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## Utilizing Motivational Interviewing to Encourage Weight Loss in Primary Care

Item Type	Capstone Project
Authors	Sergeant, Wendy
DOI	<a href="https://doi.org/10.7275/14391737">https://doi.org/10.7275/14391737</a>
Download date	2025-01-22 01:03:53
Item License	<a href="http://creativecommons.org/licenses/by-nc-nd/3.0/">http://creativecommons.org/licenses/by-nc-nd/3.0/</a>
Link to Item	<a href="https://hdl.handle.net/20.500.14394/37886">https://hdl.handle.net/20.500.14394/37886</a>

Utilizing Motivational Interviewing to Encourage Weight Loss in Primary Care

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Date of Submission: April 29, 2019

### Acknowledgements

I want to acknowledge and thank the staff and professors of the University of Massachusetts Amherst, and especially the well structured group of the College of Nursing, who truly want the students rising to their highest potential. I am grateful for all of them who have been instrumental in my studies and this Capstone project. There a few who have been most influential:

Dr. Donna Zucker, nursing professor and my project chair, encouraged and inspired me.

Dr. Pam Aselton, director of the DNP program and my mentor, always had time even on her busiest days, and guided me through the program.

Dr. Jengok Choi, nursing professor, was instrumental in stats of the project.

Dr. Genevieve Chandler, nursing professor, turned my burnout into resiliency.

Dr. Gabrielle Abelard, colleague and nursing professor, challenged me to a higher standard.

Dr. Stephan Cavanagh, Dean of College of Nursing, stimulated new possibilities in nursing and around the world.

Florianne “Bo” Jimenez, writing professor and my editor, provided me with feedback, rendering ideas into well formed thoughts.

I want to acknowledge Sigma Theta Tau International Honor Society of Nursing, Beta Zeta chapter and Massachusetts Coalition of Nurse Practitioners for allowing me a platform to share this project.

Lastly, I am overwhelmed with gratitude for my family, their never-ending support and love, especially my husband, JR.

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### Abstract

*Purpose and Background:* The purpose of this project was to educate nurse practitioners (NPs) and nurses (RNs) to promote healthy changes in obese individuals using the principles of Motivational interviewing (MI). Obesity is a growing epidemic in the United States with two out of every three adults considered overweight or obese. Their health problems become costly and deadly. Ideally, RNs and NPs are the front line providers in this struggle of obesity because of their philosophy of health promotion. RNs and NPs can screen and address obesity through lifestyle counseling. Motivational interviewing, a proven and effective counseling method, is useful in enhancing changes directed towards reaching health behavior goals.

*Methods:* This project began after Institutional Review Board (IRB) approval, and recruiting graduate nursing students at a western Massachusetts university that are board certified as RN and NP. The first part of the project commenced with pre-survey, then the viewing of an online MI educational session, followed by a written post-survey and at one month to see if participants are utilizing these skills in their practice.

*Results.* Ten participants started and seven participants completed the project. (RN 60%, NP 40%). All were female. RNs and NPs increased their knowledge of MI principles and core skills measured by survey.

*Implications/Conclusion:* The primary outcome of the project was that NPs and RNs demonstrated increased knowledge of MI principles and core skills after completing online training. The secondary outcome was the NPs and RNs recognized the value of MI counseling methods and facilitated the use of MI techniques in practice of obesity management.

*Keywords:* Obesity, Nurse, Motivational Interviewing

## Utilizing Motivational Interviewing to Encourage Weight Loss in Primary Care

### **Introduction**

This quality improvement project aimed to change how nurses and nurse practitioners communicate with obese patients through the use of Motivational Interviewing (MI). Obesity has become a burdensome health problem in the United States. In the status quo, primary care providers often fail to treat obesity by deferring to other providers; thus there exists a need for Primary Care Providers (PCP) to start a conversation with their obese patients. The providers need to use a different approach other than the ineffective behavior currently used.

### **Background**

Obesity is a growing epidemic in the United States accounting for two out of three adults considered to be overweight or obese (Centers for Disease Control and Prevention (CDC), 2017; Flegal, Kruszon-Moran, Carroll, Fryar, & Ogden, 2016). Ten years ago, “the estimated annual medical cost of obesity in the U.S. was \$147 billion. The medical costs for people who have obesity were \$1,429 higher than those of normal weight” (CDC, Overweight and Obesity, 2017, para. 3). By 2018, this number is expected to double, since the obese population has increased proportionally. As of 2016, over 75 million Americans want to lose weight spending over \$60 billion on weight loss strategies or products (Fooducate, 2016). The chronic health problems that arise because of weight include diabetes, hypertension, heart disease, and arthritis (Kim & Basu, 2016), thus losing weight would help lessen the financial burden individually and societally.

The current approach to obesity management in primary care is diagnosing obesity based on weight and BMI (Fitzpatrick et al., 2016, Tsai & Wadden, 2009). Primary care providers are minimally addressing obese patients with standard advice to reduce eating and increase activity, compared to other chronic disease states wherein the advice is more complex care (Grunfeld et



al., 2013, Haslam, 2014, Kaplan et al., 2017, Moorhead et al., 2013). As the result of this poor response is no change in lifestyle or weight in those that are obese. Additionally, frustration mounts between patient and provider for this continuous cycle. Nurses, on the other hand, spend a significant amount of time during office visits, usually more than fifteen minutes, and have a unique opportunity to influence behavior. Therefore they can serve as ideal coaches for lifestyle change.

A therapeutic and effective communication technique in obesity management is MI. Motivational interviewing has been used effectively in other chronic conditions such as diabetes and substance abuse. This counseling technique has been shown to be an effective tool in confronting patient ambivalence and inaction related to weight loss (Barnes & Ivezaj, 2015; Resnicow et al., 2015). Thus NPs and RNs may overcome barriers by using this technique to promote and change health behaviors.

This project will focus on MI and 5 A's as the models for weight loss. Motivational Interviewing is a counseling technique, which is "a client-centered, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence" (Rollnick, Miller, & Butler, 2008). The 5 A's is a motivational interviewing technique, emphasizing stepwise provider actions: Ask, Advise, Assess, Assist, and Arrange (Sturgiss & Van Weel, 2017). (See Appendix C) Motivational Interviewing was first used in the area of addiction and smoking cessation. Interestingly, Medicare, a major insurance payor, and AHRQ, the leading authority of evidence-based practice, both recommend MI and 5-As for behavioral lifestyle counseling for obesity management. Although the recommendation is prominent, it turns out that MI 5 A's and MI is not an regularly used in practice. Only 32% of providers were generally

familiar with 5 A's, and only 17 % were usually familiar with MI (Addo, Maiden, & Ehrenthal, 2011).

The leading authorities from AHRQ and others have cited as effective evidence-based-practice for weight loss (AHRQ, 2016; Barnes & Ivezaj, 2015; Jay, Gillespie, Sclair, Sherman, & Katlet, 2010). Also, the 5 A's and MI were used in a randomized control trial comparing scalable weight loss treatments in primary care showing MI for weight loss and using web supported interventions was more effective than routine care (Barnes, White, Martino, & Grillo, 2014).

### **Definition of Terms**

*Body Mass Index (BMI):* BMI is a screening tool for body obesity. BMI does not measure body fat directly, however, it is shown to be moderately correlated with measures of body fat. The calculation is weight in kilograms divided by the square of height in meters (CDC, 2017; NIH, 2012). (See Appendices A and B.)

*Obesity:* The CDC defines obesity as BMI of 30 and above, and appears to be strongly correlated with various adverse health outcomes and at risk for certain diseases such as cardiac disease, hypertension, and diabetes and is consistent with these more direct measures of body fatness (CDC, 2017; USPSTF, 2012).

*Obesity Management:* Obesity Management has clear guidelines from the Agency for Healthcare Research and Quality (AHRQ) that includes a diet approximately 1500 kcal/d, at least 500 kcal/d energy deficit (i.e., activity), or "evidence-based diet restricts certain food types (such as high carbohydrate foods, low fiber foods, or high-fat foods" (Jensen et al., 2013, 3a 2).

*Overweight:* The CDC defines overweight as a BMI of 25.0 - 29.9. The National Institutes of Health (NIH) recommends that once an individual is classified as overweight, he/she should start lifestyle interventions such as low-calorie diet and increased activity (CDC, 2017; NIH, 2012).

### **Problem Statement**

Healthcare providers, including NPs, are not screening BMI in adults over the age of 18 years, which leads to subsequently not diagnosing obesity thereby not impacting the epidemic (Segal, Rayburn, & Beck, 2017). This project aimed to encourage providers to change practices around obesity screening and treatment.

### **Organizational “Gap” Analysis of Project Site**

There is a practice gap in diagnosing and treating patients who are overweight and obese. Providers are not well educated on health coaching, diet, and exercise (Daley et al., 2016). Often due to time constraints, providers offer only quick advice on nutrition or join a gym or use a weight loss app. Most patients want a collaboration of the PCP to individualize a weight management plan with them (Torti et al., 2017). Generally, patients try to lose weight on their own; the research reports up to 80% of Americans are attempting without medical support (Fooducate, 2016). As a result, PCPs often rely on many other disciplines for their help, such as nurses and dieticians.

There is a need for health education and coaching for RNs and NPs in this area. Nurses are bound by the American Nurses Association (ANA) Code of Ethics for Nurses which delineates their responsibilities to promote health (ANA, 2015). Nurses ask about nutrition and lifestyle and give general guidance especially about nutrition and weight loss filling the role of a nutrition counselor (Henning, 2009).

Nurse Practitioners avoid diagnosing and treating obesity because of a lack of teaching tools (Ward-Smith & Peterson, 2016). The knowledge that obesity is a disease state would mean addressing obesity with these patients is required (Hayes, Wolf, Petterson, & Murray, 2017; Phillips, Wood, & Kinnersley, 2014; Woodruff, Schauer, Addison, Gehlot, & Kegler, 2016). To begin, the provider must address the readiness to talk about obesity (Strategies to Overcome and Prevent (STOP) Obesity Alliance, 2014).

### **Review of the Literature**

#### **Method**

This review of literature focused on how nurses manage obesity. Articles were evidence-based and rated using the critique model by John Hopkins Nursing (Newhouse, Dearholt, Poe, Pugh, & White, 2005). The research study is rated by strength as described in levels, and quality. Level I: Experimental study/randomized controlled trial (RCT) or meta-analysis of RCT; Level II: Quasi-experimental study; Level III: Non-experimental study, qualitative study, or meta-synthesis; Level IV: Opinion of nationally recognized experts based on research evidence or expert consensus panel (systematic review, clinical practice guidelines); Level V: Opinion of individual expert based on non-research evidence. (Case studies, literature review, and organizational experiences). Quality of the evidence is rated with the letters: A is high, B is good, and C is low quality.

