Southern California CSU DNP Consortium

California State University, Fullerton
California State University, Long Beach
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MOTIVATIONAL INTERVIEWING TRAINING FOR MENTAL HEALTH CARE
TEAMS: FOCUS ON WEIGHT MANAGEMENT

A DOCTORAL PROJECT

Submitted in Partial Fulfillment of the Requirements

For the degree of

DOCTOR OF NURSING PRACTICE

By

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ABSTRACT

Background: Individuals with schizophrenia have a high rate of obesity, which contributes to increased health morbidities. Several factors contribute to the weight gain including unhealthy eating habits, sedentary lifestyle, and side effects of antipsychotic medications. Traditional weight loss interventions have been healthy eating and exercise combined with cognitive behavioral therapy. Mental health care providers could be trained to provide motivational interviewing (MI), which is an evidence-based intervention, to individuals for weight gain prevention.

Objectives: In this project, the first objective was to develop and implement a brief weight management MI training module for a care team, consisting primarily of psychiatric technicians, at a community-based mental health treatment agency in the County of Los Angeles. The second objective was to evaluate the care team's level of knowledge and performance in delivering the MI intervention to obese individuals with schizophrenia at their clinics.

Methods: A newly developed 4-hour educational training module was given to seven psychiatric technicians who were available from the participating care teams. Participants were surveyed pre- and immediately post-training as well as four-months post-implementation.

Results: At baseline, all of the participants agreed that cognitive behavior therapy could be an effective weight loss intervention for individuals with schizophrenia. On the

knowledge test (10 items), mean total score of correct responses increased from 8.43 (SD = .79) at baseline to 9.29 at immediately post-test (SD = .76), $t(6)$ = -2.121, p = .078. The care team's performance at four-months displayed changes in participants' attributions of difficulty with weight gain (more reported side effects from medications and fewer reported poor diet choice) as well as positive responses to continue using MI intervention skills in the clinical setting.

Conclusions: This is the first known project to focus on a care team with psychiatric technicians who were taught MI interventions focused on weight loss for obese adult individuals with schizophrenia. Training the care team to provide weight loss MI interventions for obese adult individuals with schizophrenia was achievable, feasible, and possibly effective. Future goals are to provide weight loss MI training to care team members at the other clinics of the community-based mental health agency and to evaluate patient outcomes related to weight.

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BACKGROUND

Schizophrenia is a debilitating and costly disease that affects individuals from all demographics (Crump, Winkleby, Sundquist, & Sundquist, 2013). In 2013, an estimated $155.7 billion -- with $37.7 billion alone in direct health care costs -- was allocated towards the treatment of schizophrenia (Cloutier et al., 2016). Individuals with schizophrenia have a significantly shorter life expectancy than the general population with an average lifespan of 8.2 years less than those without mental illness (Druss, Zhao, Von Esenwein, Morrato, & Marcus, 2011; Walker, McGee, & Druss, 2015). Individuals with schizophrenia have increased rates of obesity, defined as having a body mass index (BMI) of 30 kg/m2 or higher, compared to those without the disease (Allison et al., 2009). Obesity results in health morbidities associated with a higher risk for cardiovascular disease and diabetes leading to increased mortality of individuals with schizophrenia (Brown, Goetz, Hamera, & Gajewski, 2014; Hjorth, Davidsen, Kilian, & Skrubbeltrang, 2014; Masa-Font et al., 2015; Ratliff et al., 2012). Cardiovascular disease is the most common cause of death among those with schizophrenia (Druss et al., 2011; Walker et al., 2015).

Several factors contribute to weight gain for individuals with schizophrenia. These include unhealthy eating habits, sedentary lifestyle, and side effects of antipsychotic medications (Hjorth et al., 2014; Masa-Font et al., 2015; Naslund et al., 2016). Just like other persons, many individuals with schizophrenia practice unhealthy eating habits and make poor dietary choices, such as choosing inexpensive unhealthy foods, and consuming few fruits and vegetables (Brown et al., 2014; Ratliff et al., 2012). Negative symptoms of schizophrenia include amotivation, which adds to the sedentary

lifestyle of obese individuals with schizophrenia (Ratliff et al., 2012). Antipsychotic

medications are the main treatment for schizophrenia; however, the side effects of

induced weight gain may increase the risks of other medical conditions (Bak, Fransen,

Janssen, Os, & Drukker, 2014; Riordan, Antonini, & Murphy, 2011). In fact, the weight

gain secondary to antipsychotic medications is one of the main reasons why individuals

with schizophrenia stop taking their medications; unfortunately, this is associated with

disease relapse and increased hospitalizations (Usher, Park, & Foster, 2013; Wong, Chen,

Lui, & Tso, 2011).

Since obesity is associated with other physical comorbidities, traditional

interventions used to reduce obesity in individuals with schizophrenia typically focus on

healthy eating, physical exercise, cognitive behavioral therapy, or a combination of these

(Hjorth et al., 2014). In a systematic review, Naslund et al. (2017) found that lifestyle

interventions involving behavioral change, diet, and exercise were useful in weight loss

and thus may be helpful in reducing cardiovascular risks. Cognitive behavioral therapy is

also an effective intervention to help obese individuals with schizophrenia maintain or

lose weight (Magni et al., 2017).

Mental health care providers and ancillary staff play a critical role for obese

individuals with schizophrenia by providing medical and psychological care. They

collaborate with the treatment team in planning care for patients through education,

psychotherapy, and medication support (American Psychiatric Nurses Association

[APNA], 2018). One form of psychotherapy that mental health teams could provide is

motivational interviewing (MI), which is a robust evidence-based intervention that is a

person-centered counseling technique. MI is time-limited and geared to persuade or alter

a person's motivation and commitment to change, which is expressed as collaborative, evocative, and respectful to the individual's autonomy (Miller & Rollnick, 2013). MI is a communication style that uses therapeutic listening skills to guide the individual's motivation to change (Ragaisis, 2017). The methods of MI were initially applied to individuals with substance abuse but have been successful for behavioral changes in smoking cessation, in ensuring safe sex, and in weight loss programs (Schumacher, Madson, & Nilsen, 2014). Most MI interventions for weight management have been administered by counselors, dieticians, and primary care nurses for obese individuals with medical problems (Armstrong et al., 2011; Barnes & Ivezaj, 2015). However, mental health care providers have been trained to provide MI to patients with eating disorders, poor medication adherence, and weight gain prevention (Dray, Gilchrist, Singh, Cheesman, & Wade, 2014; McKenzie & Chang, 2015; Park, Usher, & Foster, 2011).

