rural settings where access to evidence-based weight management programs is lacking. The fee-for-service (FFS) approach to obesity treatment embodied in CMS-reimbursed IBT for Obesity was not being widely utilized, and the effectiveness of this model remains unknown (Befort *et al.*, 2016). PCMH and DM models of care were two viable approaches being adopted nationally for other chronic diseases, yet no studies have directly compared these two approaches to the FFS model for obesity (Befort *et al.*, 2016). Hopefully, the findings from the Befort *et al.* (2016) will contribute to a new standard of primary care for obesity treatment in the rural U.S.

However, the study had several limitations. The study hoped to retain a minimum of 80% of patients at 24 months across all three treatment arms (Befort *et al.*, 2016). To assist with missing data, for patients who failed to attend in-clinic study assessment visits, the study used weight abstracted from medical charts if within 3 months of the target date at 6 and 18 months or 4 months of the target date at 24-months (Befort *et al.*, 2016). All primary analyses were conducted using intent-to-treat and assumed that individuals who discontinued participation in the study prior to month 24 with

unavailable chart weight, on average, regain weight at a rate of 0.3 kg per month up to

their baseline weight. According to Befort *et al.* (2016) this conservative approach has

been employed by several others, and is consistent with published reviews of weight

regain following lifestyle treatment for obesity. In this study, limitation from selection

bias came from the inherent differences such as age and gender, found in the individual

patients even before the manipulation of the independent variable of weight loss with

5A's frame-work (Befort *et al.*, 2016; Dearholt & Dang, 2012). The 5-year cluster

randomized pragmatic trial was funded to compare the effectiveness of a team-based

approach modeled after PCMH, and DM to the FFS model in primary care practices was

still ongoing (Befort *et al.*, 2016). The study hoped that hierarchical linear mixed models

would demonstrate the group differences, accounting for the correlation between patients

from the same clinic but the findings were still pending (Befort *et al.*, 2016)

Similarly, the study by Sherson *et al*. (2014) found that PCPs needed more

training to provide consistent weight loss interventions using the 5A's model. The

purpose of the study was to identify and summarize quantitative research of the use of the

5 A's model for weight loss counselling and identify the differences between physician

practice and patient demand (E. A. Sherson, , *et al.*, 2014). The results of the systematic

literature review showed that the majority of patients wanted to discuss weight loss with

their physicians, with the Assist and Arrange aspects of the 5 A's being most desired;

however, physicians most frequently Advise and Assess, but rarely Agree, Assist or

Arrange (E. A. Sherson, , *et al.*, 2014).

The systematic literature review included the MEDLINE/PubMed database using

relevant keywords: counselling, obesity, overweight, patients, physicians, primary care,

and weight loss. The study by Sherson *et al.* (2014) used both inclusion and exclusion criteria. The inclusion criteria related to primary research articles providing prevalence data for physician use of one or more aspects of the 5 A's process. Studies which quantified patient preferences concerning which of the 5 A's practices they would like physicians to implement during weight loss discussions were also included. Studies were excluded if they were related to another behavior change (e.g. smoking cessation), if they were studying the use of the 5 A's in non-primary care providers (e.g. psychiatrists), and if they reported only qualitative data. They were also excluded if they did not list prevalence for physician use of the 5 A's as a whole or as individual practices or if they did not list patient preferences concerning the 5 A's practices (E. A. Sherson, , *et al.*, 2014).

Fifteen articles met the inclusion criteria for this review of the 230 articles identified (E. A. Sherson, , *et al.*, 2014). The full text of each selected article was reviewed to collect the following variables: author(s), publication date, study design, sample size, participants and physician demographics, percentage of physicians implementing individual aspects of the 5 A's, and percentage of patients with preference for individual aspects of the 5 A's (E. A. Sherson, , *et al.*, 2014). Three of those articles examined patient perspectives, while the remainder focused on physician implementation of the 5 A's in clinical practice. These cross-sectional studies analyzed patient preferences on use of the 5 A's counselling practices.

None of these studies asked patients about all five aspects of the counselling process, and none of them asked how often patients want to be "Assessed." Approximately three-fourths of patients at any BMI (normal weight, overweight, or

obese) felt referral to a registered dietician and/or regular review of weight status would be useful or very useful. In the systematic review, few studies reported patient preference for "Assist", but only two studies reported a more generic proxy for this step, finding that 67%–75% of overweight and obese patients believe their physician can help with weight loss in the future (E. A. Sherson, , *et al.*, 2014). The systematic literature reviews of the MEDLINE/PubMed database using relevant keywords found that the most popular of the 5 A's with patients was "Arrange", finding that about half of overweight and obese patients want their physician to provide on-going support and/or referral for more intensive help (E. A. Sherson, , *et al.*, 2014). About one-fourth to one-half of patients in two studies wanted physicians to "Advise" and "Agree" with them during the counselling process (E. A. Sherson, , *et al.*, 2014). The majority of these discussions were initiated by the observed physicians, and within these discussions, 80%–94% of physicians gave patients advice on weight loss, while about one-fourth to one-half asked about ("Assess" in the USPSTF version of the 5 A's framework) patient weight or behavioral health risks (E. A. Sherson, , *et al.*, 2014). Few physicians were observed "Assisting" (14%–17%) or "Arranging" (3%–10%) in these discussions (E. A. Sherson, , *et al.*, 2014).

The study by Sherson *et al.* (2014) included a limited number of studies addressing patient preference, inconsistent assessment of all aspects of the 5 A's, a lack of longitudinal designs and failure to take contextual factors such as patient and physician characteristics into account when interpreting study results. Some of the limitations of the study include the use of "physician" as a search term and may have caused missed articles relevant to the 5-A-related practices of other primary care practitioners, such as physician assistants and nurse practitioners (E. A. Sherson, , *et al.*, 2014). In addition, the

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quality of the currently available evidence also could limit the review of articles

(Dearholt & Dang, 2012). Few studies examined patient preferences related to the 5 A's

in a quantitative way, making it difficult to draw sound conclusions about how patients

would like their physicians to support weight loss. Moreover, there was inconsistent

assessment of all of the 5 A's and use of non-standardized definitions of the 5 A's across

studies assessing patient preferences and physician practice, making it difficult to

accurately quantify and rank both patient preferences and physician (E. A. Sherson, , *et

al.*, 2014). Sherson *et al.* (2014) recommended future studies address these limitations,

document the outcomes that result from better physician training in lifestyle modification

strategies, and determine how to best routinely implement all aspects of the 5 A's for

weight management in family practice settings.

Hooper *et al.* (2015) studied the effects of total fat intake on body weight in the

Cochrane Review. The purpose of the study was to assess the effects of proportion of

energy intake from fat on measures of weight and body fatness (including obesity, waist

circumference and body mass index) in people not aiming to lose weight, using all

appropriate RCTs and cohort studies in adults, children and young people. The results of

the systematic review found that the effect of eating less fat (compared with usual diet)

created a mean weight reduction of 1.5 kg (95% confidence interval (CI) -2.0 to -1.1 kg),

but greater weight loss resulted from greater fat reductions (Hooper *et al.*, 2015).

The search included articles from CENTRAL to March 2014 and MEDLINE,

EMBASE and CINAHL to November 2014 and was not limited by language. The

inclusion criteria for the study follows: 1) randomized intervention trial, 2) included

children (aged - 24 months), young people or adults, 3) randomized to a lower fat versus

usual or moderate fat diet, without the intention to reduce weight in any participants, 4)

not multifactorial and 5) assessed a measure of weight or body fatness after at least six

months. The study was designed to include cohort studies in children, young people and

adults that assessed the proportion of energy from fat at baseline and assessed the

relationship with body weight or fatness after at least one year (Hooper *et al.*, 2015). The

data was extracted based on population, intervention, control and outcome measures and

measured weight and body fatness independently at all available time points (Hooper *et

al.*, 2015). The study performed random-effects meta-analyses, meta-regression,

subgrouping, sensitivity and funnel plot analyses. The patient sample included 32 RCTs

(approximately 54,000 participants) and 30 sets of analyses of 25 cohorts (Hooper *et al.*,

2015).

The results of the study showed a small but consistent reduction in weight in the

low fat arm compared with the usual fat arm (Hooper *et al.*, 2015). The study found

consistent evidence from RCTs in adults of a small weight-reducing effect of eating a

smaller proportion of energy from fat; this was seen in almost all included studies and

was highly resistant to sensitivity analyses (Hooper *et al.*, 2015). The size of the effect on

weight does not alter over time and is mirrored by reductions in body mass index (BMI)

(-0.5 kg/m2, 95% CI -0.7 to -0.3) and waist circumference (-0.3 cm, 95% CI -0.6 to -

0.02). However, the included cohort studies in children and adults most often do not

suggest any relationship between total fat intake and later measures of weight, body

fatness or change in body fatness (Hooper *et al.*, 2015). Moreover, there was a

suggestion that lower fat intake was associated with smaller increases in weight in

middle-aged but not elderly adults, and in change in BMI in the highest validity child cohort (Hooper *et al.*, 2015).

In an RCT, Bennett, Foley, Levine, & *et al.*(2013) investigated the behavioral treatment for weight gain prevention among black women in primary care practice. The two- arm RCT called the Shape Program compared changes in weight and cardio metabolic risk during a 12-month period among black women randomized to a primary care–based behavioral weight gain prevention intervention, relative to usual care (Bennett *et al.*, 2013). The results of the study showed that the participants had a mean age of 35.4 years, a mean weight of 81.1 kg, and a mean body mass index of 30.2 at baseline (Bennett *et al.*, 2013).

The sample size was 194 patients. They were randomized by those that were overweight and class 1 obese (body mass index [calculated as weight in kilograms divided by height in meters squared], 25-34.9), and premenopausal black women aged 25 to 44 years from a 6-site community health center system (Bennett *et al.*, 2013). The intervention included medium-intensity tailored behavior change goals, weekly self-monitoring via interactive voice response, monthly counseling calls, tailored skills training materials, and a gym membership (Bennett *et al.*, 2013). The main outcome measures were a twelve-month change in weight and body mass index and maintenance of change at 18 months. In the study, most patients were socioeconomically disadvantaged with 79.7% having educational level less than a college degree and 74.3% reporting annual income <$30 000 (Bennett *et al.*, 2013). The 12-month weight change was larger among intervention participants (mean [SD], −1.0 [0.5] kg), relative to usual care (0.5 [0.5] kg; mean difference, −1.4 kg [95% CI, −2.8 to −0.1 kg]; P = .04). At month

12, 62% of intervention participants were at or below their baseline weights compared with 45% of usual-care participants (P = .03). By 18 months, intervention participants maintained significantly larger changes in weight (mean difference, −1.7 kg; 95% CI, −3.3 to −0.2 kg). The results of the study demonstrated that a medium-intensity primary care–based behavioral intervention was efficacious for weight gain prevention among socioeconomically disadvantaged black women (Bennett *et al.*, 2013).

The study found that a "maintain, don't gain" approach might be a useful alternative treatment for reducing obesity-associated disease risk among some premenopausal black women. Although the results of the experimental RCT trial was double blinded, limitations to internal validity may have come from the following bias: selection bias, confounding, performance bias, and attrition bias (Bennett *et al.*, 2013; Dearholt & Dang, 2012). Weakness to the study included its small sample size of 194 patients and excluding non-English speaking patients. However, the study used the Shape Intervention for behavior change to promote weight loss and medium intensity IBT demonstrated weight loss efficacy among pre-menopausal women (Bennett *et al.*, 2013).

Preventing weight gain in this population over time might help maintain the population's lower relative risk of obesity-associated chronic disease and mortality (Bennett *et al.*, 2013). Bennett *et al.*(2013) believed that findings can have major clinical and public health significance. Since more than half (51.2%) of overweight and obese black women fall within the 25 to 34.9 BMI range, this population has elevated risk for future weight gain, extreme obesity, and obesity associated chronic disease. According to Bennett *et al.* (2013), socioeconomic factors were critical drivers of obesity risk behaviors and environments and pose a particular challenge to obesity interventions

tested among racial or ethnic minority populations. Moreover, the Shape program was conducted in the primary care setting reflecting the many challenges faced by primary care providers in busy and under- served community health center settings (Bennett *et al.*, 2013).

      Synthesis of Level I- Grade B Articles. The four Level I-Grade B studies provided results that were reasonably consistent; sufficient sample size for the study design; some control, fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence. Moreover, the studies provided strong evidence for the important role primary care providers have, in conjunction with the 5 A's with MI, to promote weight loss. (Befort *et al.*, 2016; Bennett *et al.*, 2013; Hooper *et al.*, 2015; E. A. Sherson, , *et al.*, 2014). The Shape participants were recruited from a socioeconomically disadvantaged population that has been underrepresented in obesity intervention trials (Bennett *et al.*, 2013) Therefore, the studies will all help to design an effective EBP in an RHC.

      Level I- Grade C Research. According to Dearholt & Dang (2012), studies rating included experimental studies, randomized controlled trials (RCT), and systematic reviews of RCTs, with or without meta-analysis and the quality provided little evidence with inconsistent results; insufficient sample size for the study design; conclusions cannot be drawn. Two articles had this rating.

Table 2.3

Level I- Grade C Research

Author-Year	Name of Article
1. Foley *et al.* (2012)	Weight Gain Prevention Among Black Women in the Rural Community Health Center Setting: The Shape Program.
2. Steglitz *et al.* (2015)	Evaluation of an electronic health record-supported obesity management protocol implemented in a community health center: a cautionary note.

Note: Abbreviated from Appendix J

In an 18- month RCT, Foley *et al*. (2012) investigated the behavioral treatment for weight gain prevention among black women in primary care practice called the Shape Program. According to Foley *et al.* (2012) the promotion of weight maintenance can be achieved at lower treatment intensity than can weight loss and held promise in reducing obesity-associated chronic disease risk. Weight gain prevention may also be more consistent with the obesity-related sociocultural perspectives of black women than traditional weight loss approaches (Foley *et al.*, 2012).

The research found that nearly 60% of black women are obese. Despite their increased risk of obesity and associated chronic diseases, black women have been underrepresented in clinical trials of weight loss interventions. Underrepresentation was particularly evident in trials conducted in the primary care setting. Further, existing obesity treatments are less effective for this population.   The study utilized an innovative intervention approach to lower the risk of obesity by using inexpensive mobile technologies. The sample size included 194 premenopausal black women aged 25 to 44 years with a BMI of 25-34.9 kg/m2. Participants were randomized either to usual care or

to a 12-month intervention. The intervention consisted of: tailored obesogenic behavior change goals, self-monitoring via interactive voice response phone calls, tailored skills training materials, 12 counseling calls with a registered dietitian, and a 12-month YMCA membership. Participants were followed over 18 months, with study visits at baseline, 6-, 12- and 18-months. Anthropometric data, blood pressure, fasting lipids, fasting glucose, and self-administered surveys were collected at each visit. Accelerometer data was collected at baseline and 12-months. At baseline, participants were an average of 35.4 years old with a mean body mass index of 30.2 kg/m2. Participants were mostly employed and low-income. The article by Foley *et al.* (2012) provided inconsistent results related to weight loss because it found that maintaining weight may hold promise as an alternative to weight loss.

The evidence suggested that being overweight was less health damaging for black women compared to other racial/ethnic groups, maintaining weight status among black women in the BMI$\leq$ 35 kg/m^2 range may hold promise as an alternative obesity treatment strategy. The study was designed to detect a difference of 1.03 kg/m2 in BMI at the 0.05 alpha level and 80% statistical power using a two-tailed test for differences (Foley *et al.*, 2012). However, the study was limited because it excluded women with cancer and those that were pregnant. In addition, the intervention design also precluded blinding either patients or provider to treatment assignments.