Studies that were included in this review had a higher level of evidence, were in English, available as full text and were published between 2007 and 2018. Multiple databases were searched in EBSCO, which included the Cumulative Index of Nursing and Allied Health Literature (CINAHL), and PubMed. Keywords were nursing, obesity, weight management, adults, and primary care. Using the term "obesity management" (42,972), "weight loss"

(277,29), "weight management" (128,342), 2,186 articles were found from all these databases using keywords "primary care, weight loss"; 89 articles found using keywords "nurses role in obesity", 44 articles found relating to "barriers of nurses in weight loss". The included articles were: research years 2008-2018, in English, United States, adults (over the age of 18 years) and terms: "obesity", "weight loss", "weight management" and "nurse." The excluded articles were: duplicates, severe chronic disease (i.e., HIV, hepatitis, dementia, hemophilia, and schizophrenia), and children under the age of 12. A total of seven articles were chosen for the review.

## Results

**Nurses Role in Obesity Management.** The role of nurses in the treatment of obesity has not been sufficiently addressed in the literature. The nursing articles were categorized according to their approach to obesity management: those that concentrated on implementing a technology as an intervention for obesity (Buchholz, Wilbur, Miskovich, & Gerard, 2012; Collins & Champion, 2014; Keating & McCurry, 2015; Knutsen & Foss, 2011; Little et al., 2016; Ruotsalainen et al., 2015; Yardley et al., 2014) implementing guidelines, as a team approach and in office program (Beck, 2015; Christie et al., 2007; Estabrooks et al., 2017; Helpa, 2017; Keke-Ekekwe, 2017; King, 2008; Perkins et al., 2016; Ritten et al., 2016) and approach to barriers, including MI (Baer, 2017; Bearden, 2015; Brobeck et al., 2011; Roberts, Standage, Olaoye, & Smith, 2015; Soderlund & Kristenssan, 2008; Thabault et al., 2016).

**Motivational Interviewing.** A recent DNP researcher discovered that the 5A's framework and MI had a significant effect on obesity. In her study, women with obesity saw an average of weight loss of 2.07 pounds, and the participants had significant changes in their body size of an average of .86 inches and reduced BMI by 0.34 (Baer, 2017).

Additionally, MI appears useful in a clinical setting as few as one MI session may be effective in enhancing readiness to change health behavior goals (VanBuskirk & Wetherell, 2014). Likewise, as little as one to three brief MI skills training sessions for health care providers (HCP) and medical students improved their confidence and knowledge in counseling, respectively (Asselin et al., 2017; Daepfen et al., 2012; Edwards, Stapleton, Williams, & Ball, 2015) and (Cucciare et al., 2011). Also, HCP showed improved clinician satisfaction by increasing their empathy and improved their burnout scores when using MI (Pollak et al., 2016).

Like the HCPs, Swedish primary care nurses had a positive experience with MI. They scored high in the categories of Demand and Enrichment also thought as a valuable tool in health promotion (Brobeck, Bergh, Odencrants, & Hildingh, 2011); the improved working relationship between nurse and patient (Ostlund, Wadensten, & Kristofferzon, 2015).

A systematic review discovered that technology-delivered MI interventions are feasible and reduce costs, minimized providers' burden, and increased patient comfort and satisfaction with their providers (Shingleton & Palfai, 2016). More confidence and proficiency is gained when using MI by the HCP using both techniques of technology-based (telephone) and coaching (Fu et al., 2015, Gance-Cleveland, Aldrich, Oetzel, & Schmiege, 2017). Health Care Providers had even better proficiency when they used online intervention combined with patient feedback (Pollak et al., 2016).

The feasibility of an office-based obesity management program in primary care is possible when technology-assisted weight loss interventions were used (Turner-McGrievy et al., 2017; Volger et al., 2013). A systematic review, compared sixteen trials using internet-based program for weight loss, discovered that twelve trials achieved weight loss, and ten reported sustained weight loss after one year (Levine et al., 2015). Another review compared trials using

iPods resulting in weight loss (Forjuoh, Ory, Wang, & Bordes, 2014). A combination of both technology and coaching in a primary care weight management program including group-based visits and peer-delivered telephone contacts achieved significant weight loss for patients (Dutton, Phillips, Kukkamalla, Cherrington, & Safford, 2015).

Still, with the knowledge of evidence-based practice and feasibility of MI, providers are not using MI in obesity management because they feel pressures of time commitment (Midboe, Cucciare, Trafton, Ketrosier, & Chardos, 2011). Providers need to learn and practice MI techniques, so they become efficient, when perhaps it is not a time commitment problem but rather a practice problem. Research has illustrated how to complete the 5A's in a time-efficient manner. The first visit focuses on assessment, agreeing on a weight loss goal, and having the patient keep a food diary and activity diary. The second visit involves reviewing the food diary, agreeing on goals, and assisting in addressing barriers. Subsequent visits involve monitoring goals and assisting with and arranging for more intensive services. The process includes: assess five minutes; advice three minutes, agree/assist five minutes, and arrange two minutes (Schlair, Moore, McMacken, & Jay, 2012, p. 227).

**Motivational Interviewing as Behavioral Approach to Weight Loss.** Seven articles were narrowed to that of the project's objectives: Level II-A: Baer, 2017; Bearden, 2015; Marley, 2016; Level III-B: Brobeck et al., 2011; Ostlund et al., 2015; Soderlund & Kristenssan, 2008; Level IV-B: Roberts, Standage, Olaoye, & Smith, 2015.

*LEVEL II:* Motivational Interviewing and its significance in improving nurses' role in obesity interventions have been limited. In a study on the confidence of thirteen NPs/RNs in addressing overweight and obese patients, the researchers noted that participants had increased confidence in their ability to discuss obesity management and refer patients to other providers

(Bearden, 2015). Similar to this study, another evaluated the effectiveness of MI of NP's in a weight loss clinic (Marley, 2016). They did not establish statistical significance. Interestingly, the patients of these NPs already were motivated to proceed with a weight loss intervention, thus arguing that MI would not be the best framework. In the third study, MI technique was not evaluated in providers; however, it was used by HCP in the role of obesity management by HCP (Baer, 2017).

*LEVEL III:* Motivational Interviewing and its significance in improving nurses' role in obesity were evaluated more closely in Sweden, resulting in positive experiences of all nurses using MI (Brobeck et al., 2011; Ostlund et al., 2014; Soderlund et al., 2008). The separation of the studies was in their conclusions, in that the work of MI is demanding, and that more effort is needed to incorporate this new method into practice to avoid giving simple advice (Brobeck et al., 2011), requiring more training and support of MI technique (Ostlund et al., 2014), and developing a new way of thinking (Soderlund et al., 2008).

*LEVEL IV:* Motivational Interviewing and its significance in improving nurses' role in obesity management was used to address the barriers of obesity, and using this technique was effective and feasible in practice (Roberts et al., 2015.)

The following studies were specific to MI and nurses in obesity management. Bearden (2016), Brobeck et al. (2011) Ostlund et al. (2014) Soderlund et al. (2008) studied professional nurses using the MI and 5 A's proving it is an effective technique in obesity management. NPs and RNs have been successful in MI in the United States (US). Sweden seems to be a leading authority for RNs in MI in obesity management based on the literature available, even so, matches the US' view that MI requires training and support. A limitation of the studies is a low



number of participants (thirty-five in Baer 2017, thirteen in Bearden 2016, twenty-four in Brobeck, twenty in Ostlund 2014 and ten in Soderlund 2008).

There were gaps in the literature, particularly the role of nursing in obesity management. Although MI is a proven technique for weight loss, nursing professionals lack confidence and training to perform in an efficient approach. This project will focus on the research of nurses' role using MI as a behavioral counseling approach in obesity management using an MI framework.

### **Purpose of DNP Capstone Project**

Barriers to patients and providers working together are mostly communication issues (Gunther, Guo, Sinfield, Rogers, & Baker, 2012, Kaplan et al., 2017, Moorhead et al., 2013). Motivational interviewing is a powerful communication technique that may be used for chronic diseases and behavior change and has been considered an evidence-based method for obesity management and is endorsed by AHRQ. One way of approaching obesity in primary care is through the use of MI. Motivational Interviewing is a patient-centered approach to evoke the personal reasons for the change, to collaborate with the patient, and promote their autonomy (Rollnick, Miller, & Butler, 2008). See the Motivational Interviewing Diagram in Appendix D. Motivational interviewing assists patients to work through their resistance to their behavior change. The overall concept of MI is known as the "Spirit of MI" and has four elements that are interconnected: collaboration, compassion, evocation, and acceptance. These elements are expressed using the four MI principles: 1) express empathy, 2) support self-efficacy, 3) roll with resistance, 4) develop discrepancy. The basic interaction techniques are using: open questions, affirmation, reflective listening, and summary reflections (OARS).

Health care providers have increased their proficiency using online an MI intervention training (AHRQ, 2016, Allan, 2005, Edwards et al., 2015). Similarly, this project will implement an online MI educational training for health promotion in obesity management with NPs and RNs. When the NP and RN uses MI, they empower the patient to address their weight issues. The literature acknowledges that NPs and RNs have resistance using this technique (Brobeck et al., 2011, Cucciare et al., 2011, Fu et al., 2015, Marley, 2016, Soderlund & Kristenssan, 2008). Thus training and exposure to this method will overcome their opposition to the new way of thinking and treatment of obesity management. By the NP and RN practicing MI and resolving their ambivalence toward obesity management, they will learn how to use MI with patients.

The primary outcome is a consistent practice of incorporating MI leading to a more proficient and confident professional in addressing obesity. This study aims to provide The DNP awareness of MI and the feasibility of use it in treating obesity in primary care. Motivational interviewing is a suitable method because it empowers the patient to change.

### **Project Design/ Methods**

#### **Project Design**

The design of this research project was done using a quantitative online survey to measure how nursing professionals' confidence and competence changed after MI training. Participants were asked about their demographics, current use of MI, the experience of MI through an pre-assessment online survey, expected to take thirty minutes. The participants then began an online educational activity lasting about sixty minutes. Next, they took an online post-activity survey for comprehension and retention, expected to take less than thirty minutes (see Appendix H). Finally, the participants were asked about their MI experience through an online survey lasting thirty minutes. Also, all participants were asked about their use of MI 30 days

after the post-test. The education session started once the participants opened the link. The participants were asked of a time commitment of one hundred sixty minutes for this quality improvement project. The participants were placed in a drawing for \$50 gift card for the initial participation, then after completing the one-month follow-up survey was given a \$10 gift card.