Purpose Statement and Project Objectives

The purpose of this Doctor of Nursing (DNP) project was to develop, deliver, and evaluate the use of a MI educational training module for mental health care provider staff that is comprised of licensed vocational nurses (LVNs) and psychiatric technicians (PTs), who the author will refer to as the care team, at a community-based mental health treatment agency in the County of Los Angeles. The educational module contained content to assist the care teams' use of MI interventions focused on weight loss interventions for adult individuals with schizophrenia who have obesity.

The first objective was to develop and implement a weight management MI training educational module for the care team. The second objective was to evaluate the care team's level of knowledge and performance in delivering the MI intervention.

Supporting Framework

In creating a practice change, the use of research-driven framework can guide the plans for change, which should be transferable from theory into practice and provide direction on how to implement the change (Bonnel & Smith, 2014). The Ottawa Model of Research Use (OMRU), developed by Logan and Graham (1998), is a framework based on change theories and evidence-based literature. The OMRU framework could guide the development to support the quality of care required in an organization's practice setting over time (Graham & Logan, 2004; Rycroft-Malone & Bucknall, 2010). The OMRU framework was applicable for this project because it guided the MI training program for the care team who provided services to adult obese individuals with schizophrenia at the community-based mental health treatment agency.

The OMRU model contains six elements that are necessary for research transfer. The elements of OMRU are (a) the research-based innovation or practice change, (b) potential adopters or those who will apply the change, (c) the practice environment where the change will occur, (d) implementation of interventions, (e) adoption of the innovation or trying, using, and changing as necessary, and (f) outcomes derived from the innovation or the effects of the practice change (Graham & Logan, 2004; Rycroft-Malone & Bucknall, 2010).

The OMRU is a planned action model, which provides direction on how the practice change will occur. The knowledge transfer guided by the OMRU utilizes a

process of assessing, monitoring, and evaluating the elements. The first step is to assess

the innovation itself, potential adopters, and the practice environment. The assessment

will help identify the barriers or supporters when integrating the innovation into practice

and formulate the implementation strategies. Next is to monitor the implementation

interventions and adoption process. The ongoing monitoring is necessary to confirm if

there are no new barriers, the implementation strategies are working as planned, and the

modification of the follow-up strategies are needed. Lastly, outcomes must be identified

and tracked to determine if the innovation should continue in practice and assure that

professional standards have been fulfilled (Graham & Logan, 2004; Rycroft-Malone &

Bucknall, 2010).
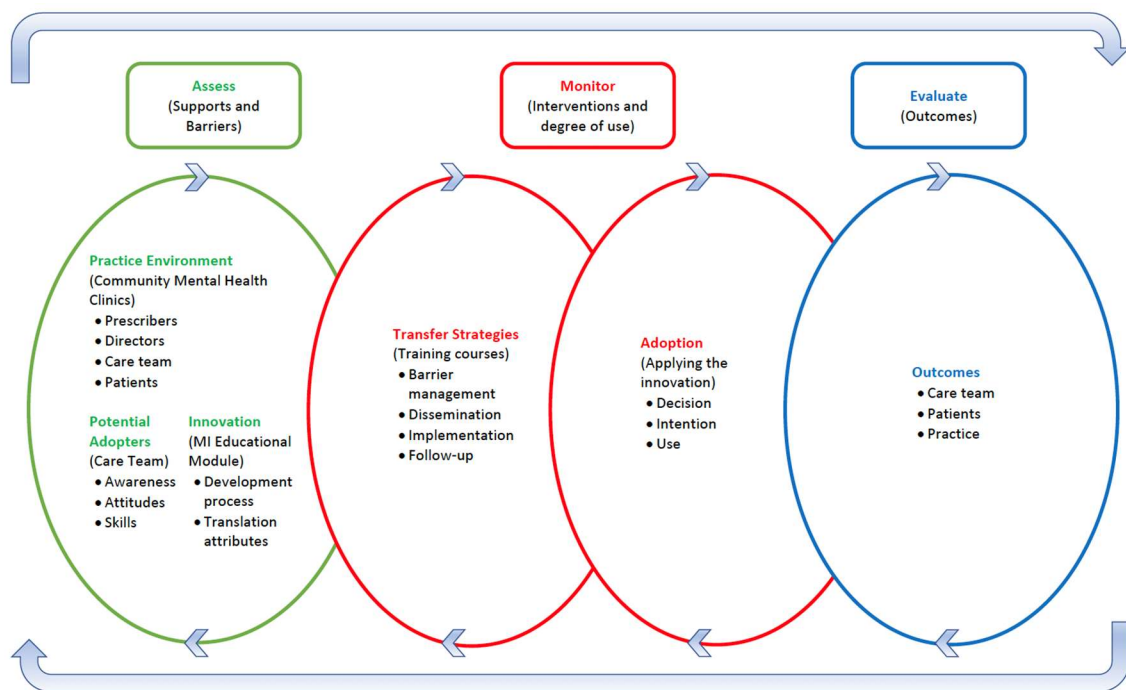
Figure 1. The Ottawa Model of Research Use applied to the motivational interviewing training for mental health care teams with the focus on weight management.

The OMRU Six-Step Process

Graham and Logan's (2004) six-step process demonstrates how the OMRU could be used by a change agent to implement a new innovation at the practice environment. The first step is to get started. The change agent should identify the individuals with authority who can approve the changes and the available resources needed to implement the innovation. The change agent should then assign the individuals accountable for implementing the innovation (Graham & Logan, 2004).

The second step is to clarify the innovation, which is something new for those who will use it. The change agent should communicate to all stakeholders, the administration, and potential adopters on what the innovation is and how will it be implemented (Graham & Logan, 2004).