The second article by Steglitz *et al.* (2015), supported the PCP's role in helping curb the obesity epidemic. The purpose of the study was to determine whether implementation of an obesity intake protocol and electronic health record (EHR) form to guide behavior modification would facilitate identification and management of adult

obesity in a Federally Qualified Health Center serving low-income, Hispanic patients. The results of the study showed the clinicians reported that the intake protocol and form increased their performance of obesity-related assessments and their confidence in managing obesity.

The design of the study included three approaches called the Clinician Study; Exposure Study; and the Population Study. In these studies, the clinician and patient outcomes were examined before and after the addition of the weight management protocol and form. Twelve clinicians self-reported obesity management practices in the Clinician Study. In the Population Study, BMI and order data from 5000 patients and all 40 clinicians in the practice were extracted from the EHR preintervention and post intervention. In the Exposure Study, EHR-documented outcomes for a sub-sample of 46 patients exposed to the obesity management form were compared to matched controls. However, no improvement in obesity management practices or patient weight-loss was evident in EHR records for the overall clinic population. Further analysis revealed that only 55 patients were exposed to the form. Exposed patients were twice as likely to receive weight-loss counseling following the intervention, as compared to before, and more likely than matched controls. However, their obesity outcomes did not differ. In addition, results suggested that an obesity intake protocol and EHR-based weight management form may facilitate clinician weight-loss counseling among those exposed to the form. Significant implementation barriers could limit exposure, however, and needed to be addressed.

PCPs reported that the intake protocol and form increased their performance of obesity-related assessments and their confidence in managing obesity (Steglitz *et al.*,

2015). Two-way repeated measures analysis of variance (ANOVA) was used to compare

BMI change in cases and controls (Steglitz *et al.*, 2015). The most recent BMI recording

in each of the pre-assessment and post assessment periods was used as the measure of

BMI. Using EHR documentation of obesity on the Problem List was nearly universal

(98% through 100%) for both cases and controls even prior to the obesity intervention

and did not change over time (x2(1, N¼46) ¼0.95, P>0.05). The provision of weight-loss

counseling did increase significantly after exposure to the form among cases, but not

among controls (F (1, 81) ¼13.33, P<0.001, partial g2¼0.14). For both cases and

controls, BMI decreased over time but the between group difference was not significant

(F 1, 46) ¼0.58, P¼0.45, partial g2¼0.01).

Further analysis revealed that only 55 patients were exposed to the form. Exposed

patients were twice as likely to receive weight-loss counseling following the intervention,

as compared to before, and more likely than matched controls. Some of the limitations

include omission on patients with obesity being overlooked and patients not being given

the hardcopy of the Checklist, for which completion rates were not recorded (Steglitz *et

al.*, 2015). The study by Steglitz *et al.*(2015) encouraged efforts to engage, train, and

maintain clinic stakeholders to ensure consistent treatment delivery and receipt by the

broad patient population. There were many other implementation challenges related to

work flow and therefore the data is less reliable.

Synthesis of Level I-Grade C Articles. Both these studies provided useful

information in helping obese AA women lose weight in an RHC. The article by Foley *et

al.* (2012) showed promise in using the mobile technology to help black women lose

weight in the rural community but needed more participants. Similar to other articles

reviewed, Steglitz *et al.*(2015) encouraged efforts to engage, train, and maintain clinic personnel in providing the EBP to the patient population with consistency.

Level II- Grade C Research

The strength of evidence in this group included research considered to be quasi-experimental (Dearholt & Dang, 2012). According to Dearholt & Dang (2012) the articles were considered low in quality of evidence or have major flaws. In addition, the research studies provided inconsistent results, insufficient sample size, and conclusion were inconclusive. Summative reviews were undefined, poorly defined, or limited search strategies; insufficient evidence with inconsistent results. According to Dearholt & Dang (2012), research studies with Grade C quality of evidence had little evidence with inconsistent results, insufficient sample size, and conclusions cannot be drawn. There were only two articles with this rating.

Table 2.4

Level II- Grade C Research

Author-Year	Name of Article
1. Mastellos *et al.* (2014a)	Trans theoretical model stages of change for dietary and physical exercise modification in weight loss management for overweight and obese adults.
2. Peterson & Cheng (2013)	Physical activity counseling intervention to promote weight loss in overweight rural women.

Note: Abbreviated from Appendix J

Mastellos *et al.* (2014a) assessed the effectiveness of dietary intervention or physical activity interventions, or both, and other interventions based on the trans theoretical model (TTM) stages of change (SOC) to produce sustainable (one year and

longer) weight loss in overweight and obese adults. A systematic review of the intervention found that the evidence to support the use of TTMSOC in weight loss interventions is limited by risk of bias and imprecision, not allowing firm conclusions to be drawn (Mastellos *et al.*, 2014a). The results of the systematic review highlighted the need for well-designed RCTs that applied the principles of the TTM SOC appropriately to produce conclusive evidence about the effect of TTM SOC lifestyle interventions on weight loss and other health outcomes (Mastellos *et al.*, 2014a).

The model has two main underlying assumptions. First, the majority of people were not ready to change their behavior and will therefore not be helped by traditional action-oriented prevention programs. Second, behavioral change was complex and may unfold in a sequence of stages. The TTM believed that individuals typically adapt to these different processes of change according to the progress they have made towards changing their behavior (Mastellos *et al.*, 2014a). According to Mastellos *et al.* (2014a), two review authors independently extracted the data, assessed studies for risk of bias and evaluated overall study quality according to GRADE (Grading of Recommendations Assessment, Development and Evaluation). The two authors resolved disagreements by discussion or consultation with a third party and then a narrative, descriptive analysis was conducted for the systematic review.

Mastellos *et al.*(2014a) used studies from searches of multiple electronic bibliographic databases including *The Cochrane Library*, MEDLINE, EMBASE and PsycINFO. The date of the last search, for all databases, was 17 December 2013. Trials that were included in the sample had to meet the selection criteria: trials were included if they fulfilled the criteria of randomized controlled clinical trials (RCTs) using the TTM

SOC as a model, a theoretical framework or guideline in designing lifestyle modification strategies, mainly dietary and physical activity interventions, versus a comparison intervention of usual care; one of the outcome measures of the study was weight loss, measured as change in weight or body mass index (BMI); participants were overweight or obese adults only; and the intervention was delivered by healthcare professionals or trained lay people at the hospital and community level, including at home (Mastellos *et al.*, 2014a). The results of the study showed that three studies met the inclusion criteria.

From the three studies the sample allocated 2971 participants to the intervention and control groups and the total number of participants randomized to the intervention groups was 1467, while 1504 were randomized to the control groups (Mastellos *et al.*, 2014a). The intervention for the study was the use of TTM SOC in combination with diet or physical activity, or both, and other interventions in the included studies produced inconclusive evidence that TTM SOC interventions led to sustained weight loss. The mean difference between intervention and control groups varied from 2.1 kg to 0.2 kg at 24 months; 2971 participants; 3 trials; low quality evidence (Mastellos *et al.*, 2014a). The length of intervention was 9, 12 and 24 months in the different trials.

Following application of TTM SOC there were improvements in physical activity and dietary habits, such as increased exercise duration and frequency, reduced dietary fat intake and increased fruit and vegetable consumption (very low quality evidence). Weight gain was reported as an adverse event in one of the included trials. None of the trials reported health-related quality of life, morbidity, or economic costs as outcomes. The main limitations included inadequate reporting of outcomes and the methods for allocation, randomization and blinding; extensive use of self-reported measures to

estimate the effects of interventions on a number of outcomes, including weight loss, dietary consumption and physical activity levels; and insufficient assessment of sustainability due to lack of post-intervention assessments (Mastellos *et al.*, 2014a). The small number of studies and their variable methodological quality limited the applicability of the findings to clinical practice (Mastellos *et al.*, 2014a).

The purpose of the next article, "Physical Activity Counseling Intervention to Promote Weight Loss in Overweight Rural Women," identified key behavioral factors that contributed to physical activity and weight management in overweight, rural women (Peterson & Cheng, 2013). The results of the study showed higher levels of physical activity were associated with greater self-efficacy and the self-esteem domain of social support (Peterson & Cheng, 2013). Rural women reported also more depressive symptoms over the year. In addition, women did not significantly increase physical activity and gained weight during the 1-year study (Peterson & Cheng, 2013).

According to Peterson & Cheng (2013) the study sought to determine the degree to which social support, stage of behavior change, and self-efficacy for physical activity and depressive symptoms are linked to physical activity, body weight, and body mass index (BMI). The design for the study included a pretest–posttest, descriptive longitudinal design to determine the influence of behavioral factors on physical activity and weight management following the Stay Alive with Five—A's program, a primary care counseling intervention designed to increase physical activity to promote weight loss in rural women (Peterson & Cheng, 2013). A rural primary care clinic in a town of 741 people was the setting for this study and the sample size of 27 rural women was recruited to participate in the Stay Alive with Five—A's program. The sample represented a

convenience sample of adult women seeking guidance in weight management at a rural primary care clinic. All of the women were overweight or obese, except one woman was of normal weight (BMI = 21.7). Sample size was appropriate in allowing for 20 degrees of freedom to determine effect sizes and an adequate sample size for a fully powered study. Two participants withdrew from the study for personal reasons shortly after enrollment and a sample of 25 women completed the study. Inclusion criteria were women (18–65 years) seeking assistance for weight loss in a rural primary care clinic and self-reporting that they could safely engage in moderate intensity physical activity goal of this study was to determine if the behavioral mechanisms conceptualized in the Stay Alive with Five—A's intervention contributed to changes in physical activity, body weight, and BMI.

These behavioral mechanisms included (a) social support (appraisal, belonging, tangible aid, self-esteem domains); (b) stage of behavior change; (c) self-efficacy, and (d) depressive symptoms screening, as suggested by the clinic staff (Peterson & Cheng, 2013). The racial make-up of the county is 94% white and 6% Hispanic. Rural women reported more depressive symptoms over the year. Women did not significantly increase physical activity and gained weight during the 1-year study. A descriptive data analyses was conducted for all demographic, clinical characteristics, and primary outcome variables, including age, height, weight, BMI, and physical activity behaviors. Utilizing the International Physical Activity Questionnaire (IPAQ). The IPAQ has been found to have acceptable test–retest reliability (Craig et al., 2003). Strong positive correlations between the IPAQ and physical activity accelerometer data were found (rho = 0.55; p < .001). Body weight and height measurements were performed and BMI was calculated

(weight in kg/height in m2). In this study, a higher level of self-efficacy to exercise alone was associated with a significant decrease in weight (1.12 lbs.; $p = .01$) and BMI (0.19; $p = .01$). This finding is important because when women cannot find an exercise partner or person to walk with them, they need the self-confidence required to exercise alone. In rural areas where women may live miles from another person, the ability to plan and complete self-directed exercise becomes more important if women lack self-confidence.

Some of the limitations in this study included attrition bias that could affect the intervention fidelity of the study since it was a small study. Patients did not keep appointments and the intervention was not delivered as planned or inconsistent. Rural women have limited resources available to increase physical activity to facilitate weight loss (Peterson & Cheng, 2013). Peterson & Cheng (2013) believed the routine screening and treatment for depression in rural women may need to be initiated concurrently with interventions to promote health behavior changes.

Synthesis of Level II-Grade C Articles. Similar to previous studies these two articles supported using the 5 A's with MI approach but was limited by bias and imprecision in data collection (Mastellos *et al.*, 2014a; Peterson & Cheng, 2013). The study by Peterson *et al.* (2013) unfortunately suffered from attrition and made the results less robust. However, both articles supported the usefulness of using the 5 A's approach with MI as a good intervention in promoting weight loss.

Level III- Grade A Research

The strength of evidence is this group emanates from studies that are non-experimental, qualitative, or those with meta-analysis. The quality of evidence was considered high. High quality of evidence allows for sufficient sample size, consistent

recommendations based on comprehensive literature that includes thorough reference to scientific evidence (Dearholt & Dang, 2012). Only one article had this rating.

Table 2.5

Level III- Grade A Research

Author-Year	Name of Article
1. Kushner & Ryan (2014)	Assessment and lifestyle management of patients with obesity: Clinical recommendations from systematic reviews.

Note: Abbreviated from Appendix J

The purpose of the article by Kusher & Ryan (2014) was to describe current best practices for assessment and lifestyle management of obesity. It also demonstrated how the updated Guidelines (2013) for Managing Overweight and Obesity in Adults based on a systematic evidence review sponsored by the National Heart, Lung, and Blood Institute (NHLBI) could be applied to an individual patient. Based on the systematic evidence review, recommendations and a treatment algorithm were developed by the guideline panel and published as a full report and executive summary.

The Guidelines (2013) provided a detailed review of lifestyle intervention. The second aspect of the Guidelines (2013) lifestyle recommendation included an *intensive* comprehensive lifestyle intervention. The Guidelines (2013) endorsed the prescription of "on site, high intensity (i.e., 14 sessions in 6 months) comprehensive weight loss interventions provided in individual or group sessions by a trained interventionist." This program can reliably produce an 8.2-kg (18-lb) weight loss (which can approximate reductions of 5%to 10%) in 6 months. If patients do not have access to face-to-face programmatic approaches, electronically delivered weight loss programs (including by

telephone) that included personalized feedback from a trained interventionist were the next-best option.

The Guidelines (2013) recommended that primary care practitioners prescribe face-to-face or telephone-delivered weight loss maintenance programs for at least 1 year. They should provide regular contact (at least monthly) with a trained interventionist who would help patients engage in high levels of physical activity (i.e., 200-300 min/wk.), would monitor bodyweight regularly (at least weekly), and help to consume a reduced-calorie diet (needed to maintain lower body weight). Providing care for patients who are overweight or obese and assisting them with weight loss was both a challenge and an opportunity for primary care practitioners. The challenge for clinicians was learning how to translate the behavioral intervention into the office setting. The Guidelines (2013) provided a road map for clinicians in primary care and put forth some novel and key messages.

The results of the study by Kusher & Ryan (2014) showed that the systematic evidence review conducted for the Guidelines (2013) for Managing Overweight and Obesity in Adults supported treatment recommendations in 5 areas to include risk assessment, weight loss benefits, diets for weight loss, comprehensive lifestyle intervention approaches, and bariatric surgery. For areas outside this scope, recommendations were supported by other guidelines (for obesity, 1998 NHLBI-sponsored obesity guidelines and those from the National Center for Health and Clinical Excellence and Canadian and US professional societies such as the American Association of Clinical Endocrinologists and American Society of Bariatric Physicians; for physical activity recommendations, the 2008 Physical Activity Guidelines for Americans); a

PubMed search identified recent systematic reviews that covered depression and obesity, motivational interviewing for weight management, metabolic adaptation to weight loss, and obesity pharmacotherapy (Kushner & Ryan, 2014).

The Guidelines (2013) recommended that clinicians offer patients who would benefit from weight loss (either BMI of ≥30 with or without comorbidities or ≥25 along with 1 comorbidity or risk factor) intensive, multicomponent behavioral intervention. Weight loss was achieved by creating a negative energy balance through modification of food and physical activity behaviors (Kushner & Ryan, 2014). According to Kushner & Ryan (2014) the first step in obesity management was to screen all adults for overweight and obesity. A medical history should be obtained assessing for the multiple determinants of obesity, including dietary and physical activity patterns, psychosocial factors, weight-gaining medications, and familial traits. Emphasis on the complications of obesity to identify patients who would benefit the most from treatment was more useful than using BMI alone for treatment decisions. The Guidelines (2013) endorsed comprehensive lifestyle treatment by intensive intervention. Kusher & Ryan (2014) believed that treatment could be implemented either in a clinician's office or by referral to a registered dietitian or commercial weight loss program. Weight loss of 5% to 10% was the usual goal but was not necessary for patients to attain a BMI of less than 25 to achieve a health benefit (Kushner & Ryan, 2014).