### **Goals and Objectives.**

#### Goals.

1. For University of Massachusetts College of Nursing (CON) Graduate students who are RNs and NPs to articulate the principles of MI, after completing an educational module based a survey score of at least fifty percent of scored by February 2019.
2. For University of Massachusetts CON Graduate students who are RNs and NPs, to use based MI techniques in their practice of obesity management as evidenced by a post-1 month educational survey scored by March 2019.

#### Objectives.

1. Nurses and nurse practitioners will increase knowledge of MI by 50% after the initial educational session, and sustain this knowledge at one month.
2. Nurses and nurse practitioners will use the MI technique with patients that are overweight or obese at least fifty percent of their professional practice of nursing.

#### Expected Outcomes.

1. Nurses and nurse practitioners will demonstrate increased knowledge of MI principles and core skills after completing online training.
2. Nurses and nurse practitioners will recognize the value of MI counseling methods and will use of MI techniques in their practice of obesity management.

## Methods

**Data Collection.** Data were collected using surveys linked to REDCap. REDCap is a secure web application for building and managing online surveys and databases, and a product of the University of Massachusetts Medical School. Also, it provides automated export procedures for data downloads to Excel and common statistical packages.

Each consenting participant was sent an invitation through REDCap. Once the participant opened the individual and unique link, the project began with an online informed consent, surveys, and educational module in sequence.

The data uploaded into REDCap consisted of the survey results and qualitative interviews. The following was described: demographics of participants, education, professional history; and knowledge, use, and comfort of motivational interviewing techniques.

**Data Analysis.** The demographics data were analyzed using descriptive statistics of frequencies, mean, median, and standard deviation on the following measurements. The pre, and post data were compared across pre, and post -survey and one-month post activity means. A semantic analysis regarding their experiences MI highlighting words and themes was also performed. The data was described and shown in bar graph form of increase in percentages.

## Measurement Instruments

In order to measure the outcomes of this DNP Project the following five instruments were used, and applied in sequential order. Starting with the demographic questionnaire that has five questions asking the participants of their gender, age, board certification, practice and the number of obese patients seen monthly. See Appendix F.

Next survey, Pre-Assessment, assessed the participant about their Motivational interviewing skills, experience, and knowledge and given before the educational module. These

eight questions were multiple choice of varying degrees, for example of minimum knowledge to expert and do not use to mostly use. The last two questions allowed the participant to share their perceived barriers and recommendations of weight loss before this activity. See Appendix G.

The following instrument, Post Educational Survey, was asked of the participant after they finished the online educational module. There were nineteen questions using a seven-point Likert scale that asked how likely they were to performing the MI behaviors. 1 meant “not at all, 2 illustrated “a little, 3 explained “infrequently”, 4 translated to “quite a bit”, 5 interpreted ‘quite a bit”, 6 described “considerably” and 7 defined as “extensively” from not at all to extensively. See Appendix H.

After one month of the educational module, the participant completed the Motivational Interviewing Clinician Self Assessment Report. This questionnaire is a valid and reliable tool assessing Motivational interviewing skills of clinicians (Petrova et al., 2015). There are fourteen questions. Similar the post education survey, using a seven-point Likert scale, the choices from which to answer were: 1 meant “not at all, 2 illustrated “a little, 3 explained “infrequently”, 4 translated to “quite a bit”, 5 interpreted ‘quite a bit”, 6 described “considerably” and 7 defined as “extensively”.

See Appendix I.

The last informal questionnaire, Post Interview Questions, was given to the participant one month post educational module. It inquired in two open-ended questions about the participant’s practice of obesity: asking about their beliefs of obesity, their experience of talking with patients about obesity, and their motivations to discuss and diagnose obesity. See Appendix J.

**Project Site and Population**

**Project site.** The project site was conducted at the University of Massachusetts College of Nursing DNP program, known for both online and on-campus programs. The campus is located in western Massachusetts.

**Population.** Participants were recruited from the University of Massachusetts College of Nursing graduate student mailing list. Participants were over the age of eighteen years, practicing as board certified-nurses or -nurse practitioners, and willing to participate. The available population to participate in this quality improvement project was approximately two hundred graduate nursing students. All participants had to have access to a computer with internet.

**Ethical Considerations/Protection of Human Subjects**

The University Institution Review Board (IRB) approval was obtained before initiating the DNP project. The official IRB Determination Form was submitted as soon as the quality improvement project proposal was approved. All participants were protected by Health Insurance Portability and Accountability Act of 1996 (HIPAA) which among other guarantees, protects the privacy of patients' health information (Modifications to the HIPAA Privacy, Security, Enforcement, and Breach Notifications Rules, 2013). Although no health information was collected, there could be an instance where the participants discussed how their Motivational Interviewing communication affected their patients. In this instance, that information must be kept confidential.

Additionally, the DNP student carefully conducted this project according to the Standards of Care of both ANA Ethics and University of Massachusetts. All information collected as a part of evaluating the impact of this project did not include any potential patient identifiers. Participant confidentiality was assured by coding the participants using the individual

identifications numbers. The list of participants and their identifiers were kept locked filing cabinets each practice office, only accessible to the DNP student. All electronic files containing identifiable information will be password protected to prevent access by unauthorized users, and just the DNP student will have access to the password.

All participants were volunteers who agreed to participate in the project, and informed consent was obtained. See Appendix N. Participants were informed at the onset of the time what was required of them.

**PDCA – Planning, Do, Check, Act.**

**Planning.** After obtaining IRB approval, four weeks before the start of the educational activity, an email was sent to the University of Massachusetts Amherst College of Nursing graduate students with a brief description of the project and invitation to participate. See Appendix L.

**Do.** Develop pre-assessment and post-education surveys; nurse educational materials and PowerPoint presentation. Via email link, the participants completed the anonymously demographic survey, a pre-assessment, educational session, and an immediate post-education survey, and at the end of 1 month will complete another survey.

**Check.** Survey results were analyzed for descriptions and demographics of participants; the comfort of using MI, and improvement of using MI.

**Act.** The DNP student completed a manuscript for submission to a journal for publication consideration.

**Timeline.** The pre-and post-survey and the educational activity were developed in August 2018. The project began with IRB approval in November 2018. See Appendix M. Advertisement and recruitment of participants occurred in January 2018. Demographic Survey,

Pre-Assessment Survey, and Post Education Survey commenced January 2019; and then one-month post-education was completed February 2019. Results were tabulated in March 2019.

The presentation occurred in April 2019. See Appendix L.

## Results

**Demographics.** Data were collected and analyzed using descriptive statistics of frequencies, on the following measurements: the number of females versus males, age, identifying NP or RN, and the number of obese patients has seen monthly. The number of graduate nursing students on the mailing list totaled two-hundred. A total of ten participants initially consented, nine completed the educational module, but only seven participants completed the one month survey.  $n = 7$ . Sixty percent of the participants were nurses ( $n=6$ ) and forty percent were nurse practitioners ( $n= 4$ ). There were one hundred percent of the participants identified as female. They range in ages from of 18 to 64 years with majority being 30 -49 years old. The participants saw from 1-10 patients per month to over one-hundred obese patients per month. See Table 1 for age frequencies and Table 2 for a description of demographics of percentages and distribution of answers.

**Pre/Post Educational Activity.** Data were compared across pre, and post-survey and one-month means. A semantic analysis regarding their experiences MI highlighting words and themes was performed.

The Pre-Educational Activity showed that a majority of participants have somewhat to little skills and knowledge of Motivational Interviewing, fifty percent of participants had no experience with MI and a majority do not use or slightly use MI in their practice. Although fifty percent had some experience with MI by reading articles and attending lectures or workshops, an overwhelming ninety percent of participants have not use MI for the treatment of obesity, as



illustrated in the Figures 1 and 2. Highlighted in Table 3 are distribution of answers of responses of Pre-Educational Survey,.



Figure 1: Describe your experience with MI

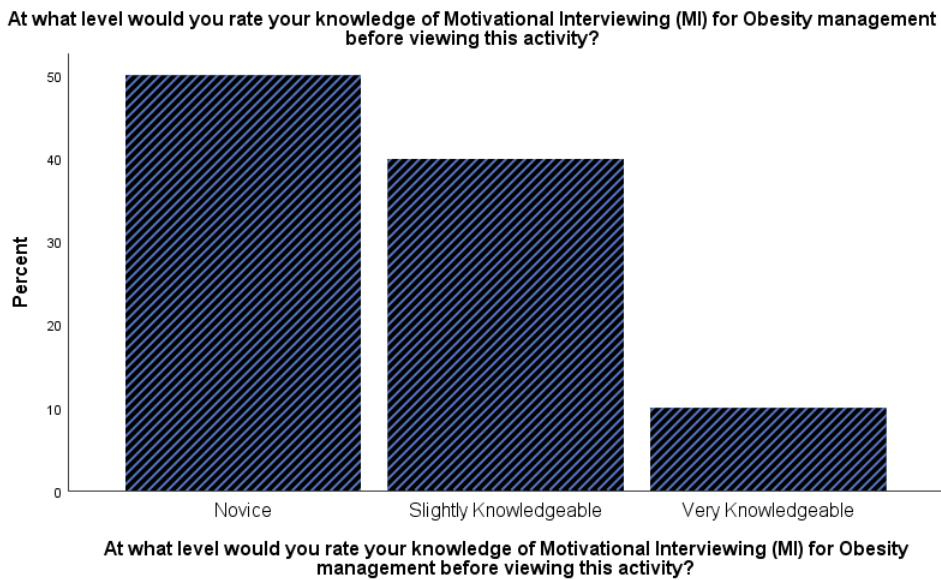


Figure 2: What level rate knowledge of MI for obesity

The Post Educational Activity revealed that participants scored the highest among thirteen of the nineteen MI skills: Open-Ended Questions, Compassion, Reflective Statements, Summary, Understanding Patients' Motivations, Listening, Empowering, Ask, Assess, Advise, Agree, Arrange, and Assist. The lowest scores were with Evocation and Compassion. See Table 4 for distribution of answers of the Post- Educational activity.