The third step is to assess the innovation, the potential adopters, and the practice environment for barriers and supports. The change agent will perform a situational assessment to identify factors that could impede the adoption of the innovation and identify possible supporters. The change agent should identify the potential adopters' perceptions and biases toward the innovation. The change agent must demonstrate methods to overcome the possible barriers in implementing the innovation (Graham & Logan, 2004). During this step, the change agent will assess what currently is being done in the work setting to address the problem of obesity in schizophrenia.

The fourth step is to select and monitor implementation interventions. The change agent will plan the appropriate approach to implement the intervention, which is the new innovation. The change agent will promote and implement the interventions, evidence-

based strategies, and follow-up activities (Graham & Logan, 2004; Rycroft-Malone & Bucknall, 2010).

The fifth step is to monitor the adoption process. The change agent will decide how the practice evolves and innovation increases in the organization by assessing the adequacy of the strategies, needed innovation changes, or new approaches required (Graham & Logan, 2004).

The sixth step is to evaluate selected outcomes for the project. The change agent will decide on how the innovation outcomes will impact the stakeholders and organization. An evaluation of the usefulness of the innovation will determine if the adoption was merited (Graham & Logan, 2004).

Implementing the OMRU in this Project

The OMRU steps guided the development and implementation of the weight management MI educational module at the community-based mental health treatment agency. In this project, the innovation was implementation of MI in the practice setting by psychiatric technicians and licensed vocational nurses trained to use MI. The training of the care team using the MI educational module focused on using MI strategies to promote weight loss strategies for adult obese individuals with schizophrenia. The change agent was this author, who created the MI module and delivered the training. Two MI training experts and an educational specialist approved the MI educational module and curriculum. The potential adopters of the innovation were the care team at the community-based mental health treatment agency. The author assessed the readiness and trainability of the care team.

The author made an innovation assessment by surveying the care team regarding the implementation of MI in the practice setting, which was the clinics within the community-based mental health treatment agency. The assessment focused on the care team's perception of obesity in schizophrenic individuals, level of therapeutic interventions knowledge for weight loss strategies, current practices, and readiness to learn MI as an intervention tool. The practice environment assessment included the practice change in the clinic, prescribing physician, program director, clinicians, and care team. The importance of collaboration from all involved helped diminish the possible barriers or strengthen existing support systems to promote the MI intervention.

The author assessed the care team's readiness to implement the MI intervention in the clinics through a post-training questionnaire. The barriers were determined and strategies to address them were developed. Anticipated barriers were the willingness of care team to participate in a practice change, lack of training time approval by supervisors, and productivity billing of the implementation. To overcome these barriers, the author first communicated to the care team the background and importance of the project. Second, he explained to the care team supervisors the benefits of the weight management MI in reducing the associated health morbidities of obesity in adult individuals with schizophrenia. Third, he educated the care team on how the MI intervention could be translated to the progress notes and increase the care their productivity time.

Members of the care team were trained in the weight management MI educational module created by the author using evidence-based literature. The training topics included weight loss management practices such as MI strategies, therapeutic

communication techniques, translating MI interventions, and documentation. The primary objective was to have care team members apply the weight management MI intervention and continue its use in the agency.

The outcome evaluation was dependent on the number of care team members that implement the MI intervention. The care team's comprehension of the MI training was measured with a pretraining knowledge survey, pre and post-training questionnaire, and four-month post implementation survey. The author anticipates having a Phase Two after the completion of the DNP project, which will evaluate if the weight management MI intervention improves patient outcomes and reduce obesity in adult individuals with schizophrenia who received the MI intervention.

REVIEW OF THE LITERATURE

Search Strategies

A literature search was conducted utilizing the following databases: Cochrane Library, CINAHL Plus, Google Scholar, PsycINFO, and PubMed. Search terms relevant to schizophrenia, obesity, weight management, weight gain, antipsychotics, nurses, and motivational interviewing were utilized in different combinations. Limits on the search included English language only and peer-reviewed articles published between 2011-2018 including seminal and international studies. Publications excluded were adolescent and pediatric studies, dissertations and other grey literature including guidelines, white papers, and magazines.

The purpose of this project was to develop, deliver, and evaluate a weight management MI educational module for the care team. In order to accomplish this, an overview and synthesis of four main topics is discussed: factors associated with weight gain in adults with schizophrenia, weight management measures for obese adults with schizophrenia, motivational interviewing to improve weight loss, and training nurses in motivational interviewing (Appendix A).

Factors Associated with Weight Gain in Adults with Schizophrenia

Individuals with schizophrenia struggle with weight gain for multiple reasons such as inactive lifestyle, poor dietary choices, and side effects of antipsychotic medications (Hjorth et al., 2014; Masa-Font et al., 2015; Naslund et al., 2016). Studies found that a sedentary lifestyle is related to the negative symptoms of schizophrenia such as poor motivation or lack of energy, which leads to decreased physical activity. Most individuals with schizophrenia reported not participating in extensive physical activities

like running or playing sports, which contributed to weight gain (Lundgren, Rempfer, Lent, & Foster, 2014; Ratliff et al., 2012). However, the shared physical activity that most individuals with schizophrenia enjoyed was walking (Lundgren et al., 2014). Multiple psychosocial factors including lower socioeconomic status and unemployment can contribute to a sedentary lifestyle, making it difficult for individuals with schizophrenia to participate in any form of physical activity (Chouinard et al., 2016; Naslund et al., 2017; Ratliff et al., 2012). Several randomized controlled trials (RCTs) revealed that individuals with schizophrenia had poor dietary choices and eating behaviors that contributed to their weight gain; these include choosing foods high in calories and saturated fats, and not eating enough fruits and vegetables (Brown et al., 2014; Lundgren et al., 2014; Rashid et al., 2013; Ratliff et al., 2012).

Antipsychotic medications are the primary treatment for symptom reduction in schizophrenia and there is an abundance of literature concluding that weight gain is a side effect. Meta-analyses by Bak et al. (2014) and Tek et al. (2016) found that individuals with schizophrenia treated with antipsychotic medications had significant weight gain and increase in body mass index (BMI), which raises their risk for cardiovascular diseases. Usher, Park, and Foster (2013) and Wong, Chen, Lui, and Tso (2011) investigated whether the increased weight of patients with schizophrenia affected adherence to antipsychotic medications; both found that medication-induced obesity was associated with poor medication compliance.