Synthesis of Level III-Grade A Articles. Similar to other studies, Kusher & Ryan (2014) believed that weight loss treatment should be implemented in a primary care provider's office. Weight loss of 5% to 10% is the usual goal but is not necessary for

patients to attain a BMI of less than 25 to achieve a health benefit (Kushner & Ryan, 2014).

Level III- Grade B Research

The strength of the evidence was considered reasonably consistent results, sufficient sample size, some control, with fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence (Dearholt & Dang, 2012). Only one article had this rating.

Table 2.6

Level III- Grade B Research

Author-Year	Name of Article
1. Brown (2012)	Primary care interventions for obesity: behavioral support, whether delivered remotely or in person, facilitates greater weight loss over 2 years than self-directed weight loss.

Note: Abbreviated from Appendix J

The purpose of the RCT study by Brown (2012) was to comment on a previous trial by Appel *et al.* in which two multi-component lifestyle interventions were compared and evaluated against a control, within routine primary care practice in Baltimore, USA. Primary care nursing was a key site for provision of and referral on to weight loss interventions. The results of the study by Brown (2012) found that the intensity of support required by participants reduced over time for both groups with the in-person group apparently preferring the more flexible remote methods (telephone, email and web pages).

However, while the efficacy of lifestyle and behavioral interventions in clinical trials was established, less was known of patient's adherence and outcomes in routine practice (Brown, 2012). The study by Brown used a RCT to examine participation rates in the intervention groups (Brown, 2012). Participants were randomized to one of three groups. Two active interventions with differing levels of in person patient support were compared and evaluated against a control. The active interventions drew on established social-cognitive and behavioral theories including motivational interviewing. Evidence-based dietary (the DASH (Dietary Approaches to Stop Hypertension) diet), physical activity and behavior change elements were incorporated into both interventions via; trained coaches; interactive learning modules within web-based support; and the involvement of supportive primary care clinicians. The active interventions differed in the amount of in person support included so as to compare only remote (web, email, phone) support with the addition of in person support (Brown, 2012).

The study by Brown (2012) included 1370 individuals registering at the study website and only 415 individuals were randomized. Overall, the mean age was 54 years in the study and the majority were women (63.6%). Based on the participants' ethnicity, a total of 56.1% were White, 41% were Black and <5% were Asian, Hispanic and other groups. The majority were college graduates (59.3%) and employed (75.2%). Only about a fifth (21.9%) had a household income below $50 000. Most (86.7%) of them were daily users of the internet. Mean body mass index at baseline was 36.6. The primary outcome was weight loss with measurements at 6, 12 and 24 months (94.5% follow-up). All groups lost weight: −0.8 kg for the control group; −4.6kg for the remote support group; and −5.1 kg for the in-person support group. The intervention group changes in

comparison to control were statistically significant at the p<0.001 level but not in comparison with each other (Brown, 2012).

Although this was a high-quality pragmatic trial with good applicability to clinical practice, it added to the evidence that multi-component interventions help people to lose weight. The study demonstrated that it could be achieved in a primary care context with weight improvement sustained over 2 years. It also added evidence about how web based resources and remote support could be employed to improve adherence (Brown, 2012). However, the article was limited by its selection bias (Brown, 2012). Participants were required to be computer literate and have access to a computer. In addition, patients on medications affecting weight were excluded (Brown, 2012).

Synthesis of Level III-Grade B Articles. The article by Brown (2012) provided good evidence and consistent results in creating a weight loss program. Results of the article were limited to generalizability because not all patients in RHC have access to computers or broadband service.

Level IV- Grade A Research

According to Dearholt & Dang (2012) the studies included the opinion of nationally recognized experts based on research evidence or expert consensus panel (systematic review, clinical practice guidelines). Research provided consistent results with sufficient sample size, adequate control, and definitive conclusions and the recommendations were based on extensive literature review that included thoughtful reference to scientific evidence (Dearholt & Dang, 2012). Examples of this type of research include clinical practice guidelines and position statements from consensus panels (Dearholt & Dang, 2012). Four articles had this rating.

Table 2.7

Level IV-Grade A Research

Author-Year	Name of Article
1. McGinnis Paul, MPA *et al.* (2014)	Integrating Primary Care Practices and Community-based Resources to Manage Obesity.
2. McGuire, Shelley (2012)	Institute of Medicine. 2012. Accelerating progress in obesity prevention: solving the weight of the nation.
3. U.S. Department of Health & Human Services, (revised 2014)	National Guideline Clearinghouse | Adult weight management evidence-based nutrition practice guideline.
4. Osunlana, *et al.* (2015)	5As Team obesity intervention in primary care: development and evaluation of shared decision-making weight management tools.

Note: Abbreviated from Appendix J

The purpose of the article by Paul McGinnis *et al.* (2014) provided a great resource called: The *Bridge-Building Toolkit.* In 2010 the Oregon Rural Practice-based Research Network (ORPRN) received funding from the Agency for Health Care Research and Quality (AHRQ) for research into "Integrated Primary Care Practices and Community-based Programs to Manage Obesity." Over a 2-year period they worked with eight primary care practices and community-based health coalitions in four rural Oregon communities to evaluate local clinic and community factors necessary to develop sustainable linkages between primary care and community resources for obesity management. In addition, they designed, implemented, and evaluated a participatory process using practice facilitation and community-health development principles to achieve these linkages (McGinnis Paul *et al.*, 2014).

The findings from this 2-year process were used to develop this toolkit to help other primary care clinics that want to improve linkages with community-based resources for obesity management (McGinnis Paul *et al.*, 2014). In particular, the toolkit was designed to help cross a "chasm" in community by building bi-directional linkages (a bridge) between the primary care clinic and community-based resources that can help patients maintain or achieve a healthy weight. Helping build a bridge could foster positive momentum for practice improvement. The bridge-building process could build on those factors as staffs were often experts on their community (McGinnis Paul *et al.*, 2014). According to McGinnis *et al.* (2014) staff members understood the challenges of achieving a healthy lifestyle in the local environment and could be a valuable resource.

Leadership support was critical for project success (McGinnis Paul *et al.*, 2014). Clinics where there was clear buy-in from the management and resources allocated to support project activities experienced greater success. A 12-month intervention to improve linkages between primary care practice and community–based resources to manage obesity simply lays the foundation (McGinnis Paul *et al.*, 2014). Addressing obesity management required support from individual clinics, the community, and health systems. According to McGinnis Paul *et al.*(2014) the use of practice and community facilitation was critical to engaging these diverse partners

The toolkit elaborated on the Etz *et al.,* Model by providing resources to be used by clinic staff to build bridges between rural primary care clinics and community-based resources for obesity management (McGinnis Paul *et al.*, 2014). Strengths of the article included the resources provided i.e. weight loss handouts, flow-sheets, chart audit forms, worksheets for assess BMI screening, and many more. Limitation of this tool-kit include

included the skills of the researcher and the data could be easily influenced by personal idiosyncrasies and biases of the researchers.

Another article from the Institute of Medicine (IOM) helped to identify catalyst to speed the progress of obesity prevention. The IOM was established in 1970 under the charter of the National Academy of Sciences, the Institute of Medicine provides independent, objective, evidence-based advice to policy makers, health professionals, the private sector, and the public (McGuire, 2012a). The consensus panel evaluated hundreds of strategies using the to solve the weight of the nation (McGuire, 2012a). The purpose of this report brief from the IOM was to advise the nation and improve health (McGuire, 2012a). The strengths of the report stressed for a bold, sustained, and comprehensive approach.

The report believed that action must occur at all levels—individual, family, community, and the broader society—and ongoing assessment of progress is key as efforts move forward. The articles encouraged the need to identify and engage leaders at all levels and across all sectors of society who can act to prevent obesity. Health care providers were encouraged to adopt standards of practice for preventing, screening, diagnosing, and treating overweight and obese patients of all ages to help them achieve and maintain healthy weight and avoid obesity-related complications. The report encouraged PCPs to provide patients with more knowledge about obesity prevention during their office visits (McGuire, 2012a).

There were strengths and weakness in this brief report. The recommendation from the well-respected committee of the IOM, when implemented together, could profoundly reshape the environments where people live, work, play, and learn (McGuire, 2012a).

According to McGuire (2012a) if leaders across all levels of society were engaged and implemented this comprehensive approach within the next decade, physical activity would become an integral and routine part of most people's lives, and adults and children would have opportunities for enjoyable physical movement anywhere they spend time. However, limitations of this report included a solid pathway for practice change and lacked the specific steps to solve the complex problem of obesity.

The purpose of the next resource was to find the best evidence to help with adult weight management. According to AHRQ, the search strategy for identification and inclusion of articles and reports should be systematic and reproducible, not haphazard. The specific objectives of the guideline were to define evidence-based nutrition recommendations for registered dietitian nutritionists (RDNs) that are carried out in collaboration with other healthcare providers. In addition, to guide practice decisions that integrated medical, nutritional and behavioral strategies. The guidelines also helped to reduce variations in practice among RDNs and provided the RDN with evidence-based practice recommendations to adjust MNT or recommended other therapies to achieve positive outcomes. The AHRQ also recommended developing guidelines for interventions that have measurable clinical outcomes. These guidelines would promote optimal nutrition support within the cost constraints of the healthcare environment (U.S. Department of Health and Human Services, Released 2006 May (revised 2014)).

The recommendations in the guideline were based on a systematic review of the literature. Searches of PubMed, Medline, CENTRAL, Database of Abstracts of Reviews of Effects (DARE), and Agency for Healthcare Research and Quality (AHRQ) database were performed on the following topics: metabolic syndrome and disorders of lipid

metabolism; weight management; effectiveness of medical nutrition therapy (MNT) for overweight/obesity in adults; tele nutrition provided by registered dietician; counseling theories; Mifflin-St. Jeor equation; nutrition adequacy; meal and snack patterns; breakfast consumption (U.S. Department of Health and Human Services, Released 2006 May (revised 2014)). The systematic review resulted in a total number of supporting documents for all the reviewed topics and provided twenty recommendations. However, the recommendations received a Grade I (strong) to Grade V (no evidence) that pertained to question being addressed.

There were many strengths and weaknesses in this guideline. One of the Grade I recommendations encouraged realistic weight goal setting. It suggested that the provider should collaborate with the individual regarding a realistic weight loss goal, such as one of the following: up to two pounds per week; up to 10% of baseline body weight; a total of 3% to 5% of baseline body weight if cardiovascular risk factors (hypertension, hyperlipidemia and hyperglycemia) are present. Studies regarding the effectiveness of MNT for under six months reported significant weight losses of approximately one to two pounds per week, and six to 12 months of MNT resulted in significant mean weight losses of up to 10% of body weight. While a sustained weight loss of 3% to 5% was likely to result in clinically meaningful reductions in triglycerides, blood glucose, glycosylated hemoglobin (HbA1c), and the risk of developing type 2 diabetes, greater amounts of weight loss would also reduce blood pressure, improve low-density lipoprotein cholesterol (LDL-C) and high-density lipoprotein cholesterol (HDL-C), and reduce the need for medications. The guideline would provide a framework and offered good information to help support the EBP question. One of the limitations of this

guideline was that it was intended for registered dietitian nutritionists (RDNs) involved in providing medical nutrition therapy (MNT) for adult weight management.

Another study called the 5 A'sT study was a RCT with mixed method evaluation to improve the number and quality of weight management encounters in primary care in Canada (Osunlana *et al.*, 2015). The article created strategies to improve the implementation of evidence-based clinical practice guidelines in shared decision-making discussions between providers and patients. They included 46 community family practices in South Edmonton dedicated to serving a population of over 192,655 Albertans (Osunlana *et al.*, 2015). The process of tool development involved the research team and the 5 A'sT participants.

The research team consisted of: two external practice facilitators, an anthropologist, epidemiologist, family physicians, an obesity expert, public health experts and graphic designers. The primary care network staff, 5 A'sT participants, included: a 29-member multidisciplinary team including 15 RNs/NPs, 7 MHWs and 7 RD, one of whom served as a liaison internal practice facilitator (clinical champion). The 5 A'sT participants were previously randomized within their clinic teams to the intervention group of the 5 A'sT study. The 5 A'sT tools helped primary care interdisciplinary practitioners create scripts and approaches to facilitate rapid patient assessment, weight management counselling and shared decision-making to make obesity management more of a part of their routine practice. Tools were co-developed by the multidisciplinary research team and the 5 A'sT, which included registered nurses/nurse practitioners ($n = 15$), mental health workers ($n = 7$) and registered dieticians ($n = 7$), who were previously

randomized to the 5A'sT intervention group at a primary care network in Edmonton, Alberta, Canada (Osunlana *et al.*, 2015).

The 5 A'sT tool development occurred through a practice/implementation-oriented, need-based, iterative process during learning collaborative sessions of the 5A'sT intervention (Osunlana *et al.*, 2015). Feedback during tool development was received through field notes and final provider evaluation was carried out through anonymous questionnaires (Osunlana *et al.*, 2015). Twelve tools were co-developed with 5 A'sT and all tools were evaluated as either 'most useful' or 'moderately useful' in primary care practice by the 5AsT (Osunlana *et al.*, 2015). The findings of this research study showed the need for: tools that were adaptive, tools to facilitate interdisciplinary practice, tools to help patients understand realistic expectations for weight loss and shared decision-making tools for goal setting and relapse prevention (Osunlana *et al.*, 2015)

Field notes were taken of all intervention sessions to monitor the implementation process and context (Osunlana *et al.*, 2015). The 5 A'sT reviewed and critiqued proposed tools through group discussions and individual use of these tools in their practices. Feedback to the research team occurred through collection of field notes at learning collaborative sessions where these tools were discussed. Once a consensus was reached, tools were edited and refined. A final assessment was carried out with the use of anonymous questionnaires to evaluate the usefulness of all developed tools in these providers' practices (Osunlana *et al.*, 2015). Providers rated the overall usefulness of handouts/tools developed for use, in their practice on a 7-point Likert scale. Responses recorded as 'excellent' and 'very good' were grouped as 'most useful', 'good' and

'satisfactory' were grouped as 'moderately useful', whereas 'poor' and 'very poor' were grouped as 'not useful'. This survey assessed provider acceptability and feasibility of further use in practice.

After 6 months of the 5 A'sT intervention, the providers were asked to rate the overall usefulness of the 5 A'sT tools in their practice. Eighty-three per cent ($n = 24$) of providers completed the survey. All tools by Osunlana *et al.* (2015) were found to be predominantly 'most useful' or 'moderately useful' and more than half of the providers rated the following as 'most useful': weight loss versus patient important health and wellness outcome graph ($n = 19$, 79.2%), stress and eating ($n = 14$, 58.3%), obesity fact sheets ($n = 13$, 54.2%) and 4Ms cards (N = 13, 54.2%). Analyses reveal variations in the rating of 'most useful' tool among 5AsT providers by discipline. The 5AsT tools are primary care tools which extend the utility of the 5 A's of obesity management framework in clinical practice (Osunlana *et al.*, 2015). The implementation of a 5AsT tool kit complemented the existing 5 A's of obesity management suite of tools to facilitate obesity management in primary care.

A limitation of the tool development and evaluation process was limited to primary care nurses, NPs, and dieticians (Osunlana *et al.*, 2015). According to Osunlana *et al.*(2015) future work would be needed to evaluate physicians' and patients' perceptions of the tools. Another limitation was that the practical utility of the tools was evaluated by healthcare practitioners, who were directly involved in the 5AsT intervention leading to them being well-versed in the 5 A's framework for obesity management. Thus, whether these tools will also be found acceptable and helpful by healthcare providers unfamiliar with the 5 A's framework remains to be determined.

Synthesis of Level IV-Grade A Articles. The tool-kit will be useful in practice when used by trained providers (McGinnis Paul *et al.*, 2014; Osunlana *et al.*, 2015). Managing obesity required the support from individual clinics and the community (McGuire, 2012b). Similarly, the ARQH (Released 2006 May (revised 2014)) provided a summative review, considered as well-defined, reproducible search strategies; producing consistent results with sufficient numbers of well-defined studies. The authors cautioned that health care providers need to be trained in using the 5 A's with MI approach in primary care practice.