Through open-ended questions, participants were asked about the barriers that they perceived to using Motivational Interviewing. There were five main themes: 1) fear of offending the patient talking about obesity: "Being afraid to embarrass them." "Stigma surrounding weight." 2) Issues developing a relationship with patients: Unintentionally shaming my patients and then ruining our patient-provider therapeutic relationship." 3) Lack of knowledge: "I do not have enough knowledge about weight loss." "It will be a challenge for me to offer direct reflection rather than I statements." 4) Time with patients: "Short amount of time." and 5) Patients not adherent to treatment: "I struggle with those who have no desire to change." "Sense of futility that the patient will make any permanent lifestyle changes." The majority perceived that changing patient behavior is difficult and challenging. Most of the participants' recommendations for weight loss were to eat healthier and increase activity; or they deferred to another resource.

**One-Month Survey.** The One Month Survey was the Motivational Interviewing Clinician Self-Assessment Report, answers are illustrated in Figure 3.

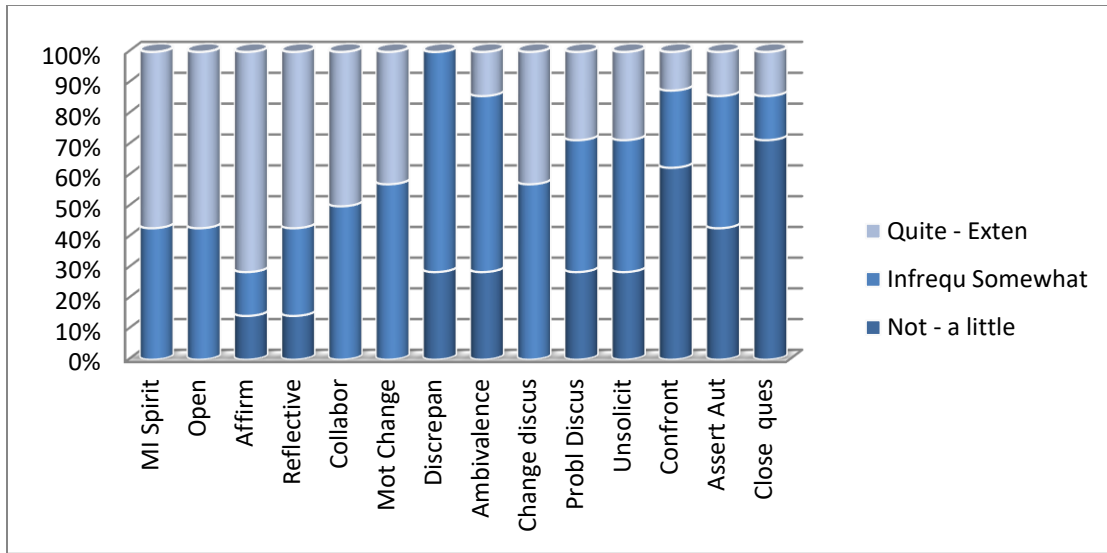


Figure 3: Motivational Interviewing Clinician Self Assessment Report

Scoring and distribution of answers of the One-Month survey can be seen in Table 5. The participants scored highest in MI Style, and Open-Ended Questions. The participants scored lowest in Direct Confrontation of Client, and Asserting Authority. A correlation was performed to understand if a connection between the fourteen traits. Interestingly, the following six correlations were found to be statistically significant, see Table 6 for Pearson Correlation -Two Tail of the Motivational Interviewing Clinician Self-Assessment Report.

1) Affirmation of Strengths and Change Efforts, and Motivational Interviewing Style or Spirit  $r(7) = +.766 p < 0.5$ , two tailed. The connection of affirmation of strengths and change efforts is part of the definition of Motivational Interviewing Style or Spirit.

2) Reflective Statements, and Open-Ended Questions  $r(7) = +.882 p < 0.1$ , two tailed. This correlation of reflective statements and open-ended questions is well connected concept of communication.

3) Reflective Statements, and Affirmation of Strengths and Change Efforts  $r(7) = +.867$   $p < 0.5$ , *two tailed*. The correlation of reflective statements and affirmation of strengths is a strong positive communication technique of counseling.

4) Motivation to Change, and Fostering a Collaborative Atmosphere  $r(7) = +.947$   $p < 0.1$ , *two tailed*. The correlation between motivation to change and fostering a collaborative atmosphere indicates a positive safe environment for a person to change.

5) Unsolicited Advice Direction and Giving Feedback, and Developing Discrepancies  $r(7) = +.840$   $p < 0.5$ , *two tailed*. The correlation of unsolicited advice direction and giving feedback is about how to communicate.

6) Asserting Authority, and Reflective Statements  $r(7) = +.801$   $p < 0.5$ , *two tailed*. The correlation of asserting authority and reflective statements is about how one assertively using reflective statements.

**One Month: Interview Questions.** In the interviews, participants were asked if they would use MI for weight loss. A fascinating 71.4% reported no. The remaining was positive about use of MI in weight loss. They discussed their interactions and outcomes as motivating for both patient and provider citing goal setting, plans for follow up, plans for lapses, achievable weight loss and higher motivation. See Table 7 for interview answers, percentages and responses.

There was a discrepancy between objective and perceived responses, when comparing Motivational Interviewing Skills Post Educational Survey to that One- Month Post education. After training, the participants had less confidence in MI skills of Open-Ended Questions and Summaries, there was noticeably negative difference. See Table 8 below for the comparison of MI skills pre educational module and one month post.

Table 8

*MI Skills: Comparison after 1 month*

	Before	After
Open-ended	71%	57%
Affirmations	71%	71%
Reflective	57%	57%
Summaries	57%	39.4%

The participants described their strengths as Engaging, Listening, Assessing, Affirming, and Accepting. And their weaknesses were described as giving advice and directing rather than empowering the patients, and not connecting with the patients.

**Objectives.** Based on the results the goal was achieved when University of Massachusetts College of Nursing (CON) Graduate students who are RNs and NPs articulated the principles of MI through their experiences with MI as evidence of the retention after educational module based a survey score of a least fifty percent of scored by February 2019. Also, the goal was achieved when University of Massachusetts CON Graduate students who are RNs and NPs, developed a deeper understanding of using MI technique in their practice of obesity management as evidenced by a post-1 month educational survey scored by February 2019.

**Cost-Benefit Analysis/Budget.** The anticipated costs are zero for the MI online program and unknown online survey link via an email. The costs were for a SAS program \$64 and hiring a statistician for \$540. Participants were compensated using gift cards. The participants were placed in a drawing for \$50 gift card for the initial participation, then after completing the one month, follow-up survey was given a \$10 gift card (\$150), and postage (\$6) equaling \$156. Total cost of the project was \$760. See Appendix K.

**Setting Barriers and Facilitators.** Barriers to this project included securing and retaining participants, financial resources, and the timing of the project.

The first barrier was securing participants in the project. Optimistically, the DNP student anticipated a response rate of about 10% of all those recruited or about twenty out of two hundred graduate student nurses or nurse practitioners. Recruitment required marketing participation to over two hundred graduate students, using flyers, email, and listservs. The DNP student is a scholar at the University of Massachusetts College of Nursing and asked those in the graduate nursing program for participation. The DNP student is a leader in Primary Care both as a businesswoman and as a successful Nurse Practitioner, where she is known as a role model for her professional integrity and skills. It was due to these connections that the DNP student was optimistic that other graduates would participate.

Another similar barrier was retaining participants. There was a completion raffle, as well as gift card incentives for interviews. Communication with the participants stimulated the idea of the project. The DNP student maintained communication over email at the participant's convenience.

Costs of the project were not considered a barrier. In an attempt to lower the cost of the use of the Motivational Interviewing educational program, the DNP student decided not to pursue an online program charging each user over five hundred dollars. Instead, she used the American Psychiatric Association (APA) online Motivational Interviewing educational program. APA is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. Currently, this program is in use, has been validated, and DNP student may use it without a fee.

### Discussion

Motivational Interviewing (MI) informed the design of this project. Motivational Interviewing is about accepting where the persona or patient is at in their process of health; this is called ambivalence. Additionally, MI empowers the participant to change on their terms. Usually, health professionals tell people what to do instead of letting them figure out what is best for them; otherwise known as a right reflex. Like the theory of MI, this project lets the participant drive their learning process and is participant-centered. Motivational Interviewing fits this capstone by four ways: One - Overcoming Nursing resistance, Two - Training nursing professionals with an online MI intervention is approved by APA and in use, additionally shows proficiency and feasibility; Three - Resolving nursing professionals ambivalence of obesity management; and Four - Overcoming nursing professionals opposition to the paradigm shift of thinking and treatment of obesity.

Initially, the DNP student was disappointed with the low number of participants. While the sample size was too small to make generalizations, it may indicate trends. Additionally, small sample size is seen in the literature review among other graduate students performing.

There were four conclusions that came from the study. 1) There was increased knowledge of MI immediately after online training. 2) Motivational interviewing knowledge diminished after one month of the online training. 3) Nursing professionals are resistant to MI communication techniques. 4) Participants are concerned about a paradigm shift in practice.

The project demonstrated an increased knowledge of MI after the online training. The project started with a demographic and pre educational survey to understand where the participant is at in their confidence and use of motivational interviewing. Accepting the participants where they are in their use encourages the participant to be more open to the

educational activity. The project aimed to increase the use of MI in obese patients among RNs and NPs. The literature review revealed that Motivational Interviewing (MI) is effective outside the substance abuse rehab in Primary Care especially with obesity. As expected based on the literature review, the results demonstrated that Nurses and Nurse Practitioners had increased knowledge of MI principles and core skills after completing online training; and that nursing professionals recognised the value of MI counseling methods and facilitated use of MI techniques in practice of obesity management. Thus, the project demonstrated that MI is feasible and effective with those in Primary Care.

Then one month later, the nursing professionals completed an interviewing survey to follow up on their use and confidence of MI. Motivational interviewing knowledge diminished after one month as evidence from the results of surveys showing a significant decrease in MI knowledge and skills, especially those associated with Nursing of compassion, resist arguing, listening, empowering. Only a few MI skills remained positive which were affirmation, reflective, open-ended questions. It is believed that participants retained that part of MI that reflect the training of nursing. Interestingly, this project showed that nursing professionals are resistant to communication technique, and worse, the skills that nursing pride themselves they did poorly.

Nursing professionals were resistant to communication technique, shown by the results of the project, that MI was not embraced by nursing professionals because of timing and unfamiliarity of the theory. The literature revealed similar results.

Similar to research presented these participants thought the same in their lack of skill and confidence performing MI. Even when educating, instructing, and providing support, the participants had concerns about the new paradigm of communication. As with most paradigm



shifts, it takes a long time to change the thinking and execution. The main lesson learned that change is slow. Recommendations for future research would involve confidence and use of Motivational Interviewing in Chronic Care Management.