Weight Management Measures for Obese Adults with Schizophrenia

Obese individuals with schizophrenia viewed that losing weight was important in improving their mental and physical health (Dayabandara, Hanwella, Ratnatunga,

Seneviratne, Suraweera & de Silva, 2017). Several studies on weight loss measures

lifestyle interventions that focused on dietary and nutrition education, physical activity,

and cognitive behavioral therapy (CBT) to be successful in weight loss (Dayabandara et

al., 2017; Hjorth et al., 2014; Naslund et al., 2017). Systematic reviews demonstrated that

individuals with schizophrenia would eat healthier if they were provided nutrition

education, and documented their food intake in a diary, and had access to fruits and

vegetables (Hjorth et al., 2014; Naslund et al., 2017). In the hospital setting, the common

intervention for weight management has been to have control of the patients' food

portions; however, this does not transfer to life outside the hospital for individuals with

schizophrenia because there, they would make poor dietary choices that would lead to

weight gain (Brown et al., 2014; Naslund et al., 2017).

Hjorth et al. (2014) and Naslund et al. (2017) reinforced the importance of regular

cardiovascular exercise such as walking to help obese individuals with schizophrenia lose

weight. In a study of patients with schizophrenia evaluating MI as a weight loss

intervention, Methapatara and Srisurapanont (2011) encouraged the use of different tools

to assist in monitoring the physical activity such as pedometers and recording the results

in an exercise log; they found a significant weight loss in patients with schizophrenia who

received these tools plus the MI intervention.

Although diet and exercise are traditional methods for losing weight, individuals

with schizophrenia have difficulty processing decisions in making choices to lose weight.

However, psychological therapeutic interventions have been studied with positive

outcomes in guiding the decision making of individuals with schizophrenia. Magni et al.

(2017) displayed how cognitive-behavioral therapy (CBT) assisted in weight reduction of

individuals with schizophrenia who were taking antipsychotic medications. Niv, Cohen, Hamilton, Reist, and Young (2014) proposed that psychosocial programs were effective in maintaining or decreasing weight in obese individuals with schizophrenia. Hjorth et al. (2014) and Naslund et al. (2016, 2017) findings displayed that a combination of therapeutic weight loss strategies, such as diet, exercise, or CBT, were most effective in decreasing obesity in adult individuals with schizophrenia.

Most of the studies reviewed found that use of only one weight loss method was insufficient, but a combination of diet, exercise, and some form of CBT was needed to promote change and help individuals with schizophrenia remain physically and mentally healthy by losing weight and decreasing their BMI (Chalfoun, Karelis, Stip, & Abdel-Baki, 2016).

Motivational Interviewing to Improve Weight Loss

Initially, MI was used for individuals with substance abuse problems and has since evolved to other therapeutic areas that required behavioral changes (Schumacher et al., 2014). MI is a communication style that stresses a personal decision to make a change and guides the patient who is contemplating the question "why now?" (Ragaisis, 2017). MI is a person-centered approach that guides the motivation to change, with therapeutic listening skills as its foundation. The "spirit" of MI is expressed as collaborative, evocative, and respectful to the patient's autonomy (Miller & Rollnick, 2013). The clinician uses reflective listening skills to validate the patient's point of view and reinforcing "change talk" while resisting giving advice (Bunyan et al., 2017). MI can be flexible and robust creating positive outcomes in many problem areas using different designs, which means MI could be used as a one-time session or multiple sessions, by

itself or with other treatments (Miller & Rollnick, 2013). The effectiveness of MI in changing behaviors has been extensively researched with findings of small to medium effect sizes, particularly in health care (Rollnick, Miller, & Butler, 2008). MI is an appropriate intervention to invoke change and improve weight loss for obese patients because it is centered on their willingness to change and comply with treatment (Armstrong et al., 2011).

Studies investigated the use of MI in primary care to improve weight loss and decrease the negative consequences associated with obesity. Barnes et al. (2018) investigated whether MI combined with nutritional education performed by medical assistants would be useful as a weight loss measure for primary care obese adult patients with or without eating disorders. The study did not find a difference from the author's previous discovery that nutrition education alone produced weight loss without combining with MI. In a systematic review, Lundahl et al. (2013) examined the use of MI in medical settings and concluded that MI was useful in helping patients exercise more and lose weight, except in those with eating disorders. Systematic reviews and meta-analysis investigated the use of MI for weight loss and discovered that MI was a potential tool to losing weight; however, not all studies displayed significant weight loss. These systematic reviews revealed that nurses could implement MI (Armstrong et al., 2011; Barnes & Ivezaj, 2015).

Two studies examined the combination of MI with a lifestyle intervention to help maintain or prevent increased weight gain in individuals with schizophrenia. The first study combined MI with walking exercise (Methapatara & Srisurapanont, 2011); authors found that combining MI and exercise was an effective intervention for weight reduction

in high functioning individuals with schizophrenia Park et al. (2011) proposed the development of a lifestyle intervention on how MI combined with nutrition education, physical activity, and support from a nurse could assist patients with schizophrenia to lose weight. No patient outcomes for this program were reported.

In the review of literature for MI and weight loss, most studies were performed with patients in the primary care setting and two studies on individuals with schizophrenia, which may lead to more extensive studies. Barnes discovered that MI alone might not be effective in primary care for weight loss because of the lack of the trained medical assistants' fidelity and credibility in treatment. However, mental health nurses are in direct contact with patients with schizophrenia, and as previous studies discovered, nurses would be appropriate implementers for MI in the subject of weight loss.

Training Nurses in Motivational Interviewing

Nursing is a profession that utilizes tools such as educating and advising patients to practice better health habits, which differs from the spirit of MI practice. Several studies have suggested the use of MI in nursing; however, few have reported on how to properly train nurses. One study discussed nurses having received MI training in the primary care setting for prevention of illness and promotion of health. However, only half of the potentially trained primary care nurses received the training and few applied MI because of their lack of training, increased workloads, and lack of managerial support (Ostlund, Wadensten, Kristofferzon, & Haggstrom, 2015). Nesbitt, Murray, and Mensink (2014) implemented a brief MI training in a nurse practitioner curriculum; while findings suggest promising results in patient-nurse interactions, authors conclude that more

research is needed to evaluate patient outcomes after receiving MI from the trained nurse practitioners.