Level IV- Grade B Research. The quality of grade B research was reasonably consistent results, sufficient sample size, some control, with fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence (Dearholt & Dang, 2012). There was one article with this rating.

Table 2.8

Level IV- Grade B Research

Author-Year	Name of Article
1. Nam (2013)	Effects of social support and spirituality on weight loss for rural African-American women.

Note: Abbreviated from Appendix J

The purpose of study was to create 10-week weight-loss intervention program designed to address the problem. The results demonstrated that the average weight and BMI of all participants in either a spiritually-based or a nonspiritual-based program were lower at the completion of the intervention program. In addition, the average weight and

BMI loss for the spiritual group was significantly greater than the average weight and BMI loss for the non-spiritual group (Nam, 2013).

Two different interventions (spiritually based and nonspiritual based) were tested, and both utilized a pre-test, posttest design. The sample size at the beginning of the study included 29 AA women participants in the non-spiritual group and 45 participants in the spiritual group. However, the numbers of participants with complete weight information were 17 for the non-spiritual group and 31 for the spiritual group, thus there were incomplete data for 12 participants in the non-spiritual group and 14 participants in the spiritual group (Nam, 2013). The data was analyzed using the Mantel-Haenszel Test and Fisher's Exact Test to assess these differences.

Hypothesis la was assessed by using a paired T-Test; the average weight-loss for the non-spiritual group was 2.61 pounds, which indicated a significant reduction in the average weight (T=4.68, DF=47, p-value<0.0001). Hypothesis lb. was assessed by using a paired T-Test. The average BMI loss for the group was 1.03, which indicated a significant reduction in the average BMI (T=6.18, DF=46, p-value<0.0001). In the non-spiritual group, in which we used a paired T-Test, a) the average weight loss for the non-spiritual group was 0.85 pounds, which indicates a not significant reduction in the average weight (T=0.80, DF=16, p-value = 0.4364); b) the average BMI loss for the non-spiritual group was 0.64, which DF=16, p-value = 0.0437). In the spiritual group, in which we used a paired T-Test, a) the average weight-loss was 3.58 pounds, which indicated a significant reduction in the average weight (T=6.15, DF=30, p-value < 0.0001), and b) the average BMI loss for the spiritual group was 1.24, which pointed to a significant reduction in the average BMI (T=6.47, DF=29, p-value < 0.0001).

According to these tests, there was no evidence of differences in the mean scores of the two groups for either of these demographic variables. Therefore, the results of these two tests demonstrate that it would not be necessary to include any socio-demographic controls in this assessment. The results demonstrated that the average weight and BMI of all participants in either a spiritually-based or a nonspiritual-based program were lower at the end of the intervention program. In addition, the average weight and BMI loss for the spiritual group was significantly greater than the average weight and BMI loss for the non-spiritual group (Nam, 2013).

The study had major methodical flaws. The study was only a 10-week weight loss intervention program. It was also difficult to extrapolate whether the benefits of this weight-loss intervention program can be sustained in the long term. Even though the results were statistically significant, a larger sample size would clarify the impact of the interventions. Limitations of the study also resulted from poor recruitment and retention (Nam, 2013). However, the Nam (2013) study was limited amount of time and did not allow for monitoring weight over several months to verify that the lost weight was not quickly regained. Even though the results were statistically significant, a larger sample size would clarify the impact of the interventions (Nam, 2013).

Synthesis of Level IV-Grade B Article. The article also encouraged the use of social support from rural churches to motivate health behavior change to promote effective weight- loss intervention in AA women and will help to support the EBP (Nam, 2013). As found in a similar study the limitations of the study also resulted from poor recruitment and retention (Nam, 2013; Perri *et al.*, 2014).

Level V- Grade B Research. According to Dearholt and Dang (2012) this level of evidence included the opinions of individual experts based on non-research evidence. Examples included case studies, literature review, and organizational experience e.g., quality improvement and financial data; clinical expertise, or personal experience. There were two articles with this rating.

Table 2.9

Level V- Grade B Research

Author-Year	Name of Article
1. Harris (2016)	The interface between primary health care and population health: challenges and opportunities for prevention.
2. Gudzune (2012)	Primary care providers' communication with patients during weight counseling: a focus group study.

Note: Abbreviated from Appendix J

The author encouraged PCPs to improve the population risk of chronic disease by using the 5 A's framework (Harris, 2016). The article stated that practice nurses may have a key role as preventive health navigators, especially for vulnerable patients, by providing detailed information and advice about the various options available, helping patients to make choices and following up their use of programs or services (Harris, 2016). The article provided an opinion from an expert based on experiential experience.

Gudzune *et al.* (2012) randomized 415 patients from the Practice-based Opportunities for Weight Reduction (POWER) trial to one of three arms to evaluate the effectiveness of two behavioral weight loss interventions compared to usual care . PCPs from participating practices were invited to participate in a focus group if they had ≤4

patients enrolled in the study. Each focus group included between 3-8 participants and lasted approximately 60 minutes. They offered participants a $50 gift card as compensation. All focus groups were audio-recorded and transcribed verbatim. Atlas.ti 6.2 qualitative software to facilitate data management and analysis (Gudzune *et al.*, 2012). The study showed that PCPs used a variety of strategies to communicate with their patients about weight loss. Three themes emerged: motivating patients to lose weight, partnering with patients to achieve weight loss, and handling the challenges that arise as a part of weight counseling. The most commonly cited strategies to motivate weight loss included "praising and acknowledging weight loss success," and "highlighting how weight loss can improve medical co-morbidities." The study recommended that applying a single counseling technique to multiple patient behaviors may lend familiarity and efficiency to PCPs' weight loss counseling such as the 5 A's, thereby reducing barriers like lack of knowledge and counseling skills (Gudzune *et al.*, 2012).

Synthesis of Level V-Grade B Articles. The two studies provided useful information and would help in the implementation of the 5 A's with MI approach for weight loss (Gudzune *et al.*, 2012; Harris, 2016).

Synthesis of the Literature (Grade A and Grade B quality only): The data from the ET was reviewed and synthesized using the twenty-one articles found in the search strategy by Level and Grade. Eleven articles were Level I studies with five Grade A, four Grade B, and two Grade C. One article was Level II study with a Grade C and two articles were Level III studies with a Grade A and a Grade B. Out of the five articles that were Level IV studies, four were Grade A and one Grade B. The remaining two articles were Level V studies with a Grade B for both. Level II articles were not included

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in the synthesis. The synthesis of findings only included findings from evidence of Grade A and B quality.

The Level I studies provided strong compelling evidence with consistent results that the 5 A's frame-work is useful but under-utilized. The studies found that black women are disproportionally affected by the epidemic of obesity and, consequently, the risk of comorbidities associated with being obese. In previous trials, low-income black women have not been as well represented as other groups; when included, their weight loss outcomes have been suboptimal. To optimize participant recruitment and retention, the study employed several strategies designed to accommodate the busy lives of study participants, most of whom work, are socioeconomically disadvantaged, and are solely responsible for children in the household (Bennett *et al.*, 2013; Foley *et al.*, 2012).

The Level III evidence provided good evidence, with data qualitative studies to support the implementation on a weight loss program. Many of the articles referred to clinician engagement as vital in providing guidance and assistance to patients who are overweight or obese to address the underlying cause of many chronic diseases (Brown, 2012; Kushner & Ryan, 2014). Both articles, encouraged a medical history assessing the multiple determinants of obesity, including dietary and physical activity patterns, psychosocial factors, weight-gaining medications, and familial traits.

The Guidelines (2013) endorsed comprehensive lifestyle treatment by intensive intervention (Kushner & Ryan, 2014). Weight loss of 5% to 10% is the usual goal. According to Brown (2012), coaching patients within weight loss interventions (in person or remotely by email or phone) requires further specialist training in motivational interviewing and weight management. The article by Brown (2012) supported nurses and

their contributing to the social support element of weight loss interventions to improve participation and adherence. The study trial provided good applicability to clinical practice and supports multi-component interventions to help people to lose weight (Brown, 2012).

Level IV articles provided opinions of respected authorities and reports of nationally recognized experts. The four article all received Grade A ratings and provide a solid evidence for practice change (McGinnis Paul *et al.*, 2014; McGuire, 2012a; Osunlana *et al.*, 2015; U.S. Department of Health and Human Services, Released 2006 May (revised 2014)). The articles kept encouraged evidence-based weight management guidelines and more utility in primary care. The articles agreed that 5 A's weight loss has proven to be effective but under-utilized for many reasons (McGinnis Paul *et al.*, 2014; Osunlana *et al.*, 2015). The Level IV articles provided strong, compelling evidence supporting the implementation of the 5 A's program in a rural primary care practice.

Level V had two Grade B articles (Gudzune *et al.*, 2012; Harris, 2016) that provided good evidence and consistent results. According to Harris (2016), the 5As (ask, assess, advise/agree, assist and arrange) provided a framework to realize this potential, especially for disadvantaged and vulnerable populations, not only by better organizing multidisciplinary preventive interventions within primary health care, but also by linking these interventions with more intensive community and population programs and services, especially for patients with low health literacy. The article by Gudzune *et al.* (2012) also found that weight loss counseling improved by using techniques with demonstrated behavior change effectiveness such as the 5 A's or MI.

Synthesis to the evidence showed that obesity is a serious public health concern and is a major risk factor for health, social, and psychological problems. There has been a paucity of research conducted on obese AA women related to obesity in a rural setting. There is no single strategy that will effectively treat obesity but the data shows that the 5As frame-work can help women lose weight if used by trained providers. The literature stated that a lack of skills, tools, and knowledge have been repeatedly identified as barriers to identify and manage obesity in the health care setting. The goal of this EBP was to improve patient outcomes for obesity in a busy RHC. Significant health disparities existed in this socioeconomically disadvantaged population of obese AA women. Implementing the EBP project would help patients suffering with obesity in the RHC and the findings would help improve nursing practice in the future. The population was not well studied and the findings could help illuminate problems and had the potential to provide solutions through integration of the EBP.

Recommendations. To help reduce the health disparities found in serving obese AA women we would like to improve health equity by using an EBP intervention. These articles recommended the use of the 5 A's framework and MI as effective in helping AA obese women lose weight but future study outcomes of an EBP change are important to evaluate to determine whether the findings from research is similar when translated into real-world clinical practice.

1. Due to the complexity of health-related outcomes with clinical practice, this EBP was using outcomes related to weight loss in obese AA women ages 18 and older. This EBP project planned to measure weight loss and effective health outcomes over 20 weeks with measurements of weight in

kilograms, a patient's waist-circumference, as well as BMI measurement at each patient encounter.

2. The evidence summary was discussed with the Medical Director of the RHC and a pilot study was completed with informed consent.

3. The study obtained a purposive sample based on the PICOT question in the tradition of a quality improved project.

4. The project was refined during the process so that the results of the quality improvement project could be useful and meaningful.

5. The data was refined and improved to design a future research project while reducing the threats to internal and external validity and reliability.

Chapter Summary. A review and appraisal of the literature demonstrated that the Five A's (5 A's): Ask, Advise, Assess, Assist, and Arrange framework and Motivational Interviewing (MI) is effective for reducing BMI and body weight (Befort *et al.*, 2016; Campbell-Scherer *et al.*, 2014; Perri *et al.*, 2014; E. A. Sherson, , *et al.*, 2014; Wadden *et al.*, 2014). Other studies have shown similar findings with reducing BMI and weight circumference (AHRQ, 2016; Osunlana *et al.*, 2015). The strength of the evidence was graded and the synthesis of the finding only included Grade A and Grade B. The findings encouraged using the 5 A's framework and MI for health behavior change counseling (AHRQ, 2016; Campbell-Scherer *et al.*, 2014; Chronic Disease Node Group and Chen Zhili, 2014; Kushner & Ryan, 2014; Wadden *et al.*, 2014).

Therefore, delivering the 5 A's and MI through measurement of BMI; dietary assessment; intensive behavior counseling and behavior therapy to promote sustained weight loss through high intensity interventions on diet and exercise was the intervention used for obesity management in the RHC.

Chapter III

Methods

The process of the quality improvement project was described for assisting disparate obese women lose weight using the Five A's method of counseling and intervention. The evidence from the literature review and the internal evidence from clinical practice showed that the unmet need for EBPs to improve health outcomes for obese patients in rural areas continues to be a major problem. The comorbidities related to obesity exacerbate this need.

According to Melnyk-Mazurek & Fineout-Overholt (2015), quality improvement (QI) is a process by which individuals work together to improve systems and processes with the intent to improve outcomes. QI requires that practices continually assess performance, plan changes in areas where improvements are warranted, monitor the effects of those changes, and refine as needed. However, QI projects cannot control for the many possible threats to validity, thus leading to potential difficulty interpreting the results. Moreover, QI helps clinicians translate the evidence into clinical practice and integrates it with internal evidence to improve the quality of healthcare and patient outcomes (Melnyk-Mazurek & Fineout-Overholt, 2015). The purpose of this chapter was to outline the methodology used in implementing the QI DNP project.

Design. This QI project used a one group pretest post-test design with the individual patient data to examine differences pre-and post-test intervention as the unit of

analysis. In this pretest-post-test design, there was only one group and all participants were exposed to the intervention.

Sample. Inclusion criteria for this project included AA females over the age of 18 with a BMI >30 who consented to participate. Exclusion criteria for this project included participants that were pregnant or intended to become pregnant during the trial period. Participants were also excluded if within the past 3 months they participated in a weight management program (including pharmacotherapy or bariatric surgery). In addition, participants were excluded if they were unable to understand and speak English sufficiently to give informed consent and complete the research assessments; and those that had mental disorder and/or cognitive impairment.

Setting. The project was implemented at a RHC in the South-East Sea Island area of South Carolina. The patient population of the RHC was composed of the working poor. According to the Bureau of Labor Statistics (2016) , the working poor were people who spend 27 weeks or more in a year "in the labor force" either working or looking for work but whose incomes fall below the poverty level. According to the UC Davis Center of Poverty Research (2013) data, the working poor earned less than $347.82 a week. The demographics profile of patients served by the RHC over the past fifteen years has been 40% Black, 35% Hispanic and 25% White. The RHC was open seven days a week providing primary and/or urgent care services to the local community. There was also an on-call service in place that goes directly to the provider's cell phone. If patients needed assistance after hours, remediation was available to preclude an emergency room visit. In addition, the NP met patients at the clinic outside of the normal hours for patient care needs.

Due to limited resources and lack of transportation, patients often failed to keep appointments; therefore, 85% of patients were considered "walk-ins." Thus, the RHC had extended weekend and evening hours. The RHC clinic has been part of the rural community for over ten years and owned and operated by a bi-lingual family nurse practitioner with two staff members. The demographics of the clinic were 40% children and 60% adults with Medicare and Medicaid health insurance. There was also an electronic medical record system that had been in place five years prior to the introduction of the QI project.

Outcomes to be Measured. The aim of the project was to promote weight loss among rural disparate obese women that was self-sustaining.   In the QI project the variables of weight, waist circumference, and BMI were measured pre-and post-intervention.

Framework. The framework was developed by Guyatt (1992) and known as the 5 A's : Ask, Acquire, Appraise, Apply, and Assess (Appendix C). Motivational Interviewing (MI) provided an evidence-based treatment that addressed ambivalence to change (Schlair, Moore, McMacken, & Jay, 2012). Using 5 A's and MI together helped obese AA women work towards enhanced weight loss.