Being stakeholders, the nursing community is directly involved with the project goal. This project brought awareness to the barriers to obesity management in nursing professionals and how they are or are not using a Motivational interviewing framework. The expected outcomes of the project were that the University of Massachusetts College of Nursing graduate students, who are nurses and nurse practitioners, will demonstrate increased knowledge of Motivational Interviewing principles and core skills after completing online training; and that NP/RN will recognize the value of MI counseling methods and will facilitate the NPs/RNs use of MI techniques in practice of obesity management. Motivational interviewing informs the design of this project. Motivational Interviewing is about accepting where the person/patient is at in their process of health; this is called ambivalence. Additionally, MI empowers the participant to change on their terms. Usually, health professionals tell people what to do instead of letting them figure out what is best for them; otherwise known as a right reflex. Like the theory of MI, this project lets the participant drive their learning process and is participant-centered. The project aimed to increase the use of MI in obese patients among RNs and NPs. As expected the results demonstrated that Nurses and Nurse Practitioners had increased knowledge of MI principles and core skills after completing online training; and that nursing professionals recognised the value of MI counseling methods and facilitated use of MI techniques in practice of obesity management.

### **Conclusion**

Motivational Interviewing is a communication technique used in psychology and has benefits in nursing. It needs to be targeted and learned as a core method of communicating with patients. Using MI is a paradigm shift from telling the patients about their care to engaging them in their care. Showing the importance of MI has momentous effects not just in chronic care management but more importantly a change in therapeutic communication taught in nursing school, and how nurses approach patients.

This project brought awareness to the barriers to obesity management in nurses and nurse practitioners and how they are or are not using a Motivational interviewing framework. The expected outcomes of the project were that the University of Massachusetts College of Nursing graduate students, who are nurses and nurse practitioners, would demonstrate increased knowledge of Motivational interviewing principles and core skills after completing online training; and that nursing professionals would recognize the value of MI counseling methods and will facilitate the NPs and RNs use of MI techniques in practice of obesity management.

Although the project focused on obesity, MI has been used in other areas of chronic illnesses such as diabetes and hypertension. When a nursing professional becomes proficient in using MI, then all patients with chronic disease will benefit from this technique.

Using MI is a paradigm shift from telling the patients about their care to engaging them in their care. Showing the importance of MI has momentous effects not just in chronic care management but more importantly a change in therapeutic communication taught in nursing school, and how nurses approach patients.

The results were shared with the participants by email and a presentation in a nurse practitioner conference in spring 2019.



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Appendix A: Body Mass Index

Body Mass Index Table																																																						
	Normal					Overweight					Obese					Extreme Obesity																																						
BMI	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54																		
Height (inches)	Body Weight (pounds)																																																					
58	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167	172	177	181	186	191	196	201	205	210	215	220	224	229	234	239	244	248	253	258																		
59	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173	178	183	188	193	198	203	208	212	217	222	227	232	237	242	247	252	257	262	267																		
60	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179	184	189	194	199	204	209	215	220	225	230	235	240	245	250	255	261	266	271	276																		
61	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185	190	195	201	206	211	217	222	227	232	238	243	248	254	259	264	269	275	280	285																		
62	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191	196	202	207	213	218	224	229	235	240	246	251	256	262	267	273	278	284	289	295																		
63	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197	203	208	214	220	225	231	237	242	248	254	259	265	270	278	282	287	293	299	304																		
64	110	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204	209	215	221	227	232	238	244	250	256	262	267	273	279	285	291	296	302	308	314																		
65	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210	216	222	228	234	240	246	252	258	264	270	276	282	288	294	300	306	312	318	324																		
66	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216	223	229	235	241	247	253	260	266	272	278	284	291	297	303	309	315	322	328	334																		
67	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223	230	236	242	249	255	261	268	274	280	287	293	299	306	312	319	325	331	338	344																		
68	125	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230	236	243	249	256	262	269	276	282	289	295	302	308	315	322	328	335	341	348	354																		
69	128	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236	243	250	257	263	270	277	284	291	297	304	311	318	324	331	338	345	351	358	365																		
70	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243	250	257	264	271	278	285	292	299	306	313	320	327	334	341	348	355	362	369	376																		
71	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250	257	265	272	279	286	293	301	308	315	322	329	338	343	351	358	365	372	379	386																		
72	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258	265	272	279	287	294	302	309	316	324	331	338	346	353	361	368	375	383	390	397																		
73	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265	272	280	288	295	302	310	318	325	333	340	348	355	363	371	378	386	393	401	408																		
74	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272	280	287	295	303	311	319	326	334	342	350	358	365	373	381	389	396	404	412	420																		
75	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279	287	295	303	311	319	327	335	343	351	359	367	375	383	391	399	407	415	423	431																		
76	156	164	172	180	189	197	205	213	221	230	238	246	254	263	271	279	287	295	304	312	320	328	336	344	353	361	369	377	385	394	402	410	418	426	435	443																		

Source: Adapted from Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report.

(NIH, 1998)

Appendix B: Interpretative Statement Body Mass Index

Weight Category	Body Mass Index	
	Children	Adults
<b>Underweight</b>	Below 5th percentile*	Below 18.5
<b>Healthy weight</b>	5th percentile to less than 85th percentile	18.5 to 24.9
<b>Overweight</b>	85th percentile to less than 95th percentile	25 to 29.9
<b>Obese</b>	95th percentile or above	30 or above

(NIH, 2012)

Appendix C: Five (or Six) A's and Motivational Interviewing for Health Behavior Change  
Counseling

The Five A's are: Ask, Advise, Assess, Assist, and Arrange. (Or Six: Applaud)

Table Descriptions and Examples of the Five A's

"A"	Description	Example
Ask	Clinician asks the patient about weight, nutrition, and exercise.	"Do you exercise?" "What do you typically eat for breakfast?"
Advise	Clinician provides the patient with clear, reliable advice.	"You need to get 30 minutes of exercise a day, five days a week." "I think you need to lose about 20 pounds." "Because of your diabetes and hypertension, it is really important that you exercise."
Assess	Clinician verbally assesses a patient's readiness to change.	"Is attaining a healthier weight something you might want to do in the near future?" "Do you see yourself getting more exercise in the coming months?"
Assist	Clinician assists by providing brief counseling or self-help materials	"What might get in the way of your plans to exercise three times a week?" "How are you feeling about being able to make this change?" "Is your family supportive of your attempts to eat better?"
Arrange applaud"	Clinician arranges for follow-up with a health care professional or community-based resource	"I will make a referral to (Community-Resource), they have an excellent program to help you attain a healthier weight."
*Applaud	It is important for clinicians to recognize even small changes in patient behavior and to acknowledge these changes	"What changes have been successful?"

Adopted from AHRQ 2016; Post, Mainous, Knoll, Diez, & Sexena, 2011

Appendix D: Motivational Interviewing Diagram

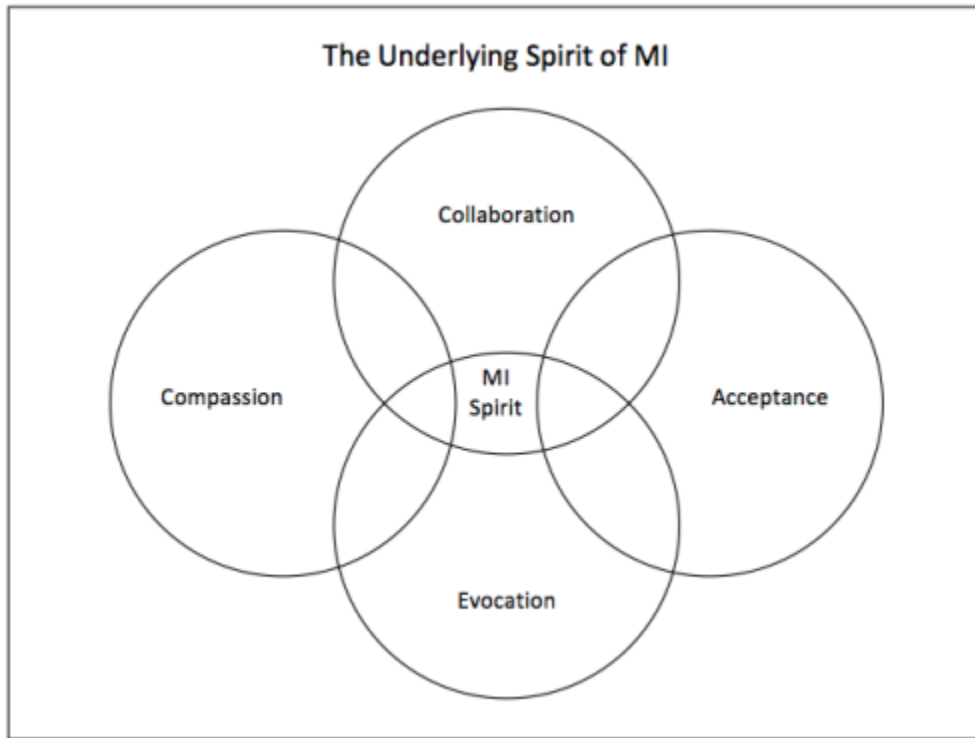


Image recreated from: Miller & Rollnick, 2013

(Miller & Rollnick, 2013)

## Appendix E: Motivational Interviewing For Clinical Practice

## Motivational Interviewing for Clinical Practice

hyperlinks: **Watch Now:**

<https://education.psychiatry.org/Users/ProductDetails.aspx?Activityid=4903&ProductID=4903>,

**View Presentation Slides:** <http://30qkon2g8eif8wrj03zeh041-wpengine.netdna-ssl.com/wp-content/uploads/2017/01/APA-5.9.17-PPT-Slides.pdf>

**Presenters**

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*Sponsor: American Psychiatric Association (APA)*

**Webinar Description**

The webinar provides a clear presentation of Motivational Interviewing that is readily transferable to everyday clinical practice. Motivational Interviewing is a clinical style for engaging patients in treatment, enhancing motivation to reduce substance use, and supporting adherence to recommended behavioral or pharmacological treatments.

The session presents the origins of Motivational Interviewing; describe its fundamental concepts, such as spirit, processes, and core skills; demonstrates the use of Motivational Interviewing; offers practical ways to integrate MI with other psychosocial and pharmacological approaches; and discusses incorporating Motivational Interviewing as communication style in consultative, administrative, supervisory and educational settings. Participants will gain a practical foundation of Motivational Interviewing that can be readily applied and further enhanced with practice.