In the mental health setting, nurses have been trained to use MI for patients with eating disorders, bipolar disorders, and schizophrenia. Dray et al. (2014) found that brief MI led by mental health nurses was effective in preventing premature discharge of patients with eating disorders. Two studies (McKenzie & Chang, 2015; Ragaisis, 2017) investigated the effectiveness of mental health nurses trained in MI on increasing medication adherence and reducing psychotic symptoms in individuals with schizophrenia. The studies revealed that mental health nurses are effective in providing MI interventions to individuals with severe mental illness (McKenzie & Chang, 2015; Ragaisis, 2017). Park et al. (2011) developed a lifestyle intervention specific for mentally ill individuals who have antipsychotic medication weight gain and led by a nurse. However, the treatment implemented MI with nutrition and exercise sessions, and no final outcomes of the intervention were reported. In another study, MI educational training for mental health professionals that included registered nurses and psychiatric technicians improved patient communication and treatment compliance (Mallisham & Sherrod, 2017).

The review of the literature revealed that weight gain and obesity are prevalent in individuals with schizophrenia and the need for help with weight loss measures is essential in promoting a healthier lifestyle and reducing health morbidities for these vulnerable patients. Weight loss practices that promoted lifestyle interventions combining diet, exercise, and therapy were found effective in this group. One treatment that has been effective for weight loss is MI and could be applicable in the mental health setting.

Nurses and ancillary staff, including psychiatric technicians, have been identified as appropriate implementers for MI in the mental health care setting to persuade obese individuals with schizophrenia to lose weight. This project will implement MI training for the care team focusing on weight loss measures for adult obese patients with schizophrenia.

METHODS

The purpose of this project was to develop, deliver, and evaluate the use of a motivational interviewing (MI) educational training module (Appendix B) to teach the care team in a large community-based mental health agency that provides treatment to individuals with mental illness in the County of Los Angeles. The care team completed a four-hour in-person MI training with strategies aimed at weight loss for adult obese individuals with schizophrenia. Evaluation included a pre-training survey, posttest, and four-month post-training survey for those attending the training.

Participants and Setting

Participants for Phase One were seven care team members from two clinics in the agency. Eligible to attend the training were licensed vocational nurses (LVNs) or psychiatric technicians (PTs) who provided direct patient care in a community-based mental health clinic, were employed by the agency, and cared for individuals at least 18 years or older with known schizophrenia and obesity. All eligible care team members were asked to participate and free to decline or discontinue participating at any time. No financial incentives were offered for participation. Institutional review board (IRB) approval was received from both the community-based mental health agency (Appendix C) and California State University, Fullerton (Appendix D). The data collected was de-identified. The care team members completed an informed consent form.

For Phase Two, which will be implemented after the completion of the DNP project, the author will coordinate with the analytics department to develop a report of the adult obese individuals with schizophrenia with a BMI ≥ 30 kg/m^2. The author will evaluate if the care teams' role in implementing weight management MI are positively

associated with changes in the BMI score reduction of adult individuals with schizophrenia. The author is interested to establish if there is a difference in measurable health outcomes between clinical sites where the care team members have received training in MI (and hopefully, are providing weight management MI) and those which have not.

Method of Intervention

An educational training module was created and conducted for the participating care team. Two MI content experts and an educational professional delivered an initial review of the teaching materials. These experts' approval was obtained for the training module material, mode of delivery, and proposed delivery time for the course.

The course training module was based on material presented in the book *Motivational Interviewing in Health Care: Helping Patients Change Behavior* (Rollnick et al., 2008), *Motivational Interviewing Training New Trainers Manual* (Motivational Interviewing Network of Trainers [MINT], 2014), and *Motivational Interviewing Assessment: Supervisory Tools for Enhancing Proficiency* (Martino et al., 2006). The education session was held in the care teams' workplace. There was a four-hour session for the seven participants. The course started with a 90-minute lecture on the theory of MI. This was followed by 90-minutes of training exercises on specific MI skills. The training session concluded with a 60-minute role-play.

MI theory lecture included (MINT, 2014):

- Introduction to MI (15 minutes)

- Principles and skills (30 minutes)

- Strategies (45 minutes)

Specific MI skills exercises and timing included (Rollnick et al., 2008):

- Reflective listening: round robin (15 minutes)

- Summarizing: dyads (30 minutes)

- Roadblocks to effective listening: spontaneous participation (15 minutes)

- Rolling with resistance: dyads, then whole group (30 minutes)

Role play (MINT, 2014):

- Three-buddy interview: groups of three; counselor, patient, and observer (60 minutes)

After the training and during the four-month implementation period of the MI intervention by the care team, the author scheduled follow-up visits after six and 12-weeks with the care team at their clinics and provided short-term booster sessions, feedback, or support (Ostlund et al., 2015; Rumball & Tober, 2013).

Measures

There were three measures used for this project. The first was a pre-training survey (Appendix E) developed by the author. The second was a pre and post-training knowledge questionnaire (Appendix F), and the third, a four-month post implementation survey (Appendix G).

Pre-training Survey

A seven-question survey was administered at the beginning of the course to the care team to collect information on the factors that might influence MI interventions. These included demographic characteristics, perceptions about using MI for weight loss with obese individuals with schizophrenia (a Likert type scale), and previous training in MI (Nesbitt et al., 2014; Ragaisis, 2017).

Pre and Post-training Questionnaire

A 10-item print knowledge questionnaire was administered to the care team at the beginning and completion of the course. The questions were in multiple choice format to measure the care team's comprehension of MI strategies and techniques, and repetition of the perception agreement questions to evaluate if there were changes in their perceptions (Dray et al., 2014; Martino et al., 2006). Correct responses to the questionnaire were summed to create a knowledge test score.