The video below illustrated the process of "change talk" used in MI. The link to the video for MI included the skills necessary to better understand how to use open-ended questions: Retrieved from https://www.youtube.com/watch?v=s3MCJZ7OGRk
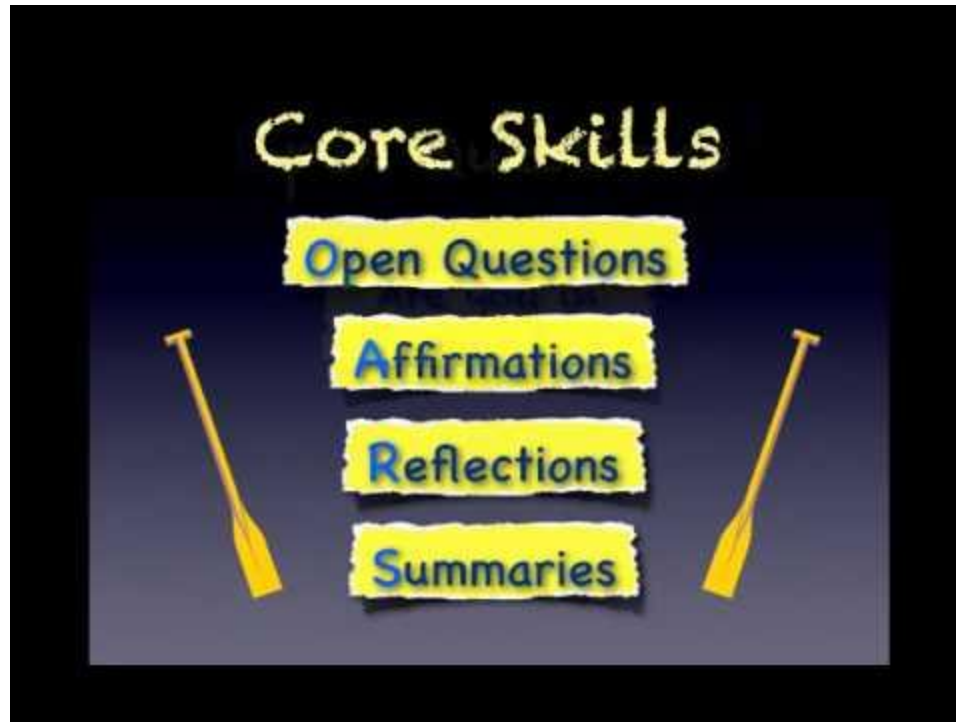
Figure 3.1

Description of Intervention

The interventions used in this study were 5 A's and MI.

The 5 A's were as follows:

1. Assess: To ask about or assessing behavioral health risk and factors affecting choice of behavior change goals or methods.

2. Advise: To give clear, specific, and personalized behavior change advise, including information about personal health harms and benefits.

3. Agree: To collaborate in selecting appropriate treatment goals and methods based on the beneficiary's interest in and willingness to change behavior.

4. Assist: To use behavior change techniques (self-help and/or counseling), aiding the beneficiary in achieving agreed-upon goals by acquiring the

skills, confidence, and social and environmental supports for behavior change, supplemented with adjunctive medical treatments when appropriate.

5. Arrange: To schedule follow-up contacts (in person or by telephone) to provide ongoing assistance or support and adjusting the treatment plan as needed, including referral to more intensive or specialized treatment.

The 5 A's framework intervention was augmented by using MI. The core skills of MI were opened ended questions; affirmation; reflections; and summary. According to Schlair *et al.* (2012), although patients wanted to lose weight, they were ambivalent about change or lack confidence. The processes involved in MI promoted positive behavior change through "change talk." Using the 5 A's and MI intervention in the QI project provided a patient-centered method for enhancing intrinsic motivation to change by exploring and resolving ambivalence.

Barriers and Support. There were several barriers that were identified in the QI project. One of the biggest barriers was lack of time to implement the intervention. It was difficult to make the obesity discussion a priority while treating co-exiting acute and chronic illnesses, especially when patients do not seek care on a regular basis. Even though chronic illness maybe due to obesity and because of the lack of access to primary care services, complications related to chronic illness were often first treated. In addition, patients often came into the clinic as "walk-ins" because they did not have consistent transportation. Time to implement the QI project became stressful for both provider and patient when the provider needed to address all other issues. Nevertheless, as a solo

provider, extra time was made with each patient encounter to address the multiple facets of obesity and weight loss management for this QI project.

Socioeconomic factors made it very difficult for many patients at the RHC to afford fresh fruits and vegetables to maintain a healthy sustainable diet. The typical patient's low income status was another barrier for this QI project. Most patients coming into the clinic lived below the poverty line. In 2016, 70% of the patients served were on Medicaid and/or Medicare at the RHC. Although barriers exist, Medves *et al.* (2010) believed that practice guidelines were those documents that present the best evidence for a given protocol of treatment or care. In addition, using guidelines to inform practice improved the effectiveness and efficiency of healthcare while reducing inappropriate variations in practice (Medves *et al.*, 2010). According to Grant, Stuhlmacher, & Bonte-Eley (2012), the two highest ranking barriers were lack of authority to change procedures and lack of available time to implement new ideas. Creating a work culture that included effective teamwork was essential to increase the likelihood of positive results in knowledge, practice, outcomes, and sustainability, of guidelines for screening obesity in AA women.

Important elements to ensure sustainability of guideline implementation included: ongoing and supportive leadership, management support, continuing education, an organizational culture supportive of evidence-informed practice, and integration of guideline recommendations into organizational policies and procedures (Davies, 2006). The NP in the RHC was the leader to implement the EBP and performed the 5 A's intervention for this QI project with help from the support staff.

For teamwork to be effective, common understandings of patient care needed to be established so that patients received consistent, evidence based information and practice (Medves *et al.*, 2010). Continuous QI required reassessing and tailoring national guidelines to the clinical practice. Feedback from all staff members was used to individualize the effectiveness of the guideline. Keys to accomplishing a successful vision included preparation and planning (Melnyk-Mazurek & Fineout-Overholt, 2015). According to Sharp, Pineros, Hsu, Starks, & Sales (2004), planning the intervention activities was one of the most difficult areas in the implementation process.

Since the provider and staff members lived and worked in the community, the 5 A's framework was not only suitable for primary care, but an appropriate fit to improve population health outcomes (Fitzpatrick *et al.*, 2016; Goldberg, Feng, & Kuzel, 2016b). Staff involvement was paramount in promoting staff buy-in for sustaining guidelines. With input from the staff at the monthly clinic meeting, evaluation and changes to the implementation of the 5 A's framework would also be vetted. The QI study adopted open access scheduling to improve patient outcomes. Since many patients lacked reliable transportation, telephone calls were used to remind and provide MI counseling if needed. Therefore, both staff and the clinic patient population benefited from the QI project using 5 A's and MI.

In conclusion, every effort was made to integrate this QI project into the current work-flow. Barriers were minimized using the 5 A's framework and MI for health behavior change counseling. Encouraging change behavior with positive feed-back at the visit and with telephone follow-up was used to help a patient move past the ambivalence stage. A minimum of three attempts to contact participants, were attempted before they

were dis-enrolled from the project. Multiple means of contact were tried to implement the intervention. Staff worked diligently to incorporate the QI project. They helped patients realize that this partnership was vital. If the participants failed to keep appointments, the date and time were documented in the chart.

Feasibility. There were several feasibility factors for the EBP:

1. RHC readiness for change- For example, the need for obesity treatment that was based on the most recent evidence was clear to the staff at the RHC.

2. Availability of subjects. Most the adult patients at RHC had obesity as a diagnosis.

3. Accessibility to the setting and time to conduct the project. The researcher was a full-time employee at RHC. She had accessibility to the facility as well as time to devote to data collection and implementation of the project.

4. Supportive stakeholders (the medical director, NP, MA, pharmacist, the office manager).   The stakeholders at RHC were supportive of the project.

5. The researcher had a supportive and knowledgeable DNP project committee to guide her as she planned and implemented the EBP process.

6. There was minimal financial burden involved in the implementation of the project. The researcher had allocated personal funds to be used for the evidence-based project. The estimated out of pocket costs for the project was $500. This did not include any allowance for time spent by NP.

7. Availability of equipment. Automatic weight scale, measuring tape, and wall ruler were the measurement devices that were available at RHC to perform the project.

There were also potential barriers to the feasibility of the evidence-based project, such as:

1. RHC used both paper medical records and the EMR. The use of paper medical records at the facility greatly impacted the ability to retrieve data in a timely fashion. There were also patient legibility issues as well as missing information on forms. However, the EMR helped to calculate the BMI.

2. Potential for equipment malfunctioning. The equipment was checked and calibrated prior to initiation of the project. There was a 24-hour on-call service for the digital weight scale if it malfunctioned.

3. Potential for skill deficit of the MA in performing accurate weight and height measure as well as weight circumference measurement. The MA received annual training to assess for competency. The researcher verified with the education and training department that the staff was up to date with their annual competency training prior to the start of the project.

4. Time burden for nurse practitioner. The NP used the YouTube video for an informal education session. The NP shared the MI video in a training session with staff members during lunch.

Instruments. Data collection points pre-and post-intervention were weight, BMI, and waist circumference. Tools used to collect data to ensure consistency across patients were weight scale, measuring tape, and a ruler affixed to the wall to measure height.

Procedure. All patients completed a clinic sheet (see Appendix D). The baseline visit is considered visit 1 and the MA identifies potential participants that met the criteria. Study participants were ages 18 and older and obese AA female with of BMI> 30. Data collected by the MA during this initial visit, and the Weight Loss Form were added to the

chart (see Appendix E). The MA explained the 5 A's intervention and asked patients to participate in the 5As and MI program for weight loss.

Active Participants

After the patient, verbally consented, the MA recorded the weight and height to calculate BMI and documented the pre-test weight using the Weight Loss Form. The MA documented the patient's personal "goal weight" and measured waist circumference (see Appendix G). Blood pressure was assessed in Exam Room 1 where the NP continued the office visit.

The NP continued with assessment using the Weight Loss Form. Using MI and the 5 A's framework, NP encouraged the patients to limit calories till the next appointment. Patients were asked to commit to a 1000-1200- or 1500 low calorie diet. In addition, the discussion included the risks of Obesity; problems associated with high BMI and waist circumference using a picture guide (see Appendix F). Exercise was encouraged and evaluated based on frequency. Reasons for not participating in the 5 A's program or another weight loss program were also being documented.

Suggestions were documented for the next week. The patient decided on one priority item to focus on that would be re-assessed at the following visit. MI incorporated a conversational approach, and opened ended questions. Examples included: How ready do you feel to change your eating patterns and/or lifestyle behaviors? How would you like your health to be different? What obstacles stand in your way that prevent you from starting? What would have to happen before you seriously consider making the change? How can I help you succeed?

After enrollment, visit 2 was considered the follow-up appointment after 1 week. Again, the Medical Weight Loss Form to weigh the patient and chart if patient gained or lost weight was used (see Appendix E). Pregnancy status was also updated to ensure weight was valid. The 5 A's and MI were documented and another weekly priority was made with patient which was documented in the chart. The 5 A's project followed the CMS guidelines for obesity management: one face-to face visit every week for the first month; one face- to face visit every other week for months 2-6; and one face-to face visit every month for months 7-12. If the Medicare beneficiary meets the 3kg (6.6pounds) weight loss requirement during the first 6 months, they can continue the obesity management program through months 7-12. For this QI project, outcomes were measured at 2 months. The CMS guidelines will be continued to be followed at the clinic.

In summary, every visit included vital signs, measuring weight and waist circumference, and calculating BMI documented in the weight loss clinic form (see Appendix E). Each visit included calculation of weight loss or gain.

Data Analysis. The pre-and post-data analysis included BMI, body weight, and waist circumference to determine if the EBP was successful in improving patient outcomes. The mean differences for changes in weight and BMI were calculated for the two months following the intervention.

IRB. After approval from USC IRB as an exempt project for data collection, the author identified 35 patients that met the inclusion criteria for pre-and post-implementation phase. The participants' charts were audited. There were a total of 35 charts pre-intervention and the same 35 charts post-intervention (35 patients from the RHC). The inclusion criteria were: adult female AA patients age 18 and older were seen

for any non- episodic or acute illness visit within the RHC between November 2016 and December 2016. Protected health information was not collected and only the patient's age, race, and gender was collected. No other personal identifiers were collected that could link the data sheet to the patient except during data collection to match charts pre- and post-intervention. For example, data sheet was labeled Number 1A and its corresponding post intervention match was labeled Number 1B. Once data was collected on the patients, all identifiers were removed and charts were matched as 1A to 1B and so on for statistical analyses.

All data collected was stored in a secure and encrypted flash drive that was password protected and known by the author only. The data was placed into a Microsoft Excel spreadsheet, which was stored in a secure and encrypted flash drive. This procedure was used for pre-implementation data collection and post-implementation data collection.

According to the Code of Federal Regulations (US Department of Health Human Services, 2007) research is defined in 45 CFR 46.102(d) and 45 CFR 164.501 as "a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge." Quality improvement (QI) in health care, unlike research, focuses on translating existing knowledge from research into clinical practice to improve the quality of health care for individuals and populations.

The key difference between these two concepts is that research studies are intended to create new knowledge that can be generalizable to other populations and settings, while QI in health care uses existing knowledge to improve health care

outcomes within a local health care institution or setting. QI activities provide important information on the application of existing knowledge and changes that may be needed to achieve the best possible clinical outcomes (see Appendix H). For this QI project, any activity involving human subjects conducted by USC faculty, staff, and students must be reviewed and approved for compliance with regulatory and ethical requirements before it may be undertaken (University of South Carolina IRB, 2016).

Federal Policy for the Protection of Human Subjects also known as "Common Rule" (45 CFR 46 subpart A) defines a set of research activities that may be exempt from its purview, unless otherwise required by Department or Agency heads. Exempt research has very little, if any, associated risk. These research activities, as defined by 45 CFR 46.101(b), include six exempt categories:

1. Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

2. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:

a) Information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and

b) Any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

3. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph (b)(2) of this section, if:

    a) The human subjects are elected or appointed public officials or candidates for public office; or

    b) Federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.

4. Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

5. Research and demonstration projects which are conducted by or subject to the approval of Department or Agency heads, and which are designed to study, evaluate, or otherwise examine:

    a) Public benefit or service programs;

    b) Procedures for obtaining benefits or services under those programs;

    c) Possible changes in or alternatives to those programs or procedures; or

d) Possible changes in methods or levels of payment for benefits or services under those programs.

6. Taste and food quality evaluation and consumer acceptance studies,

a) If wholesome foods without additives are consumed or

b) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.

Although this QI project was exempt from IRB review because it was a unit specific project, it was not exempt from the ethical principles pertaining to human subject research and responsible research practices (see Appendix H). Good research design dictated careful consideration of risks/benefits, protections, and consent, even if review by the convened IRB does not occur. Moreover, the research design needed to meet applicable research ethics standards of the investigator's professional association or society. In all cases, the standards of respect for persons, beneficence, and justice enumerated by the Ethical Principles and Guidelines for the Protection of Human Subjects of Research (the Belmont Report) apply to research involving human subjects, whether reviewed or certified as exempt (see Appendix I).

Summary. The QI project was an iterative quality improvement process that assisted AA obese women lose weight in a rural health practice. Given the literature review, the EBP of 5 A's and MI intervention would help patients improve their health outcomes.

Chapter IV

Results

The purpose of the chapter was to present the findings of the quality improvement project.   The pre-and post-data analyses included BMI, body weight, and waist circumference to determine if the EBP was successful in improving patient outcomes. The mean difference for changes in weight and BMI were calculated before and after 2 months following the intervention. The PICO question for this analysis was as follows: For obese adult AA women age 18 and older who present for primary care in the RHC **(P)**, how does the 5 A's program **(I)** compare to current practice **(C)** in promoting weight loss by measuring a 5% reduction in baseline BMI, body weight, and Waist Circumference **(O)** over an 8-week period **(T)**?