**Accreditation:** The American Psychiatric Association (APA) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

## Appendix F: Demographic Survey

1. Gender:
  - a. Male
  - b. Female
2. Age Range:
  - a. 18-29
  - b. 30-49
  - c. 50-64
  - d. 65 and older
3. Board Certification
  - a. Nurse Practitioner (NP)
  - b. Nurse (RN)
4. Type of practice
  - a. Primary care
  - b. Specialty Care ( fill in)
  - c. Other (fill in)
  - d. Not currently practicing
5. The number of Patients with BMI > 25 (Overweight and Obese) seen monthly:
  - a. 1-10
  - b. 11-20
  - c. 21-30
  - d. 31-40
  - e. 41-50
  - f. 51-60
  - g. 61-70
  - h. 71-80
  - i. 81-90
  - j. 91-100
  - k. More than 100

## Appendix G: Pre -Assessment Survey

1. On a scale from 1 to 5, my current motivational interviewing skill level is \_\_\_\_\_ (1 meaning very low skill level in motivational interviewing to 5 meaning very proficient in motivational interviewing)
  - a. 1
  - b. 2
  - c. 3
  - d. 4
  - e. 5
  
2. Describe your experience with Motivational Interviewing (MI)
  - a. None
  - b. Minimal – have heard of MI but never had formal training
  - c. Moderate – read articles on MI, attending lecture/workshops, comfortable with new MI skills
  - d. Expert – advance training of MI and commonly used in practice
  
3. How often do you currently use motivational interviewing with your patients?
  - a. Mostly use
  - b. Somewhat use
  - c. Slightly use
  - d. Do not use
  
4. If you do not use MI with your patients, what specifically do you recommend for patients that are BMI>25 (overweight and obese)? (fill in)
  
5. At what level would you rate your knowledge of Motivational Interviewing (MI) for Obesity management before viewing this activity?
  - a. Expert
  - b. Very Knowledgeable
  - c. Somewhat Knowledgeable
  - d. Slightly Knowledgeable
  - e. Novice
  
6. At what level would you rate your knowledge of MI before viewing this activity?
  - a. Expert
  - a. Very Knowledgeable
  - b. Somewhat Knowledgeable
  - c. Slightly Knowledgeable
  - d. Novice
  
7. How likely were you to use MI in your practice before viewing this activity?
  - a. Will use
  - b. Very likely to use
  - c. Somewhat likely to use

- d. Unlikely to use
  - e. Highly unlikely to use
  - f. Will not use
8. Please write two barriers that you believe are important in hindering discussion of weight with patients:
- #1
  - #2
9. Changing patient behavior is (fill in)

## Appendix H: Post Education Survey

After completing the Motivational Interviewing educational activity, please rate (1-7) how likely you are performing the behaviors described below:

...1..... 2.....3.....4..... 5..... 6.....7.....  
NOT AT ALL    A LITTLE    INFREQUENTLY    SOMEWHAT    QUITE A BIT    CONSIDERABLY    EXTENSIVELY

## A. MI Spirit

- a) Collaboration
- b) Acceptance
- c) Evocation
- d) Compassion

## B. MI Skills

- a) Open-ended questions
- b) Affirmations
- c) Reflective
- d) Summaries

## C. Guiding Principles

- a) Resist arguing and persuasion
- b) Understand your patient's motivations
- c) Listen to your patient
- d) Empower your patient

## D. 5A's

- a) Ask
- b) Assess
- c) Advise
- d) Agree
- e) Arrange
- f) Assist

Please describe your Motivational Interviewing skills strengths and weakness.



Appendix I: One Month Survey  
 Motivational Interviewing Clinician Self-Assessment Report  
 (Petrova et al., 2015)

**INSTRUCTIONS:** Listed below are a variety of Motivational Interviewing consistent and inconsistent skill areas. Please rate the degree to which you incorporated any of these strategies or techniques into your session with the teacher. Feel free to write comments on each item about any areas you want to discuss with DNP student. For each item, please rate your best estimate about how frequently you used the strategy using the definitions for each scale point.

1	Not At All...	Never used the strategy
2	A Little...	Used the strategy one time briefly
3	Infrequently...	Used the strategy two times briefly
4	Somewhat...	Used the strategy 3 - 4 times briefly or once or twice extensively
5	Quite a Bit...	Used the strategy 5 – 6 times briefly or thrice extensively
6	Considerably...	Used the strategy for more than half of the session
7	Extensively...	Use of the strategy almost the entire session

**Motivational Interviewing Consistent Items**

**1. MOTIVATIONAL INTERVIEWING STYLE OR SPIRIT:** To what extent did you provide low-key feedback, roll with resistance (e.g., avoiding arguments, shifting focus), and use a supportive, warm, non-judgmental, collaborative approach? To what extent did you convey empathic sensitivity through words and tone of voice, demonstrate genuine concern and an awareness of the teacher's experiences? To what extent did you follow the teacher's lead in discussions instead of structuring the discussion according to your agenda?

...1..... 2.....3.....4..... 5..... 6.....7.....  
 NOT AT ALL    A LITTLE    INFREQUENTLY    SOMEWHAT    QUITE A BIT    CONSIDERABLY    EXTENSIVELY

**Comments:**

**2. OPEN-ENDED QUESTIONS:** To what extent did you use open-ended questions (i.e., questions or requests that elicit more than yes/no responses) to elicit the teacher's perception of his/her problems, motivation, change efforts, and plans? These questions often begin with the interrogatives: "What," "How, and "In what" or lead off with the request "Tell me..." or "Describe..."

...1..... 2.....3.....4..... 5..... 6.....7.....  
 NOT AT ALL    A LITTLE    INFREQUENTLY    SOMEWHAT    QUITE A BIT    CONSIDERABLY    EXTENSIVELY

**Comments:**

**3. AFFIRMATION OF STRENGTHS AND CHANGE EFFORTS:** To what extent did you verbally reinforce the teacher's strengths, abilities, or efforts to change his/her behavior? To what extent did you try to develop the teacher's confidence by praising small steps taken in the

direction of change or by expressing appreciation for the teacher's qualities that might facilitate successful change efforts?

...1..... 2.....3.....4..... 5..... 6.....7....  
 NOT AT ALL A LITTLE INFREQUENTLY SOMEWHAT QUITE A BIT CONSIDERABLY EXTENSIVELY

**Comments:**

**4. REFLECTIVE STATEMENTS:** To what extent did you use reflective listening skills such as repeating (exact words), rephrasing (slight rewording), paraphrasing (e.g., amplifying the thought or feeling, use of analogy, making inferences) or making reflective summary statements of what the teacher says?

...1..... 2.....3.....4..... 5..... 6.....7....  
 NOT AT ALL A LITTLE INFREQUENTLY SOMEWHAT QUITE A BIT CONSIDERABLY EXTENSIVELY

**Comments:**

**5. FOSTERING A COLLABORATIVE ATMOSPHERE:** To what extent did you convey in words or actions that coaching is a collaborative relationship in contrast to one where you are in charge? How much did you emphasize the (higher) importance of the teacher's own decisions, confidence, and perception of the importance of changing? To what extent did you verbalize respect for the teacher's autonomy and personal choice?

...1..... 2.....3.....4..... 5..... 6.....7....  
 NOT AT ALL A LITTLE INFREQUENTLY SOMEWHAT QUITE A BIT CONSIDERABLY EXTENSIVELY

**Comments:**

**6. MOTIVATION TO CHANGE:** To what extent did you try to elicit teacher discussion of change (self-motivational statements) through evocative questions or comments designed to promote greater awareness/concern for the problem, recognition of the advantages of change, increased intent/optimism to change, or elaboration on a topic related to change? To what extent did you discuss the stages of change, help the teacher develop a rating of current importance, confidence, readiness or commitment, or explore how motivation might be strengthened?

...1..... 2.....3.....4..... 5..... 6.....7....  
 NOT AT ALL A LITTLE INFREQUENTLY SOMEWHAT QUITE A BIT CONSIDERABLY EXTENSIVELY

**Comments:**

**7. DEVELOPING DISCREPANCIES:** To what extent did you create or heighten the internal conflicts of the teacher? To what extent did you try to increase the teacher's awareness of a

discrepancy between where his or her life is currently versus where he or she wants it to be in the future?

...1..... 2.....3.....4..... 5..... 6.....7....  
 NOT AT ALL A LITTLE INFREQUENTLY SOMEWHAT QUITE A BIT CONSIDERABLY EXTENSIVELY

**Comments:**

**8. PROS, CONS, AND AMBIVALENCE:** To what extent did you address or explore with the teacher the positive and negative effects or results of his or her substance use and what might be gained and lost by abstinence or reduction in substance use? To what extent did you conduct a decisional balance activity consisting of a cost-benefit analysis or list of pros and cons of substance use? How much did you develop and highlight the teacher's ambivalence, support it as a normal part of the change process, and reflect the teacher the mixed thoughts and feelings that underpin their ambivalence?

...1..... 2.....3.....4..... 5..... 6.....7....  
 NOT AT ALL A LITTLE INFREQUENTLY SOMEWHAT QUITE A BIT CONSIDERABLY EXTENSIVELY

**Comments:**

**9. CHANGE PLANNING DISCUSSION:** To what extent did you develop a change plan with the teacher in a collaborative fashion? How much did you cover critical aspects of change planning such as facilitating discussion of the teacher's self-identified goals, steps for achieving those goals, supportive people available to help the teacher, what obstacles to the change plan might exist, and how to address impediments to change?

...1..... 2.....3.....4..... 5..... 6.....7....  
 NOT AT ALL A LITTLE INFREQUENTLY SOMEWHAT QUITE A BIT CONSIDERABLY EXTENSIVELY

**Comments:**

**10. TEACHER-CENTERED PROBLEM DISCUSSION AND FEEDBACK:** To what extent did you facilitate a discussion of the problems for which the teacher entered treatment identified instead of directing the conversation to the issues identified by you but not by the teacher? To what extent did you provide feedback to the teacher about his or her substance use or problems in their classroom other life areas only when solicited by the teacher or when you explicitly sought the teacher's permission first?

...1..... 2.....3.....4..... 5..... 6.....7....  
 NOT AT ALL A LITTLE INFREQUENTLY SOMEWHAT QUITE A BIT CONSIDERABLY EXTENSIVELY

**Comments:**

**Motivational Interviewing Inconsistent Items**

**11. UNSOLICITED ADVICE, DIRECTION-GIVING, OR FEEDBACK:** To what degree did you provide unsolicited advice, direction, or feedback (e.g., offering specific, concrete suggestions for what the teacher should do)? To what extent was your style one of instructing the teacher how to be successful?