Four-Month Post Implementation Survey

A 12-question survey was administered at four months after the training to measure the care team's reported use of the MI intervention and level of adoption in their clinical setting. The care team's responses were measured using five Likert type scale questions with associated open-ended questions created by the author. The questions were as follows:

- identify which MI skills were helpful.

- determine barriers in implementing the MI intervention.

- approximate the percentage of times that MI is used in the practice setting.

- evaluate if there has been a perceived improvement in weight loss in adult obese individuals with schizophrenia who are seen at the clinic by the care team.

Expert reviewers who approved the training confirmed face validity to describe the responses to the open-ended questions. Categories of responses were created and numbers of respondents to each were identified.

Data Collection and Analysis

An electronic message was sent to the care team participants to invite them for the MI training. A recruitment script (Appendix H) was read to the care team prior to the training. The care team completed a written research consent form (Appendix I) prior to the training. The pre-training survey was completed by the care team after the recruitment script was read. The pre-training questionnaire was given to the care team and completed prior to the start of the educational module training session. The post-training questionnaire was completed by the care team immediately after the educational module training session.

The hand-written pre-training survey, pre and post-training questionnaire, and four-month post implementation survey were reviewed and scored manually. The results were inputted in an Excel spreadsheet and exported to SPSS Version 25. Data were analyzed using descriptive statistics. Total knowledge scores (number of correct responses to 10 items) were compared pre and post-training using independent t-tests with a significance level of .05.

RESULTS

The purpose of this project was to develop, deliver, and evaluate the use of a motivational interviewing (MI) educational training module. Learners were the care team from two clinics of a large community-based mental health agency that provides treatment to individuals with mental illness in the County of Los Angeles. Seven participants completed the four-hour in-person MI training with strategies aimed at weight loss for adult individuals with schizophrenia. An evaluation included a pre-training knowledge and attitudes survey, posttest, and four-month post-training survey.

Pre-training Survey

There were 10 care team members invited to participate in the MI training. Confirmed by the clinic's program director, invitees included eight psychiatric technicians (PTs) and two licensed vocational nurses (LVNs). Three care team members did not attend the training because of work or personal obligations. Before the MI training, the care team members completed the pre-training survey administered by the author. Table 1 displays the multiple-choice responses that included the care team's professional designation; years worked in their role, past MI training, and belief in cognitive behavioral therapy (CBT) as an effective weight loss intervention.

All seven care team members were PTs, and approximately 71% worked in the clinic for three years or less. Of the care team members, 43% had prior training in MI, and all believed probably that CBT was an effective weight loss intervention for obese adult individuals with schizophrenia. The care team members' confidence is consistent with the Magni et al. (2017) study that displayed how CBT assisted in weight loss for individuals with schizophrenia taking antipsychotic medications.

Table 1

Pre-survey Multiple-choice Responses

Characteristic	N = 7	%
Professional designation		
Psychiatric technician	7	100
Years working in the designated role		
< 3 years	5	71.4
4-6 years	1	14.3
7-9 years	0	0
10-12 years	1	14.3
> 12 years	0	0
Prior training in Motivational Interviewing		
Definitely yes	3	42.9
Probably yes	0	0
Might or might not	1	14.3
Probably not	1	14.3
Definitely not	2	28.6
Belief that cognitive behavioral therapy could be an effective weight loss intervention for adult obese clients with schizophrenia		
Definitely yes	4	57.1
Probably yes	3	42.9
Might or might not	0	0
Probably not	0	0
Definitely not	0	0

Pre and Post-training Questionnaire

Before and immediately after the MI training, participants completed a 10-item print knowledge questionnaire. Table 2 displays the number of participants with correct responses to each item. At post-training, the care team members had increased numbers of correct responses for questions 3, 4, 8, and 10. However, there was a decrease in correct responses for question 9 regarding the therapists' expectations on the individual's abilities for losing weight. A t-test was performed to determine if changes were statistically significant; the mean total score increased from 8.43 (SD = .79) to 9.29 (SD = .76), $t(6) = -2.121$, $p = .078$.

Table 2

Correct Responses to Knowledge Items about Motivational Interviewing

	Correct Responses	
Item	Pre-training	Post-training
Obese clients must accept that they have a problem (e.g., are obese or overweight) before they get help.	7	7
When it comes to behavior changes such as losing weight, the answers mostly lie within each client, and finding them requires some listening.	7	7
Direct persuasion is not an effective method for resolving client ambivalence to losing weight.	4	7
The therapeutic relationship is more like a partnership or companionship rather than expert/recipient roles.	6	7
Resistance to losing weight is best thought of as a product of the interpersonal context in which is observed.	7	7
If clients are resistant to talk about changing their behaviors, direct confrontation and persuasion are required to help the person change.	7	7
The best way to motivate clients with weight problems is to help them resolve their ambivalence about change.	7	7
External pressure and consequences are the only way to make clients change their behaviors and lose weight.	6	7
Therapists' expectancies for their client's abilities to change have no effect upon whether they lose weight.	5	3
The motivational interviewing counseling style is generally a quiet and eliciting one.	3	6

Care Team Members Responses at Baseline and Four-Months

Table 3 displays the second part of the pre-survey fill-in attitude responses, which included questions repeated at the four-month survey. The repetition of questions at four months was to compare the care team member's responses after applying the MI intervention in clinical practice (see Table 4). During the pre-survey period, 57% of care team responded that poor diet choices, limited resources, and medication side effects were the top three reasons why individuals with schizophrenia gained weight. The majority of the care team members agreed that exercise and diet were the most effective

interventions to lose weight with 43% believing that education was also important. The majority of care team members (86%) believed that the individual's insight, followed by a combined 43% believing that limited finances and poor food choices, were contributing factors of why it was difficult for individuals with schizophrenia to lose weight.

A follow-up survey was distributed with the same three questions to compare the responses from the baseline and at four months. The care team responded differently at four-months with 86% reporting that the side effects of psychotropic medications were the reason why individuals with schizophrenia gained weight. This is consistent with literature findings that individuals with schizophrenia treated with antipsychotic medications have significant weight gain (Bak et al., 2014; Tek et al., 2016). Reasons such as individuals with limited resources remained the same (57%); however, poor diet choices dropped from 57% to 29% of participants. These findings differ from Hjorth et al. (2014), Masa-Font et al. (2015), and Naslund et al. (2016), who found that the inactive lifestyle and poor dietary choices were the top reasons why individuals with schizophrenia gained weight. A new reason for weight gain was introduced by one respondent, which was that individuals gained weight because they did not follow-up or have access to a primary care physician.