Sample. Descriptive statistics and the SAS 9.4 program were used to analyze the data. All 35 participants were AA women. The average age of participants was 47 years with standard deviation (SD) of 14.73. The youngest participant was 18 years old and the oldest participant was 73 years. The mean height was 64.43 inches with a SD of 3.45 inches. The minimum height for participants was 59 inches and the maximum 74 inches. Table 11 presents an overview of the three variables of interest in the quality improvement project: weight, waist circumference and BMI (Table 4.1).

Table 4.1

Demographic variables using means and standard deviations

Variable	N	Mean	SD	Minimum	Maximum
Age	35	47.00	14.73	18.00	73.00
Height	35	64.43	3.45	59.00	74.00
Weight1(Baseline)	35	229.25	53.58	146.80	404.00
Weight2	30	220.30	54.04	145.00	404.00
Weight3	23	221.29	61.46	142.00	400.40
Weight4	11	226.62	78.96	141.60	397.80
Weight5	9	234.31	84.43	144.00	398.00
Weight6	7	254.91	81.96	162.20	393.00
Weight at 8 weeks	35	227.18	53.05	144.00	393.00
WaistC1	35	45.90	5.05	36.00	60.50
(Baseline)	30	45.05	5.87	34.50	60.50
WaistC2	23	44.78	5.88	34.00	55.50
WaistC3	11	44.86	7.54	35.00	56.50
WaistC4	9	45.78	7.90	34.00	56.50
WaistC5	7	47.07	7.34	35.00	55.00
WaistC6	35	45.04	5.38	33.50	55.00
Waist at 8 weeks	35	38.63	7.21	24.72	61.42
BMI1 (Baseline)	30	37.61	7.62	24.14	61.42
BMI2	23	37.67	8.26	24.54	60.87
BMI3	11	37.19	9.73	27.12	60.48
BMI4	9	37.83	10.53	27.22	60.51
BMI5	7	40.08	10.61	26.99	59.75
BMI6	35	38.29	7.24	24.54	59.75
BMI at 8 weeks					

The weight of the participants was measured 6 times for a period of 8 weeks. Baseline weight was 229.25 pounds with a SD of 53.58 and a minimum of 146.80 pounds and a maximum of 404.0 pounds. Although the weight was measured six times over a two-month period the sample size changed because some participant visits varied during the 8 weeks. Therefore, only the beginning and ending weights were used in the data analysis. The mean weight at 8 weeks (post) was 227.18 with a SD of 53.05 pounds. The minimum weight for participants was 144 pounds and the maximum was 393.00 pounds.

The highest waist measurement circumference was 47.07 inches in week 6 but the sample size varied because not all participants were measured six times. The mean waist circumference at 8 weeks (post) was 47.04 inches with a SD of 5.38 inches. The minimum was the mean waist measurement was 33.50 inches and the maximum was 55 inches.

Baseline BMI was 38.63 with a SD of 7.21 and the minimum was 24.72 and the maximum was 61.45. The maximum BMI was 40.06 at week 6 but there was a variance in sample size. The mean BMI at 8 weeks (post) was 38.29 with a SD of 7.24 and a minimum of 24.54 and a maximum of 59.75.

Analysis of PICO Question. Data was analyzed using parametric and non-parametric testing. The mean difference in the parametric Matched T-test showed a weight loss of 2.07 pounds. Using the Matched paired one-tail T-test, results also showed a decrease in weight (2.07 pounds), waist (0.86 inches) and BMI (.34) over an 8-week period. The results of Matched T-test indicated significant reductions in weight (p =.0011), waist inches (p =.0497), and BMI (p=.0010). The nonparametric test Signed Rank test showed similar significant results (p-value <.0001). The nonparametric test showed similar significant results for weight (p=.0005), waist (p=.0255), and BMI (p=.0090).

The 5 A's and MI demonstrated benefit in helping patients lose weight in a RHC. The 35 participants did lose 2.07 pounds of weight from baseline but not the 5% from baseline weight. The waist circumference showed a 0.86 difference but not 5% from baseline. The BMI also showed a decrease (.34) but not the 5% reduction from baseline as hoped over an 8-week period.

Table 4.2 showed the data analysis of parametric and non-parametric test.

Table 4.2

Data analysis of parametric (Matched – T-Test) and non-parametric (Sign Ranked test)

| Variables | Mean difference | DF | Matched T-test | | Signed Ranked test |
			t Value	pr > |t|	p-value
Weight	-2.07	34	-3.31	0.0011	.0005
Waist	-0.86	34	-1.69	0.0497	.0255
BMI	-0.34	34	-3.35	0.0010	.0090

Note: One-tail test

      Chapter Summary. To summarize, the quality improvement study included 35 participants, ranging in ages from 18-73, who received the 5 A's with MI intervention over an 8-week period. The sample included 35 AA obese women that presented to the clinic for primary care. Findings showed a weight loss of 2. 07 pounds over the 8 weeks' period. Participants lost 0.86 inches on average and reduced their BMI by 0.34. However, results did not demonstrate a 5% reduction from baseline BMI, weight, or waist inches. Findings were statistically significant for changes though.

Chapter V

Discussion

Chapter V was a discussion of the quality improvement (QI) project and included the participants' reactions to the interventions, the confounding factors that limited the success of the QI project, and recommendation for future studies. The participants in the rural health clinic benefited from the interventions. The results were statistically significant. However, some of the challenges the QI project encountered were timing and exercise. The project was conducted during the two months during Thanksgiving and Christmas, which limited participants' ability to participate**.**

Reaction of Study Participants at the RHC. Subjects encountered difficulties keeping follow-up appointments due to the timing of the project and transportation. Participants expressed stress during the holiday times because of finances or family separation.   However, the participants welcomed a program that assisted them to lose weight and acquire knowledge regarding food choices. Reading food labels and scrutinizing portion sizes were difficult at the onset of the project. Many of the patients admitted to ignoring nutrition labels but as they became more aware with office visit, they transitioned to choosing low fat foods and fat-free substitutes. As an example, patients chose yogurt instead of ice cream.

In addition to choosing better food items, exercise was also promoted at each office visit as part of the weight loss program. However, women were afraid to exercise outdoors due to unleashed dogs in their neighborhood. Other safer options were

discussed such as walking outside the schools, parks, or at the malls. Because of holiday festivities, subjects said it was difficult to keep an exercise routine. Along with the exercise, participants responded to encouragement to drink more water to rehydrate instead of Gatorade and sugary drinks.

The participants anecdotally expressed that they felt empowered to improve their health by making weekly changes in both diet and exercise. Using the evidence from the literature review, the QI project incorporated the Assist and Arrange aspects of the 5 A's protocol to promote weight loss, which are often neglected. The RHC created a winning banner for the participants, and each participant was celebrated with recognition for each pound lost. The participants enjoyed the continued support and follow-up care received adding momentum to their goal for weight loss.

Using MI to develop and encourage mutually agreed goals provided a pathway for success. The frequent follow-up visits allowed participants to overcome past obstacles. By working together in partnership, participants identified the stressors from past failures and created strategies with more positive habits.

Strategies for Weight Loss. During the 5 A's and MI weight loss program, participants were individually taught to read and critique food labels, explain the serving sizes, and cite associated calories. Participants practiced this activity weekly; and over the 8-week time frame, participants increased their knowledge and skill at reading labels. They expressed to the investigator the benefits of making a conscious effort to eliminate bad choices. The subjects reported that their children were learning as well. Participants admitted that they did not realize that reducing fat content in the different food choices would help them reduce their caloric intake by 50 %. This insight encouraged

participants to reduce their fatty foods quickly. Thus, the participants increased their intake of other food groups rich in carbohydrates and protein. Finding substitutes for high fat meals became easier for obese AA patients with this new-found knowledge.

Over the 8- week study period, obese AA women lost inches from their waist as well by using a tape measure to track their progress. Patients found the tape waist measurement user-friendly, and participants were quick to measure their spouses and children at home. Some subjects reported although family members were not included in the study, they also benefited from the weight loss program.

Limitations to Success. One of the biggest limitations to the study was the inability to exercise safely and consistently. Participants found it difficult to exercise in their rural communities due to the lack of sidewalks or safe zones. Since the study period was conducted over the winter months, the cold weather made it difficult to walk outside. The holidays festivities made it difficult to create a routine. Since school children were on holiday break, the stress of childcare made it difficult for the participants to exercise daily.

Transportation was a major issue for many of the participants. Participants reported that they did not have their own transportation and, as a result, missed several appointments. Unfortunately, the rural community lacks access to public transportation. Some participants asked neighbors or friends to bring them to the appointments. Study participants were reminded of follow- up appointments by voice mail and text messaging. However, often phones were disconnected from service because participants lacked funds to pay their monthly phone-bills.

One of the participants presented with a positive pregnancy test at one of her visits. Although she was removed from the program, she failed to keep her appointments with prenatal clinic due to lack of transportation. She was encouraged to call the Medicaid van for her prenatal appointments. Unfortunately, due to barriers of child care (six other children) and no transportation, the practice filled the gap for prenatal care until other arrangements were made. Despite the limitations found in QI project, the 5 A's and MI program did provide an evidence based weight loss program to improve health outcomes for the participants, their families and the community.

Future Recommendations for the RHC. Timing was critical to improving the future success of this QI project. The QI project may have been more successful if it was timed outside the holiday season. Changing the time of QI project would help the participants improve and maintain a healthy diet and exercise routinely without the added stressors of child care and holiday celebrations.

Removing barriers to transportation would also help participants keep the appointments needed to help participants with continued weight loss success. Participants had difficulty keeping the pre-scheduled appointments because they lacked their own transportation and had to depend on neighbors and friends. Helping participants sign up with the Medicaid Van to help schedule appointments with a 3-day notice should also be explored. Encouraging participants to add reminders to their phone calendars should be explored in future studies.

Having the weight loss program in a different setting could make it easier to accommodate the participants and help eliminate some of the transportation difficulties found in this QI project. For example, using a church and encouraging a group weight

loss program could eliminate the burden in transportation. If a group study was done, participants could benefit from a ride-share and/or car-pool to improve successive follow-up appointments as well as promote community outreach.

Nevertheless, the 5 A's and MI weight loss program allowed EBPs to improve health outcomes one participant at a time. It provided a catalyst for new ideas for future study to help our community improve its health outcomes related to obesity. Losing weight in this QI project has made a big difference to its participants. Surprisingly, the 5 A's and MI program has helped family members and created a community wide movement encouraging others to also improve their health.

Conclusion. Using the 5 A's and MI program made a positive impact for the participants of the project. Although the findings were statistically significant and the subjects did lose weight, waist inches, and BMI, there was not a 5% reduction from baseline. Prior to this project, it was not routine practice to check waist measurement but is now routinely incorporated with every visit. The 5 A's and MI program has reinforced the author's awareness of the severity of barriers that patients face for routine care to include poverty and a lack of transportation, child care, and education. These social determinants impact health. To disseminate this EBP for future studies, the poster presentation will be included in the South Carolina Nursing Association conference in the Fall, 2017 (Abstract K).

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Wadden, T. A., Butryn, M. L., Hong, P. S., & Tsai, A. G. (2014). Behavioral treatment of

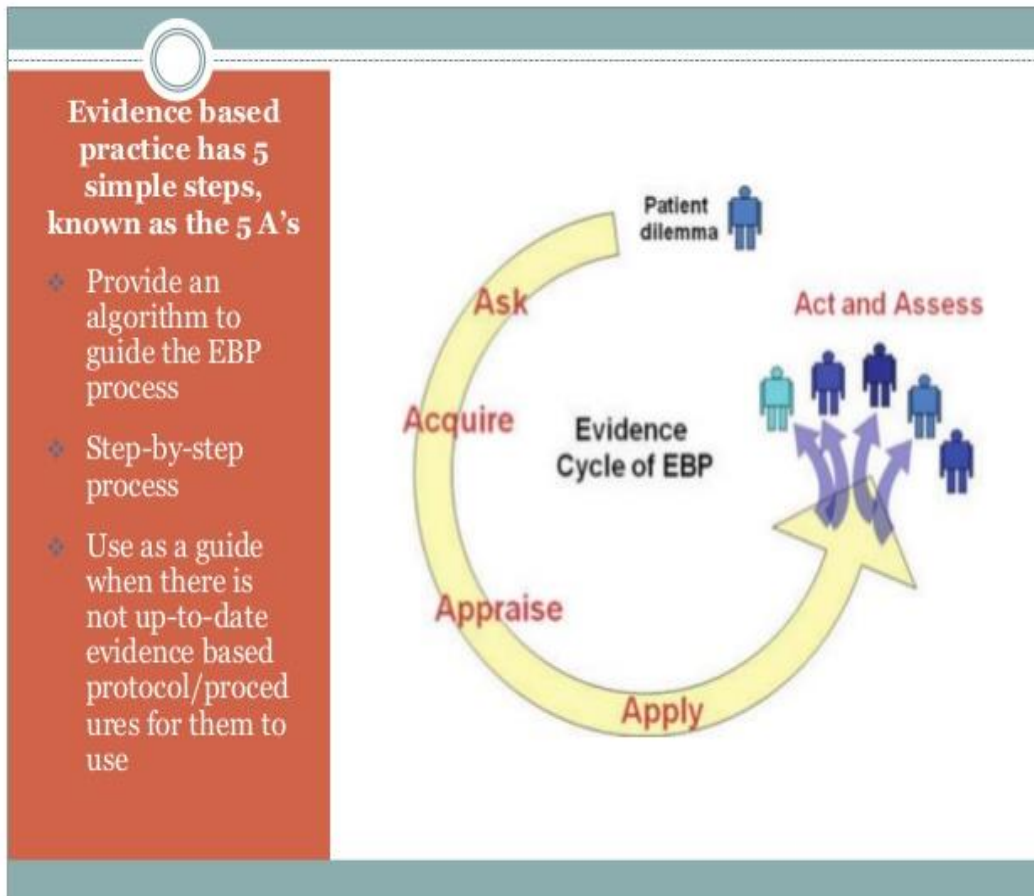obesity in patients encountered in primary care settings: A systematic review.