...1..... 2.....3.....4..... 5..... 6.....7....  
 NOT AT ALL A LITTLE INFREQUENTLY SOMEWHAT QUITE A BIT CONSIDERABLY EXTENSIVELY

**Comments:**

**12. DIRECT CONFRONTATION OF CLIENT:** To what extent did you directly confront the teacher about his or her failure to acknowledge problems or concerns related to their classroom/students substance use or other behavioral difficulties (e.g., psychiatric symptoms, lying, and non-compliance with treatment)? To what extent did you directly confront the teacher about not taking steps to try to change identified problem areas?

...1..... 2.....3.....4..... 5..... 6.....7....  
 NOT AT ALL A LITTLE INFREQUENTLY SOMEWHAT QUITE A BIT CONSIDERABLY EXTENSIVELY

**Comments:**

**13. ASSERTING AUTHORITY:** To what extent did you verbalize clear conclusions or decisions about what form of classroom management would be best for the teacher? How much did you warn the teacher that recovery progress would be impeded unless the teacher followed certain steps or guidelines in treatment? To what extent did you tell the teacher about "what works" best in treatment or the likelihood of a poor outcome if the teacher tried to douse his/her treatment strategies?

...1..... 2.....3.....4..... 5..... 6.....7....  
 NOT AT ALL A LITTLE INFREQUENTLY SOMEWHAT QUITE A BIT CONSIDERABLY EXTENSIVELY

**Comments:**

**14. CLOSED-ENDED QUESTIONS:** To what extent did you ask questions that could be answered with a 'Yes' or 'No' response or that sought very specific answers, details, or information about the teacher's past or current behavior and circumstances? These questions typically begin with the interrogative stems: "Could/can you...", "Do/did you...", "Are you...", or "Have you..."

...1..... 2.....3.....4..... 5..... 6.....7....  
 NOT AT ALL A LITTLE INFREQUENTLY SOMEWHAT QUITE A BIT CONSIDERABLY EXTENSIVELY

**Comments:**

Appendix J: Post Interview Questions

1) Have you used the technique of Motivational Interviewing with patients that want to lose weight? Yes or No

2) If yes, described the interactions of you, the patients and the outcome.

Appendix K: Cost Table

Item	Cost
MI Intervention online	\$0
Online link REDCap	\$0
Participation Compensation -Gift card \$10/participate; \$50/drawing and Postage	Gift Card =\$150; Postage =\$6 Total =\$156
SAS Program/Hiring Statistician	Program= \$64; Statistician =\$540 Total = \$604
Total Cost =	\$760

Appendix L: Timeline

Process Objectives	Participants	Dates
Development of pre-post surveys and educational training intervention	DNP student and UMass Advisor/Mentor	August 2018
Obtaining IRB approval	DNP student and IRB	November 2018
Advertise for participants	DNP student and the leadership UMass CON	January 2019
Obtain participants	DNP student and Nurses	January 2019
Administer Demographic Survey and Pre-Assessment Survey	DNP student and Nurses	January 2019
Conduct educational intervention	DNP student and Nurses	January 2019
Administer Post Education Survey	DNP student and Nurses	January 2019
Administer 1-month Post test	DNP student and Nurses	February 2019
Write up the results of the project and submit a completed manuscript	DNP student and UMass Advisor	March April 2019
Present Poster board presentation	DNP student and Nurses Association Conference participants	April 2019

## Appendix M: IRB Approval

## UMass IRB letter

**University of Massachusetts Amherst**  
108 Research Administration Bldg.  
70 Butterfield Terrace Amherst, MA 01003-9242

**Research Compliance**  
**Human Research Protection Office (HRPO)**  
Telephone: (413) 545-3428  
FAX: (413) 577-1728

**Certification of Human Subjects Approval**

**Date:** November 20, 2018  
**To:** Wendy Sergeant, Nursing  
**Other Investigator:** Donna Zucker, Nursing  
**From:** Lynnette Leidy Sievert, Chair, UMASS IRB

Protocol Title: Utilizing Motivational Interviewing to Encourage Weight Loss in Primary Care  
Protocol ID: 2018-5092  
Review Type: EXPEDITED - NEW  
Paragraph ID: 7  
Approval Date: 11/20/2018  
Expiration Date: 10/25/2019  
OGCA #:

This study has been reviewed and approved by the University of Massachusetts Amherst IRB, Federal Wide Assurance # 00003909. Approval is granted with the understanding that the investigator(s) are responsible for:

Revisions - All changes to the study (e.g., protocol, recruitment materials, consent form, additional key personnel), must be submitted for approval in e-protocol before instituting the changes. New personnel must have completed CITI training.

Renewals - All renewals need to be submitted at least two weeks prior to the expiration date listed on this approval letter.

Final Reports - Notify the IRB when your study is complete by submitting a Final Report Form in e-protocol.

Consent forms - A copy of the approved consent form (with the IRB stamp) must be used for each participant (Please note: Online consent forms will not be stamped). Investigators must retain copies of signed consent forms for six (6) years after the close of the grant, or three (3) years if unfunded.

Use only IRB-approved study materials (e.g., questionnaires, letters, advertisements, flyers, scripts, etc.) in your research.

Unanticipated problems involving risks to participants or others - All such events must be reported in e-protocol as soon as possible, but no later than five (5) working days.

Please contact the Human Research Protection Office if you have any further questions. Best wishes for a successful project.

## Appendix N: Informed Consent to Participant in a Project

**Project Title:** Utilizing Motivational Interviewing to Encourage Weight Loss in Primary Care

**DNP student: Wendy Sergeant, APRN-BC, PHMNP-BC, CAGS-PSYCH NP, MSN, MA, a student at the University of Massachusetts- Amherst**

This project is being conducted for a capstone project as a part of the requirements of the student's Doctorate of Nursing Practice program. The DNP student is not performing as an employee of the University of Massachusetts – Amherst (UMass).

**Introduction**

As a student of the College of Nursing (CON) and a Registered Nurse (RN) or Nurse Practitioner (NP), you are invited to participate in a quality improvement project focusing on communication technique of motivational interviewing (MI) to encourage weight loss in primary care. As a potential participant you need to know that:

- Taking part is entirely voluntary.
- You can withdraw at any time without penalty.
- Your participation is confidential.

**What is the purpose of this project?** The purpose of this project is to improve knowledge on MI principles and core skills after completing online training; recognize the value of MI counseling methods; and will facilitate the use of MI techniques in practice of obesity management.

**Why was I asked to be included in the study of the outcomes of this project?** Nurse Practitioners (NP) and Nurses (RN) in Primary care are in significant roles to address the issue of obesity with patients. Because you are an NP/RN, you are being asked to participate in this project. You are eligible to participate if you are at least 18 years of age and a board-certified nurse or nurse practitioner.

**What will I be asked to do to be part of the project and how long will it last?** Please read the informed consent and then decided if you would like to participate in this project. As a participant in the project, you will be asked to:

1. Complete a demographic survey and pre-assessment survey; taking approximately less than 30 minutes to complete.
2. Participate in an educational session that will be provided online and take a post-test survey lasting about 90 minutes.
3. One month post –educational activity, complete another survey occurring over 30 minutes.
4. All participants will be asked after the last survey about their use of MI lasting 10 minutes.
5. The participants will be asked of a time commitment of one hundred sixty minutes.

You do not have to participate in this project. If you decided not to participate, there is no penalty. You are welcome to view the educational presentation.



**What are the risks and discomfort?** There are no known physical risks for the participants. There exists a possibility of a breach of confidentiality. It is not possible to identify all the potential risks in research procedures, but the DNP student has taken reasonable safeguards to minimize any known risks. Your participation will be confidential, and only the DNP student will conduct the surveys. If you experience distress, you may contact the DNP student, her advisor or IRB.

**What are the benefits of being part of this project?** There will be no direct benefits to you for participating in this project. You might gain information related to Motivational Interviewing.

**Who will see the information that is obtained?** Your information will be kept confidential, and only the DNP student will be collecting data. Steps are taken to minimize the possibility of a breach, by labeling all participant data, such as name, title, and email addresses and surveys with a code. A master key that links names and codes will be maintained in a separate and secure password protected file. The master key will be destroyed six years after the close of the study. Any computer hosting such files will also have password protection to prevent access by unauthorized users. Only the members of the DNP student's staff will have access to the passwords. At the conclusion of this study, the DNP student may publish her findings. Information will be presented in summary format, and an individual participant will not be identified in any publications or presentations.

**Will I receive any rewards for taking part in this study?** There is no monetary reward or cost for being part of this project. All participants will be entered in a drawing to win a \$50 gift card for initial participation, and given \$10 gift card for completing the one month survey. Participants will receive education on Motivational Interviewing.

**What if I have questions?** For any questions or concerns, please feel free to contact the DNP student, Wendy Sergeant at 732-742-9067, email: wsergeant@umass.edu or alternate email: wsergeant@gmail.com. Faculty Chair: Dr. Donna Zucker, RN, Ph.D., FAAN at College of Nursing, Skinner Hall RM 020, University of Massachusetts – Amherst, 413-545-1343 email: donna@acad.umass.edu. If you have any questions about your rights as a volunteer in this project, contact the Human Research Protection Office/University of Massachusetts- Amherst, 413- 545-3428, Mass Venture Center, 100 Venture Way, Suite 116, Hadley, MA, 01035.

## Consent

I have read the above information and have been given the opportunity to ask questions. By signing this form, I am consenting to participate in the study of the outcomes of the project: Utilizing Motivational Interviewing to Encourage Weight Loss in Primary Care.

I have received a copy of this consent form for my records.

Participant Name: (Please Print) \_\_\_\_\_

Participant Signature and Date: \_\_\_\_\_

DNP student Name: Wendy Sergeant

DNP student Signature and Date: \_\_\_\_\_

In advance, **Thank-you**, for taking part in this project. If you wish to receive a copy of the results, please email Wendy Sergeant at [wsergeant@gmail.com](mailto:wsergeant@gmail.com).