Regarding the most effective interventions to lose weight, the care team members initially believed that diet and exercise were most effective. However, this was not the consensus at four months. The care team suggested new weight loss interventions not mentioned at baseline; these were access to resources such as healthy food choices, support systems, follow-up with a primary care physician, and using MI techniques.

At four months, the care team members did not believe that the individual's poor insight was the primary reason why it was difficult for individuals to lose weight. The previous top reasons including limited resources, poor food choices, and medication side effects at baseline had an equal distribution at four months. However, the severity of schizophrenia symptoms, which was not a reason at baseline became the most agreed reason of 57% care team members. There were new reasons developed at four months, such as the individual's age, lack of physical activity, and not having a follow-up plan.

Four-Month Post Implementation Survey

Four months after the MI training, the seven participants completed the final survey. At this point, participants responded to new questions (in multiple-choice format) that included the frequency, comfort level, beliefs, and continuation of using MI skills in practice. They ranked which five MI skills were used the most and least during the implementation period. Finally, there were three open-ended questions asked relating to MI barriers, effectiveness, and supplementary interventions.

Four-Month Survey Responses

When the care team communicated to obese individuals with schizophrenia, six participants reported using MI techniques most of the time, half the time, and sometimes; only one used the MI interventions always. Of the care team members, 86% reported being mostly comfortable using MI skills in practice. The majority believed that MI was a useful tool, which helped obese individuals with schizophrenia lose weight. Of the care team, 57% believed that the individuals benefitted from MI interventions, while 29% thought it was probably helpful, and 14% that it did not help. The majority (86%) said

that they would continue to use the MI interventions in practice and 14% might or might

not continue using MI skills (Table 4).

Table 3

Open-ended Responses to Survey Questions – Baseline vs. 4 Months

Reasons Why Clients with Schizophrenia Gain Weight	Pre (*N = 7*)	4 months (*N = 7*)
Poor diet choices	4 (57.1%)	2 (28.6%)
Limited resources	4 (57.1%)	4 (57.1%)
Poor insight	2 (28.6%)	3 (42.9%)
Medication side effects	4 (57.1%)	6 (85.7%)
Comfort food	1 (14.3%)	1 (14.3%)
Poor impulse control	1 (14.3%)	0
Lack of exercise	1 (14.3%)	1 (14.3%)
Lack of motivation	1 (14.3%)	0
No follow-up with primary care physician	0	1 (14.3%)
Effective Interventions to Lose Weight	**Pre (*N = 7*)**	**4 months (*N = 7*)**
Education	3 (42.9%)	3 (42.9%)
Diet modification	4 (57.1%)	1 (14.3%)
Exercise	5 (71.4%)	3 (42.9%)
Motivation	1 (14.3%)	0
Close monitoring	2 (28.6%)	1 (14.3%)
Goal setting	1 (14.3%)	0
Motivational interviewing techniques	0	1 (14.3%)
Provide access to resources	0	3 (42.9%)
Increase water intake	0	1 (14.3%)
Follow-up with primary care physician regularly	0	1 (14.3%)
Support systems	0	1 (14.3%)
Reasons Why it is Difficult to Lose Weight for Clients with Schizophrenia	**Pre (*N = 7*)**	**4 months (*N = 7*)**
Poor insight	6 (85.7%)	2 (28.6%)
Limited finances or funds	3 (42.9%)	3 (42.9%)
Lack of motivation	1 (14.3%)	0
Isolation	1 (14.3%)	0
Poor food choices	3 (42.9%)	2 (28.6%)
Increased appetite	1 (14.3%)	0
Medication side effects	2 (28.6%)	2 (28.6%)
Limited support systems	2 (28.6%)	2 (28.6%)
Co-occurring diseases	1 (14.3%)	0
Severity of schizophrenia symptoms	0	4 (57.1%)
Age	0	1 (14.3%)
Lack of physical activity	0	2 (28.6%)
No follow-up plan	0	1 (14.3%)

Table 4

Follow-up (*4 month*) *Survey*

Characteristics	(N = 7)	%
Frequency of MI techniques applied to adult obese clients with schizophrenia		
Always	1	14.3
Most of the time	2	28.6
About half the time	2	28.6
Sometimes	2	28.6
Never	0	0
Comfortable in applying MI skill in practice		
Definitely yes	3	42.9
Probably yes	3	42.9
Might or might not	1	14.3
Probably not	0	0
Definitely not	0	0
Belief that MI is an effective tool in assisting adult obese clients with schizophrenia lose weight		
Definitely yes	4	57.1
Probably yes	2	28.6
Might or might not	1	14.3
Probably not	0	0
Definitely not	0	0
Belief that clients in the clinic benefitted from MI interventions		
Yes	4	57.1
No	1	14.3
Maybe	2	28.6
Continue to use MI interventions in practice		
Definitely yes	5	71.4
Probably yes	1	14.3
Might or might not	1	14.3
Probably not	0	0
Definitely not	0	0

Motivational Interviewing Ranking of Skills

The care team was asked to rank five MI intervention skills (open-ended questions, affirmations, reflective listening, summarizing, and eliciting change talk) used from the most to least frequently in practice. The findings determined that the care team members used these skills during the implementation period. Affirmations and reflective listening were ranked the highest used interventions while eliciting change talk was the least. Open-ended questions were moderately ranked, and summarizing was mentioned (Table 5).