Jama, 312(17), 1779-1791. doi:10.1001/jama.2014.14173

Appendix A: Motivational Interviewing Adds Up

Note: Retrieved from http://www.healthsciences.org/Infographic-Motivational-Interviewing-Adds-Up
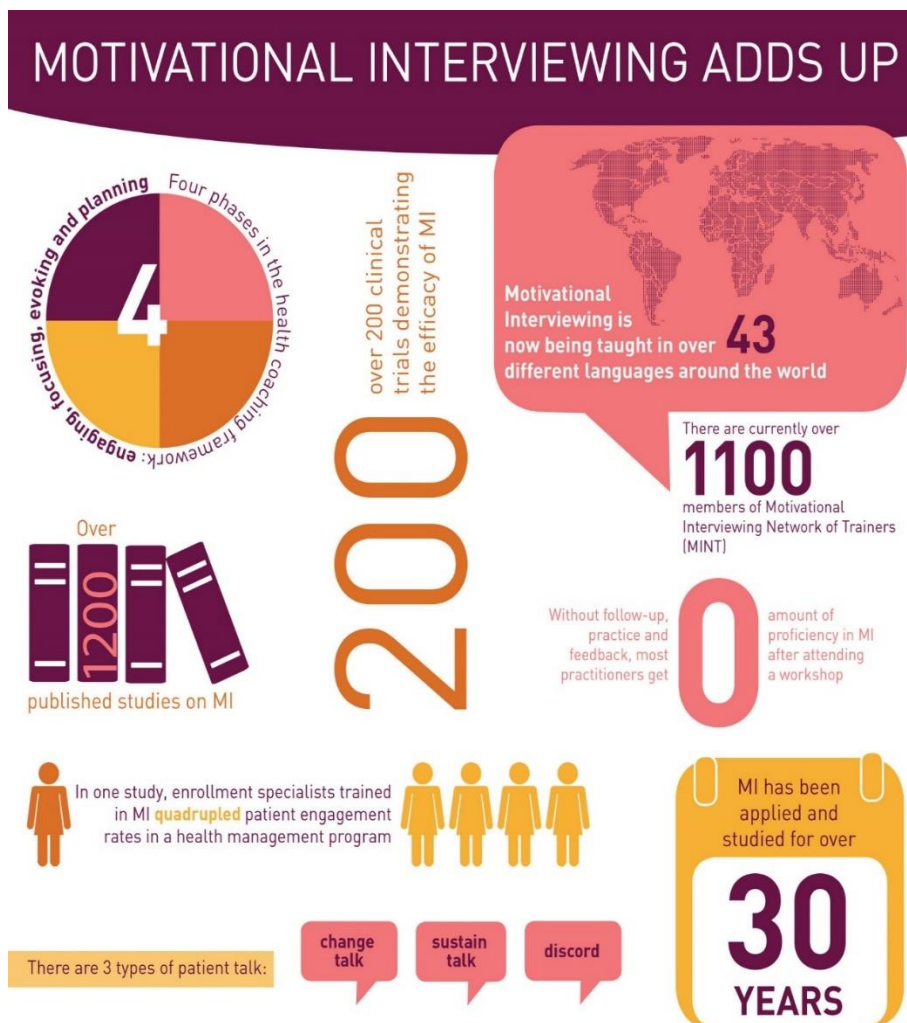
Appendix B: Evidence based practice has 5 simple steps, known as the 5 A's

Appendix C: Time-Efficient 5A's (in 1 visit)

Table 2. Time-Efficient 5As (in 1 visit)

ASSESS – 5 minutes: Ask patient about weight management, diet, exercise, history of weight loss, stage of change and interest/confidence

ADVISE – 3 minutes: Provide clear, strong advice to lose weight with personalized messages about the impact of obesity on health

AGREE/ASSIST – 5 minutes: Negotiate 1–3 mutual goals and address barriers, suggest treatments, provide and discuss social support in weight loss plan

ARRANGE – 2 minutes: Make referrals, arrange frequent follow-up

Note: Retrieved from http://www.jcomjournal.com/how-to-deliver-high-quality-obesity-counseling-in-primary-care-using-the-5as-framework/

Appendix D: Consent for treatment clinic form

ANGEL OAK FAMILY MEDICINE

1816 BOHICKET RD. SUITE F; JOHNS ISLAND, SC 29457

PHONE: 843-559-1938 FAX: 843-557-1998

Patient Registration

Last Name: _____ First Name: _____ MI: _____

Phone#_____ Email: _____

Patient DOB: _____ Patient's SSN: _____

Address: _____

Please read the attachment: **HIPAA Notice of Privacy Practices and Consent of Treatment**

Please sign to confirm your authorization to ***disclose your protected health information*** in accordance with the new HIPAA regulations. This will also include ***your consent for treatment.***

X_____ Date: _____

Emergency Contact:

Name: _____ Phone: _____

Medical Weight Loss Progress Note

Name_____   Date_____

Weight_____   Blood

Pressure_____

Pounds Lost/Gained_____

     BMI_____

Waist Circumference_____   GOAL

WEIGHT_____

Diet Plan Daily calorie intake: 1000 cal   1200 cal   1500 cal

Physical Activity / Exercise Plan-Frequency-per week

▢ Gym   ▢   Walking   ▢   Aerobics   ▢   Swimming

Unable to exercise for medical reason (joint pain, chest pain, etc.) Please list reason:

Behavior Modification

(*Lifestyle changes*) *to include discussions of proper eating habits, healthful snacking, etc.*

Please indicate items discussed

▢ Discussed dietary intake and gave suggestions   #1 priority this

▢ Discussed exercise routine and gave suggestions

▢ Discussed psychological changes and gave suggestions

▢ Portion size reduction	▢ Eliminate snacking between meals
▢ Reduce consumption of dietary fat	▢ Chew food slowly
▢ Increase water intake	▢ Use of healthy cooking techniques (i.e. – baked/ grilled versus fried)
▢ Reduce consumption of alcohol, soda, caffeine, and/or juice	▢ Reduce intake of red meat
▢ Minimize or eliminate eating fast-foods	▢ Other

Provider Signature_____   Pt. Sign_____

Appendix F: Obesity: causes and risks

Obesity: causes and risks

An abnormal or excessive accumulation of body fat that to a degree that threatens health

Measured by the Body Mass Index

$$BMI = \frac{Weight\ (kg)}{Height\ (m)^2}$$

<18.5:	Underweight
18.5 to 24.9:	Normal weight
25 to 29.9:	Preobese
30 to 34.9:	Obese class I
35 to 39.9:	Obese class II
More than 40:	Obese class III

Example
Weight = 90 kg,
Height = 1.65 m

$$BMI = \frac{90}{(1.65 \times 1.65)} = 33.05\ kg/m^2$$

*33.05kg/m² Obese class I

Source: WHO

The causes
■ Heredity
■ Psychological troubles
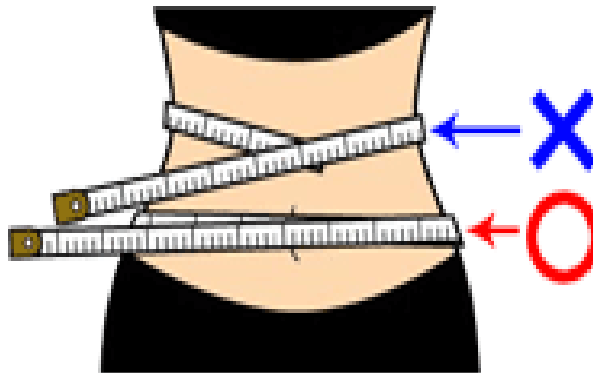■ Sedentary lifestyle
■ Fat- and sugar-rich diet

The risks
Arterial hypertension, diabetes, sleep apnea, heart and breathing problems, arthritis, gall bladder problems, spinal damage, some cancers, premature death

Note: Retrieved from http://www.diseaseclick.com/obesity-causes-and-risks.html
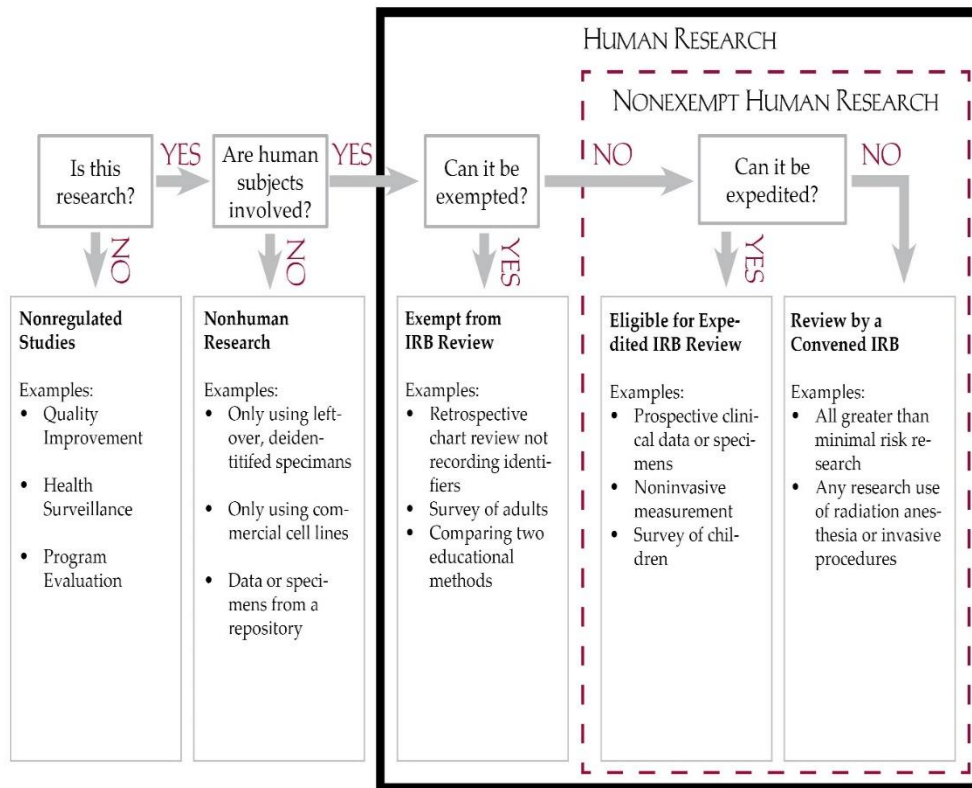
Appendix G: Weight circumference

Important points
- Waist circumference is NOT measure around the narrowest part of the waist.
- Measure horizontally around the waist at the level of the navel. Do not compress the skin with the tape.

Note: Retrieved from

https://www.otsuka.co.jp/en/health_illness/metabolic/04_03.html

Appendix H: Research Design Figure

RESEARCH DESIGN FIGURE

Note: Research Study and Guide for Exemption

Retrieved from *http://www.rvu.edu/about/compliance/research-*

compliance/additional-resources/#1472658555492-882bcaa1-625e

Appendix I: University of Miami- Humans Subjects Research Basic Course

THE UNIVERSITY OF MIAMI LEONARD M. MILLER SCHOOL OF

MEDICINE

Certifies that

Jacqueline Baer, MSN, APRN, FNP-BC
has participated in the educational activity titled:
Human Subjects Research Basic
Course on 03/12/2016 and is awarded **4**
Contact Hours

This continuing nursing education activity was approved by the Georgia Nurses Association, an accredited approver by the American Nurses Credentialing Center's COA.

GNA # 31904

Oscar Reyes
Director of Continuing Medical Education

1500 NW 12th Avenue

PO Box 016960

Miami, FL 33136-1038

Appendix J: Evidence table

Evidence table: How does the 5A's program compare to usual practice in promoting weight loss over a 20-week period for obese adult African American women ages 18 and older in a rural health clinic (RHC)?

Brief Citation	Strength, Quality of Evidence	Research Design Methods	Threats to Validity(V)/ Reliability(R)	Findings	Conclusions
1) (Chronic Disease Node Group - Updated by: Chronic Disease Node & Chen, 2014a). Motivational interviewing: Overweight and obesity. Retrieved from: http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=jbi&AN=JBI8763	Level I- Grade A	Systematic review- 12 RCTs included in weight loss interventions.	(V)Follow-up period of less than 3 months increased risk of counseling failure. (R) Unknown number of patients studied.	Motivational interviewing (MI) may facilitate behavior change- 4 keys: empathy; developing discrepancies between actual and desired behavior; rolling with resistance and supporting self-efficacy; enhance weight loss.	Grade A recommendation to achieve behavior change with MI versus just counseling- weight loss was 1.47 kg more than usual practice. - *Helps with EBP question*

2)	(Wadden *et al.*, 2014) Behavioral treatment of obesity in patients encountered in primary care settings: A systematic review. Retrieved from: http://dx.doi.org/10.1001/jama.2014.14173	Level I-Grade A	Systematic review—PubMed, CINAHL, and EMBASE for RCTs published between January 1980 and June 2014 that recruited overweight and obese patients from primary care; provided behavioral counseling (i.e., diet, exercise, and behavioral therapy) for at least 3 months, with at least 6 months of post randomization follow-up; included at least 15 participants per treatment group and objectively measured weights; and had a comparator, an intention-to-treat analysis, and attrition of less than 30% at 1 year or less than 40% at longer follow-up.	In 2011, the Centers for Medicare & Medicaid Services (CMS) approved intensive behavioral weight loss counseling for approximately 14 face-to-face, 10- to 15-minute sessions over 6 months for obese beneficiaries in primary care settings, when delivered by physicians and other CMS-defined primary care practitioners. However, no studies were found that followed the CMS guidelines of weight management approved in 2011- 14 for face-to-face practice, 10-15 minute sessions over 6 months.	Review showed that weight loss was 0.3 to 6.6kg from baseline with some weight loss intervention- there needs to be more research to identify the professional qualifications and training required to provide effective behavioral weight loss counseling in primary care setting.	More treatment sessions, delivered in person or by phone by trained interventionist were associated with patients losing 5% or more of baseline weight. Primary care providers play a critical role in diagnosing and treating obesity. Intensive behavioral counseling can induce clinically meaningful weight loss, but there is little research on primary care practitioners providing such care. The present findings suggest that a range of trained interventionists, who deliver counseling in person or by telephone, could be considered for treating overweight or obesity in patients encountered in primary care settings.

3)	(Perri *et al.*, 2014) Comparative effectiveness of three doses of weight-loss counseling: two-year findings from the rural LITE trial. Retrieved from: http://www.ncbi.nlm.nih.gov/pubmed/25376396	Level I-Grade A	Experimental study; RCTs ages 21-75 BMI>30 N=612	Patients free of uncontrolled HTN, diabetes, and not active disease in last 12 months. No substance abuse and clinically significant depression- AA only made 11-17% of study group.	Two year mean reductions in initial body weight were 2.9% -3.5% for the control, low, moderate, and hides dose conditions.	A moderate dose of behavioral treatment produced two-year weight reductions comparable to high-dose treatment at a lower cost.
4)	(Peterson & Cheng, 2013) Physical activity counseling intervention to promote weight loss in overweight rural women. Retrieved from: https://login.pallas2.tcl.sc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ccm&AN=104127333&site=ehost-live	Level I-Grade A	Experimental study; descriptive longitudinal study	N=25/small Patients did not keep scheduled appointments.	The trans theoretical Model-Stay Alive with Five-A's; had symptoms of depression 2nd to poverty	Health providers needed to identify depressive symptoms to make for an effective weight loss program and screen for depression using PHQ-9.
5)	(Campbell-Scherer *et al.*, 2014) Implementation and evaluation of the 5As framework of obesity management in primary care: design of the 5As Team (5AsT) randomized control trial. Retrieved from:	Level I-Grade A	Protocol-RCT with mixed method evaluation-divided into three phases-Behavior change model using the Theoretical Domains Framework-picks patients that are committed to study- RE-AIM framework to	Provider behavior was a key feature in any primary care intervention- if provider did not have the skills, beliefs and confidence to intervene effectively with patients there will not be an improvement in obesity management in practice.	A protocol was designed to implement and evaluate the 5As Phase1-intervention-2-passive phase-6month intervention-3-sustainablitiy-check primary outcomes over 12 months-. Pragmatic	Need to be trained use this effective evidence based weight loss intervention.

	http://www.ncbi.nlm.nih.gov/pubmed/24947045		check effectiveness of intervention		design with real world interventions using 59 providers; 46 family practices with over 160 family physicians serving 192,655 pt.	
6)	(Befort *et al.*, 2016) Protocol for the Rural Engagement in Primary Care for Optimizing Weight Reduction (RE-POWER) Trial: Comparing three obesity treatment models in rural primary care. Retrieved from: http://www.sciencedirect.com/science/article/pii/S1551714416300209	Level I-Grade B	Protocol for Cluster-randomized pragmatic trial was used to evaluate the comparative effectiveness of three obesity treatment models in rural primary care: the Intensive Behavior Therapy fee-for-service (FFS) model reimbursed by Medicare, a team-based model that recognizes the patient-centered medical home (PCMH) as a preferred delivery approach, and the centralized disease management (DM) model, in which phone-based counseling is provided outside of the primary care practice-3	Improved weight loss from base-line to 24 months. But follow-up at 12 to 24 months was poor. One cohort left the study because provider resigned due to health problems. Data has been inconsistent for rural patients.	Ages 20-75 years. BMI 30-45 in rural areas. Used phones to screen-followed by ½ training protocols. FFS- 15 fact-to-face counseling-PCMH-fewer face to face; after hours' consultation and telephone visits; DM-disease management is delivered by obesity treatment specialists; used groups of 12-16 patients in phone sessions.	Data is still lacking. Findings to illuminate if which is the effective weight loss treatment intervention in rural primary care at 24 months. First large scale study for rural health. Primary care has great potential to fill major gap in evidence based weight control programs. Medicare IBT standard for obesity has not been thoroughly evaluated as well as the others.