Table 1

*Age: Frequencies*

		Frequency	Percent	Valid Percent	Cumulative Percent
Age	18-29 years	1	10.0	10.0	10.0
	20-49 years	6	60.0	60.0	70.0
	50-64 years	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Table 2

*Demographic: Percentages and Distribution of Answers*

Question	Answer Choice	Percentages of Total, Distribution of Answers
Gender	Male	0% (N=0)
	Female	100% (N=10)
Age	18-29	10% (N=1)
	30-49	60% (N=6)
	50-64	30% (N=3)
	65 and older	0% (N=0)
Board Certification	Nurse Practitioner	40% (N=4)
	Nurse	60% (N=6)
Number of Patients with BMI > 25 (Overweight an Obese) seen monthly	1-10	30% (N=3)
	11-20	0% (N=0)
	21-30	20% (N=2)
	31-40	10% (N= 1)
	41-50	0% (N=0)
	51-60	0% (N=0)
	61-70	20% (N=2)
	71-80	0% (N=0)
	81-90	0% (N=0)
	91-100	0% (N=0)
	More than 100	20% (N=2)

N= 10

Table 3  
*Pre Educational Survey: Distribution of Answers*

Questions #	Scoring	Distribution of Answers
Current MI Skill level	1-5 1 = very low skill level 5 = very proficient	1 Very Low N=1 10% 2 Slightly N=3 30% 3 Somewhat N=4 40% 4 Knowledgeable N=2 20% 5 Very Proficient N=0
Experience MI	Minimal = never had formal training Moderate = read articles on MI, attending lecture/workshops, comfortable with new MI skills Expert = advance training of MI and commonly used in practice	None N=1 10% Minimal N=4 40% Moderate N=5 50% Expert N=0
Use of MI	Mostly use Somewhat use Slightly use Do not use	Mostly use N=0 Somewhat use N=4 40% Slightly use N=4 40% Do not use N=2 20%
Knowledge of MI	Expert Very Knowledgeable Somewhat Knowledgeable Slightly Knowledgeable Novice	Expert N=0 Very N=2 20% Somewhat N=3 30% Slightly N=4 40% Novice N=1 10%
Knowledge of MI for Obesity	Expert Very Knowledgeable Somewhat Knowledgeable Slightly Knowledgeable Novice	Expert N=0 Very N=1 10% Somewhat N=0 Slightly N=4 40% Novice N=5 50%
Likely use MI before this Activity	Will use Very likely to use Somewhat likely to use Unlikely to use Highly unlikely to use Will not use	Will use N=2 20% Very Likely N=3 30% Somewhat N=2 20% Unlikely N=2 20% Highly unlikely N=0 Not use N=1 10%
Barriers (2)	Time issue Provider issues of offending pts Developing a relationship Lack of knowledge to help pts Pts not following through	N= 3 30% N=6 60% N=6 60% N=2 20% N=4 40%
Changing Patient is....	Difficult/Challenging Possible/Collaboration	N=7 70%

		N=3 30%
Recommendations for weight loss before this activity	Eat healthier and more activity	N=6 (80%)
	Defer to another resource	N=2 (20%)

---

Table 4  
*Post Educational Survey:  
 Distribution of Answers*

Questions	Distribution of Answers						
	(1) NOT AT ALL	(2) A LITTLE	(3) INFREQUENTLY	(4) SOMEWHAT	(5) QUITE A BIT	(6) CONSIDERABLY	(7) EXTENSIVELY
MI Spirit: Collaboration	0	0	N=3 42.9%	N=4 57.1%	0	0	0
MI Spirit: Acceptance	0	0	N=2 28.6%	N=2 28.6%	N=3 42.9%	0	0
MI Spirit: Evocation	0	N=1 16.7%	0	N=2 33.3%	N=2 33.3%	N=1 16.7%	0
MI Spirit: Compassion	0	N=1 14.3%	0	N=2 28.6%	0	N=2 28.6%	N=2 28.6%
MI Skills: Open-Ended Questions	0	0	0	N=2 28.6%	N=1 14.3%	N=1 14.3%	N=3 42.9%
MI Skills: Affirmations	0	0	N=1 14.3%	N=1 14.3%	N=3 42.9%	N=2 28.6%	0
MI Skills: Reflective	0	0	0	N=3 42.9%	N=3 42.9%	N=1 14.3%	0
MI Skills: Summaries	0	0	N=1 14.3%	N=2 28.6%	N=2 28.6%	N=2 28.6%	0
Guiding Principles: Resist Arguing and Persuasion	0	0	0	N=3 42.9%	N=3 42.9%	N=1 14.3%	0
Guiding Principles: Understand Your Patient's Motivations	0	0	0	0	N=3 42.9%	N=4 57.1%	0
Guiding Principles: Listen to Your Patient	0	0	0	0	0	N=6 85.7%	N=1 14.3%
Guiding Principles: Empower Your Patient	0	0	0	N=2 28.6%	N=2 28.6%	N=2 28.6%	N=1 14.3%
5A's: Ask	0	0	N=1 14.3%	N=1 14.3%	N=2 28.6%	N=2 28.6%	0
5A's: Assess	0	0	N=1 14.3%	N=1 14.3%	N=2 28.6%	N=2 28.6%	N=1 14.3%

5A's: Advise	0	0	N=1 14.3%	N=3 42.9%	N=1 14.3%	N=1 14.3%	N=1 14.3%
5A's: Agree	0	0	N=1 14.3%	N=1 14.3%	N=1 14.3%	N=1 14.3%	N=1 14.3%
5A's: Arrange	0	0	N=1 14.3%	N=3 42.9%	N=2 28.6%	0	N=1 14.3%
5A's: Assist	0	0	N=1 14.3%	N=2 28.6%	N=1 14.3%	N=1 14.3%	N=1 14.3%

The skills strengths were described as engaging, listening, assessing, affirming, and accepting.

The weaknesses were described as giving advice and directing rather than empowering the patients, and not connecting with the patients.

Table 5  
*One Month Survey: Motivational Interviewing Clinician Self-Assessment Report:  
 Distribution of Answers*

Questions	Distribution of Answers						
	(1) NOT AT ALL	(2) A LITTLE	(3) INFREQUE NTLY	(4) SOME- WHAT	(5) QUITE A BIT	(6) CONSIDER ABLY	(7) EXTENSIV ELY
1. Motivational Interviewing Style or Spirit	0	0	N=1 14.3%	N=2 28.6%	0	N=3 42.9%	N=1 14.3%
2. Open-Ended Questions	0	0	0	N=3 42.9%	N=1 14.3%	N=3 42.9%	0
3. Affirmation of Strengths and Change Efforts	0	N=1 14.3%	0	N=1 14.3%	N=3 42.9%	N=2 28.6%	0
4. Reflective Statements	0	N=1 14.3%	N=1 14.3%	N=1 14.3%	N=2 28.6%	N=2 28.6%	0
5. Fostering a Collaborative Atmosphere	0	0	N=1 14.3%	N=3 42.9%	N=1 14.3%	N=2 28.6%	0
6. Motivation to Change	0	0	N=1 14.3%	N=3 42.9%	N=2 28.6%	N=1 14.3%	0
7. Developing Discrepancies	N=1 14.3%	N=1 14.3%	N=2 28.6%	N=3 42.9%	0	0	0
8. Pros, Cons, and Ambivalence	N=1 14.3%	N=1 14.3%	N=3 42.9%	N=1 14.3%	N=1 14.3%	0	0
9. Change Planning Discussion	0	0	N=1 14.3%	N=3 42.9%	N=3 42.9%	0	0
10. Teacher-Centered Problem Discussion and Feedback	N=1 14.3%	N=1 14.3%	N=2 28.6%	N=1 14.3%	N=2 28.6%	0	0
11. Unsolicited Advice, Direction-Giving, or Feedback	N=1 14.3%	N=1 14.3%	N=1 14.3%	N=2 28.6%	N=1 14.3%	N=1 14.3%	0
12. Direct	N=1	N=4	N=1	N=1	0	N=1	0



Confrontation of Client	14.3%	57.1%	14.3%	14.3%		14.3%	
13. Asserting Authority	N=2 28.6%	N=1 14.3%	N=1 14.3%	N=2 28.6%	N=1 14.3%	0	0
14. Closed-Ended Questions	N=1 14.3%	N=4 57.1%	0	N=1 14.3%	N=1 14.3%	0	0

Table 6: Pearson Correlation Two Tail: One Month Survey Motivational Interviewing Clinician Self Assessment Report

		MIstyle	OpenEnd	Affirm	Reflective	Collab	Motiv	Discrep	Proscons	ChangeDisc
MIstyle	Pearson	1								
	Correlation									
	Sig. (2-tailed)									
	N	7								
OpenEnd	Pearson	.455	1							
	Correlation									
	Sig. (2-tailed)	.304								
	N	7	7							
Affirm	Pearson	.766*	.725	1						
	Correlation									
	Sig. (2-tailed)	.045	.065							
	N	7	7	7						
Reflective	Pearson	.420	.882**	.867*	1					
	Correlation									
	Sig. (2-tailed)	.349	.009	.011						
	N	7	7	7	7					
Collab	Pearson	-.158	.588	.335	.611	1				
	Correlation									
	Sig. (2-tailed)	.735	.165	.463	.145					
	N	7	7	7	7	7				
Motiv	Pearson	-.050	.683	.354	.645	.947**	1			
	Correlation									
	Sig. (2-tailed)	.915	.091	.437	.117	.001				
	N	7	7	7	7	7	7			
Discrep	Pearson	.394	.289	.523	.477	.382	.444	1		
	Correlation									
	Sig. (2-tailed)	.381	.530	.228	.279	.398	.319			
	N	7	7	7	7	7	7	7		
Proscons	Pearson	-.176	-.258	-.374	-.342	-.228	-.265	.224	1	
	Correlation									
	Sig. (2-tailed)	.705	.576	.408	.453	.623	.566	.630		
	N	7	7	7	7	7	7	7	7	
ChangeDisc	Pearson	.559	.661	.411	.458	-.028	.258	.191	-.171	1
	Correlation									
	Sig. (2-tailed)	.192	.106	.360	.301	.953	.576	.682	.714	



ChangeDisc	Pearson Correlation					
	Sig. (2-tailed)					
	N					
Teacher	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	7				
Unsolicit	Pearson Correlation	.250	1			
	Sig. (2-tailed)	.589				
	N	7	7			
Confront	Pearson Correlation	.568	-.084	1		
	Sig. (2-tailed)	.183	.859			
	N	7	7	7		
Authority	Pearson Correlation	-.051	-.026	.449	1	
	Sig. (2-tailed)	.914	.955	.312		
	N	7	7	7	7	
ClosedEnded	Pearson Correlation	.148	.536	.197	-.108	1
	Sig. (2-tailed)	.751	.215	.672	.817	
	N	7	7	7	7	7

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\*.. Correlation is significant at the 0.01 level (2-tailed).

Table 7  
*One Month: Interview Questions  
 Responses, Percentages, Answers*

	Responses	
Use of Motivational Interviewing with patients that want to lose weight	YES N=2 28.6%	NO N=5 71.4%
The interactions of clinician, patients, outcomes	“Discussed reasons for losing weight (driving factors), goal setting, and plans for follow up, plans for lapses. Pt lost weight and felt motivated to exercise and go further.”	