		RCTs, 36 primary care practices randomized for FFS, PCHM, and DM in RE-POWER trial in Kansas, Nebraska, Wisconsin and Iowa- 12 in each Arm of study			
7)	(E. A. Sherson, Yakes Jimenez, & Katalanos, 2014) A review of the use of the 5 A's model for weight loss counselling: differences between physician practice and patient demand. Retrieved from: http://fampra.oxfordjournals.org/content/31/4/389.abstract	Level I-Grade B	Systematic review-out of 230 identified only 15 related to aim of this review- Behavioral Change Model- National Level Model adopted by Medicare for intensive behavior therapy related to obesity	Data search was limited to PubMed database and others were not used. Used "physician" search term so other PCP could have been missed in literature review. Inconsistent assessment of all the 5A's across studies; studies were cross-sectional- inability to determine if pt. preferences or physician practices change over time with consistent use of 5A's	Majority of pts want to discuss weight loss with Assist and Arrange of the 5As framework but providers rarely do— they prefer to Advise and Assess- but rarely Agree-Assist and Arrange- increases pt. motivation when used properly	Inconsistent assessments, lack of longitudinal design- PCPs need to use tools more effectively for weight loss-take 5-10 minutes to implement in office practice- More consistency with using all elements of 5As- Need more studies with training for providers to compete the 5A's.
8)	(Hooper et al., 2015) Effects of total fat intake on body weight. Retrieved from: http:http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD011834/full	Level I-Grade B	RCTs. N= 54,000 – 30 sets of analysis of 25 cohorts; Meta-analysis; meta-regression	Trials included participants to a lower fat intake versus usual fat intake but with no intention to reduce weight	Eating lower fat intake versus usual fat showed a consistent by small effect on low body fatness; slightly lower weight; BMI and weight circumference compared with controls.	The ideal proportion of energy from fat in our food and its relation to body weight is not clear. Study did not address weight loss but low fat does help to reduce weight

9) (Bennett *et al.*, 2013) Behavioral treatment for weight gain prevention among black women in primary care practice: A randomized clinical trial. Retrieved from: http://dx.doi.org/10.1001/jamainternmed.2013.9263	Level I-Grade B	Experimental study-RCT—6 community health centers N=194- 25-44ages-double blind	BMI-25-34.9; must have English fluency- and resident of NC-no history of pregnancy; mental illness; mi or stroke or cognitive; development disorders; provided $50 at baseline and at follow-up visits	Shape Intervention-Medium intensity intervention included tailored behavior change goals. Week monitoring; monthly counseling; gym membership-BMI mean was 30 based-79% disadvantaged-12-month intervention was better than baseline62% below baseline compared with 45% with usual care.	Medium intensity behavior primary care demonstrated efficacy for weight gain prevention among pre-menopausal women
10) (Foley *et al.*, 2012) Weight gain prevention among black women in the rural community health center setting: the Shape Program. Retrieved fromhttp://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-12-305:	Level I-Grade C	Experimental study; RCT	N=194	Shape program using behavior change theory-mobile tech used Class I obese-BMI 25-35-used dietician-"coach" for tele-nutrition calls	No weight loss documented; vouchers for taxi- gym and other incentives expensive to implement-weight maintenance better than weight loss
11) (Steglitz *et al.*, 2015) Evaluation of an electronic health record-supported obesity	Level I-Grade C	Experimental study- RCT-- EHR reviewed 6 months prior and 6 post. 3 studies:	40 clinicians and 7000 pts with 67% are Spanish speaking. 52-item survey in pre-and post-	Clinician intake protocol increased with obesity related assessment.	Many implementation barriers in using form in real-time. MA or nurse assistant had

management protocol implemented in a community health center: a cautionary note. Retrieved from: http://jamia.oxfordjournals.org/content/jaminfo/22/4/755.full.pdf		Clinician; Population Study; and Exposure Study.	survey EHR only utilized in 72% of the office practices. Clinician Study is biased because they are highly motivated. Inconsistent in data intake in all 3 studies	Pts received 2x as much weight loss counseling. But no weight loss was evident in the EHR records for overall clinic population.	tough time implementing the Health Behavior Checklist. - Inconsistent practice. Digital tools may be better than paper in the future.
12) (Nikolaos Mastellos, Laura H Gunn, Lambert M Felix, Josip Car, & Azeem Majeed, 2014b) Trans theoretical model stages of change for dietary and physical exercise modification in weight loss management for overweight and obese adults. Retrieved from: http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD008066.pub3/abstract;jsessionid=5F204F9666C4DFBAC6E9DF172ED2A54F.f01t01	Level II- Grade C	Systematic review- combination of RCTs using TTM SOC as model Multiple electronic databases N=2971	Small number of studies and variable methodology, quality limits finding to clinical practice. The main limitations include inadequate reporting of outcomes and the methods for allocation, randomization and blinding; extensive use of self-reported measures to estimate the effects of interventions on several outcomes, including weight loss, dietary consumption and physical activity levels; and insufficient assessment of sustainability due to lack of post-intervention assessments	Weight loss for adults only using TTM SOC led to sustained weight loss 2.1 kg to 0.2kg at 24 months were inconclusive	Using TTM SOC in weight loss in limited by risk of bias and imprecision- need well-designed RCT to produce conclusive evidence.
13) (Brown, 2012) Primary care interventions	Level III- Grade B	Qualitative study- 5 focus group of	Did not assess pt. perspective only physicians	Audio recorded and transcribed.	Using patient centric approach to

	for obesity: behavioral support, whether delivered remotely or in person, facilitates greater weight loss over 2 years than self-directed weight loss. Retrieved from: https://login.pallas2.tcl.sc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ccm&AN=1		communities-based PCP enrolled in POWER trial- 16.4 years of experience; 77% in internal medicine-offered $50 gift card-2 independent investigators analyzed data-	about communicating technique. PCP interest and training after being part of the POWER trial gave them more obesity management training and experience-	26 PCPs in one of five groups-3 subthemes-motivation; partnering strategy—and handling challenges during weight counseling	help pt. lose weight-positive reinforcement-empathic; friendly-courteous-using consistent 5A's approach; though MI is time intensive-PCP are well positioned to adopt this.
14)	(Kushner & Ryan, 2014). Assessment and lifestyle management of patients with obesity: Clinical recommendations from systematic reviews. Retrieved from: http://dx.doi.org/10.1001/jama.2014.10432	Level III-Grade A	Systematic Review of 2013 Guidelines; as well as other guidelines for obesity were include: 1998NHLBI Guidelines; American Association of Clinical Endocrinologists; Bariatric Physicians; 2008 Physical Activity individual pts.	Publication bias-insufficient evidence on sample size	Screen all adults for overweight or obesity. Assess with medical history should be obtained and emphasis on complications of obesity is better than BMI>30 alone or with comorbidities or >25 along with one comorbidity or risk factor	Screen, assess, initiated treatment or referral to achieve and sustain modest weight loss-believe we under-estimate of obesity related risk if done on BMI alone- need to evaluate risk factors for those less that BMI<30; also consider referral to mental health for emotional eating and stress reduction.
15)	(Paul McGinnis, Davis, DeSordi, & Thomas, 2014) Integrating	Level IV-Grade A	Clinical practice Guidelines-Bridge-building Toolkit for	No data from study.	Great tool to help providers identify resources	Can personalize template to meet need s of RHC-lots of useful

					links to video; CMS website.
Primary Care Practices and Community-based Resources to Manage Obesity. Retrieved from: http://www.ahrq.gov/sites/default/files/publications/files/obesity-pcpresources.pdf		Rural Primary Care Practices. In 2010, network membership included 161 clinicians and 49 primary care practices located in 37 rural communities throughout the State of Oregon.		with their community	
16) (McGuire, 2012a) Institute of Medicine. 2012. Accelerating progress in obesity prevention: solving the weight of the nation. Retrieved from: http://iom.nationalacademies.org/Global/Search.aspx?q=obesity+and+rural&output=xml_no_dtd&client=iom_frontend&site=iom&proxyreload=1	Level IV-Grade A	Consensus panel-evaluated hundreds of strategies using the "systems approach."	No plan to solve problems-lots of good ideas.	Obesity is a complex problem-need to engage leaders-disproportionate affect minority low income, less educated, & rural population.	Comprehensive approach to community-pts need to leave health care providers with more knowledge about obesity prevention that can be put into action.
17) (U.S. Department of Health and Human Services, Released 2006 May (revised 2014))Adult weight management evidence-based nutrition practice guideline.	Level IV-Grade A	Systematic review of RCTs-Review of Published Meta-Analyses	Hand-searches of Published Literature (Primary Sources) Hand-searches of Published Literature (Secondary Sources) Searches of Electronic Databases	For weight loss, the schedule should be at least 14 encounters (either individual or group) over a period of at least six months. High-frequency	Provided evidence-based recommendations on medical nutrition therapy (MNT) for adult weight management

Retrieved from: http://www.guideline.gov/content.aspx?id=48761&search=obesity+national				comprehensive weight loss interventions result in weight loss. **Strong**, Imperative; Moderately convincing evidence indicates that the food environment is associated with dietary intake, especially less consumption of vegetables and fruits and higher body weight. Strong and consistent evidence indicates that adults who eat fast food often are at increased risk of weight gain, overweight and obesity and that screen time, especially television screen time, is directly associated with increased overweight and obesity. **Strong**, Imperative should collaborate with the individual regarding a realistic weight loss goal, such as

					one of the following: Up to two pounds per week; Up to 10% of baseline body weight A total of 3% to 5% of baseline body weight if cardiovascular risk factors (hypertension, hyperlipidemia and hyperglycemia) are present	
18) (Osunlana *et al.*, 2015) 5As Team obesity intervention in primary care: development and evaluation of shared decision‐making weight management tools. Retrieved from: http://onlinelibrary.wiley.com/doi/10.1111/cob.12105/epdf	Level IV- Grade A	Clinical Practice Guidelines- RCT with ethnically diverse population of 192,655 Canadians served by 46 community family practices.	The development and evaluation of tools were limited to NPs, dieticians and MHWs. Future work needed to evaluate physician's and patient perceptions.	12 tools were co-developed with the 5AsT and evaluated- 4 keys finding: tools need to be adaptive; facilitate interdisciplinary practice; help pts. understand expectation of weight loss; and prevent relapse.	Tool-kit developed by NP, mental health workers, and dieticians and were found to be simple; flexible and appropriate to the primary care context.
19) (Nam, 2013) Effects of social support and spirituality on weight loss for rural African- American women. Retrieved from: https://login.pallas2.tcl.sc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ccm&	Level IV- Grade B	Opinion of respected Authorities- Mantel- Hensel hypothesis test; Fisher Exact Test; T-test.	Data was incomplete because at the beginning of study had 29AA in nonspiritual and at the end had 17; while 45 in spiritual and at the end had 31.	10 wk. weight loss intervention program showed that spiritual support provided more weight loss in AA women that non-church goers with pre-test and post-test.	Although emotional support provided for weight loss- it study was 10 wks. long. Sample size was small. Not sure if weight loss could be sustained over longer period- there were large weight differences

AN=10777792 8&site=ehost-live					between the two groups.
20) (Harris, 2016) The interface between primary health care and population health: challenges and opportunities for prevention. Retrieved from: http://www.ph rp.com.au/wp-content/upload s/2016/01/PH RP-26-01-Interface-FINAL-01-20Jan16.pdf	Level V- Grade-B	Opinion of expert- based on experiential experience	Insufficient evidence- not data to support claims- conclusions cannot be drawn from the lack of undefined data.	Primary health care has potential to contribute to population health at the individual and population levels. Ask-assess – advise- assist-arrange signifies an action by primary care providers to reduce risk and improve health.	Prevention takes time and providers in disadvantage communities may be stretched with insufficient time in dealing with issues. 5As approach to provide a pathway to improve health of individual– with phone, eHealth, working with other disciplines.
21) (Gudzune *et al.*, 2012) Primary care providers' communicatio n with patients during weight counseling: a focus group study. Retrieved from: http://www.nc bi.nlm.nih.gov /pmc/articles/P MC3462265/	Level V- Grade B	Experiential Evidence-Qualitative Study Case Reports	26 PCPs from 6 different practices were paid $50 already enrolled in the POWER trial before-	Focus groups had (3) communicati ons themes-Motivating pts.; partnering with pts.; handling challenges with pts. All focus groups were audio-recorded and transcribed verbatim- 2 investigators reviewed independently .	Understandin g the different strategies used by PCP in weight loss counseling help PCPs use a consistent and effective approach in implement the 5A's and reduce the barriers related to discussing weight loss. Also, teaching motivational interviewing may be helpful.

Note. Dearholt, S. L., & Dang, D. (2012). *Johns Hopkins Nursing Evidence-Based Practice: Models and Guidelines (2nd Edition)*. Indianapolis, IN, USA: Sigma Theta Tau International.

Appendix K: Poster Abstract

Poster Abstract

Losing Weight with Five A's (5A's): Assess, Advise, Agree, Assist, Arrange framework and Motivational Interviewing (MI) for health behavior change counseling: A Systematic Review

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Presentation Preference: Poster Submission

Abstract Categories:

Community Public Health/Health Promotion

Abstract:
Introduction: Obesity has reached epidemic proportions with two-thirds of United States (US) adults either overweight or obese. Seventy-five percent of African American (AA) women ages 20 or older are overweight and nearly 50 % are obese.   Among US adults, Black and Latino populations have substantially higher rates of obesity than do White populations. According to the Trust for America's Health and the Robert Wood Foundation in 2016, 47.8% of Black Adults are obese, compared to 42.5% Latinos, and 32.6% White. Eighty-two percent of AA women are overweight or obese compared to 63.2% White women and AA adults are nearly 1.5 times as likely to be obese compared with White adults. The primary objective of this review was to conduct a substantive literature review on weight loss and obesity management practices for disparate populations while identifying gaps in the literature.

Method (s): The objective of this review was twofold and included 1) reviewing the existing literature and 2) develop interventions to use in a rural health clinic based on evidence based practice. Databases for the review included: National Guideline Clearinghouse, CINAHL, Joanna Briggs Institute, Cochrane, Agency for Health Care Research and Quality, Evidence-Based Nursing and PubMed. The inclusion criteria for articles of interest included: obese adult AA women ages 18-44 receiving care in a primary care clinic for weight management. The following exclusion criteria was used: overweight patients, weight loss in pregnant women, all Caucasian women, BMI < 30,

children, elderly, weight loss with medication management, studies outside the US, articles older than 2000, studies comparing one weight-loss program versus another, and urban settings.

Results: Rapid critical appraisal (RCA) is a process used to evaluate articles of interest. RCA is a methodology that helps the researcher review each study to determine its level of evidence, how well it was conducted, and how useful it is to practice. The evidence and quality rating guide by the *Johns Hopkins Nursing Evidence-Based Practice Models and Guidelines* was used to further analyze the articles of interest. The initial search identified 21 articles. In 2011, the Centers of Medicare and Medicaid Services (CMS) approved Intensive Behavior Therapy called the Five A's and Motivational Interviewing for obesity management but the research shows primary care providers are not providing obesity counseling. The data has shown that provider behavior is a key feature in the 5A's weight loss intervention but lack the skills, beliefs and confidence to be able to intervene effectively with patients.

Discussion & Conclusion: This presentation provides an understanding of the health disparities found in the poor and under-served population especially for obesity management. Studies included in this review were limited many factors such as small size, patient attrition, and selection bias. The findings indicate the Five A's of Weight Loss could improve weight outcomes for obese AA women and should be used as evidence-based practice in a rural health clinic.