Table 5

Motivational Interviewing Skills Ranking

	Motivational Interviewing Skills ($N = 7$)				
Ranking	Affirmations	Reflective Listening	Open-Ended Questions	Summarizing	Eliciting Change Talk
First	3	3	0	1	0
Second	1	2	3	0	1
Third	1	1	3	2	0
Fourth	1	1	1	2	2
Fifth	1	0	0	2	4

Open-ended Questions Responses

Table 6 reflects actual responses of the care team in response to three open-ended questions. First, members listed barriers that they experienced such as not being proficient enough or having enough time to implement the MI intervention, which was consistent with literature findings of Ostlund et al. (2015). Second, the care team listed barriers to the individuals with schizophrenia experienced; these included barriers of being reluctant to change, not having enough resources to follow through, or having

enough support to successfully make the change. Third, the care team reported the most effective weight loss interventions to be eating healthier, exercising moderately, implementing the MI techniques, and possibly changing medications with lesser weight gain side effects. Finally, the care team stated that other effective weight loss interventions besides MI were assessing diet, weighing the individual regularly, and having access to a primary care physician.

Table 6

Actual Responses to Open-ended Questions at 4-month Follow Up

Barriers experienced while implementing MI interventions to obese clients with schizophrenia
"Reluctance for clients to change"   "Not proficient in MI techniques"   "Lack of resources to suggested interventions"   "Difficult to focus because of thought disorders"   "Clients do not follow through with plan"   "Members not patient with MI techniques"   "No time to implement MI techniques"   "Lack of support systems"   "Difficulty communicating"
Most effective weight loss interventions for obese clients with schizophrenia
"Eliciting change from the client"   "Eating more vegetables"   "Walk after eating"   "Eating smaller portions"   "Medication change"   "Encourage physical activities"   "Talking about healthier food choices"   "Using reflective statements regarding weight gain and health"
Other effective interventions instead of MI utilized for obese clients with schizophrenia lose weight
"Visual imagery"   "The client's internal desire to change"   "Weighing client regularly"   "Access to primary care physician to address medical concerns"   "Assess diet at home"

DISCUSSION AND RECOMMENDATIONS

Using strategies recommended from the Ottawa Model of Research Use (OMRU), this project with a small convenience sample focused on enhancing the psychiatric care team's knowledge and perceptions of using the newly taught evidence-based skills of motivational interviewing (MI) to address weight loss interventions for adult individuals with schizophrenia who have obesity. The care team attended the 4-hour MI training and were encouraged to implement this new knowledge in their daily work. The first goal of this project was to develop and implement a weight management MI training module for the care team. The training module material, mode of delivery, and proposed delivery time of the course were created by the author incorporating the learner needs for psychiatric technicians and licensed vocational nurses; module content was reviewed by two MI content experts. The second goal was to evaluate the care teams' level of knowledge and performance in delivering MI interventions. These data were measured utilizing a pretraining survey, pre and post-training knowledge questionnaire, and four-month implementation survey. The care team responded positively in responses to all survey items, which may reflect social desirability bias that the responses provided by the care team's desire to give the correct answer and be seen favorably by others.

Project Implementation Process

The project was implemented by the care team in two clinics of a large community-based mental health agency that provides treatment to individuals with mental illness in the County of Los Angeles. The implementation process included training the care team and using the MI intervention and level of adoption in their clinical setting. The OMRU framework effectively guided the development and implementation

of the weight management MI training program for the care team who provided services to adult obese individuals with schizophrenia.

The author created the MI educational training module and provided face-to-face training. In this project, the training was provided in one of the clinics of the mental health agency. There was a 70% turn out from all care team members, all psychiatric technicians (PTs) working at the two clinics who had been invited. Intermittent follow-up visits by the author were done after six and 12-weeks to provide short-term booster sessions, feedback, and support to the care team.

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Project Outcomes

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Training Effectiveness

The care team's comprehension of the MI training was measured with pre and post-training knowledge survey and a posttest questionnaire. The pre-training knowledge survey indicated that the majority of the care team believed that cognitive behavioral therapy was an effective weight loss intervention for obese individuals with schizophrenia and 43% had prior training in MI. At post-test, members reported confidence with their improved knowledge and showed a mean total score increase in knowledge.

Care Team Performance

The goal of this project was for the care team to receive the MI training then apply the skills in clinical practice to obese adult individuals with schizophrenia. The care team's performance was measured at the four-month survey; members displayed positive responses in the frequency, comfortability, belief, and continuation of using MI intervention skills in the clinical setting. The care team appropriately assessed the barriers

and effectiveness of using the MI skills when applied as a weight loss intervention for obese adult individuals with schizophrenia.

Change in Practice

The care team provides medication support services to the majority of obese adult individuals with schizophrenia. In the past, these services have been focused on medication management and assisting prescribers. The care team had not been asked to address the issues and complications of obesity; this was done by the prescriber using traditional advice-giving techniques rather than MI interventions. This project demonstrated that the care team is interested in and capable of providing MI interventions focused on weight loss management for obese individuals with schizophrenia. The care team could implement the MI interventions every time they came across individuals with schizophrenia that fit the criteria of obesity in their clinical setting.

Limitations

There were several limitations to this project. First, this was a small sample of care team members that were all PTs with no licensed vocational nurses (LVNs). Second, the generalizability of this project was limited to only two of 22 clinics at the community-based mental health agency. Third, the project was done in a short timeframe of four months, which limited the chance to measure the effectiveness of the MI interventions on the obese adult individuals with schizophrenia. Fourth, there was no incentive for the care team members to add another task in their already busy workload.

Recommendations

The care team members reported that they feel comfortable and adequate using MI interventions. They reported believing that the MI intervention is an effective tool, which benefits obese individuals with schizophrenia to lose weight. The care team should be encouraged to continue to use the MI interventions in practice. Moving forward the author would continue by expanding the project. This would be done by using the following strategies.

First, provide MI implementation training to care members of other clinics of the community-based mental health agency to increase to the frequency of MI interventions to more obese adult individuals with schizophrenia. Second, provide training to other trainers and provide frequent short-term follow-up booster training, which increases the numbers of trained care team members and gives supplemental training. Third, collaborate with the quality assurance department to create a billing code that captures MI interventions provided by the care team. This will allow a tracking mechanism to follow strategies used by the care team with obese individuals with schizophrenia who received the MI interventions. Lastly, work with the analytics and reporting department to create a data set that will track a billing code number associated with MI interventions provided by the care team for individuals diagnosed with schizophrenia and their BMI; this will evaluate if weight loss has occurred post-implementation of these strategies.

Conclusions

This is the first known project to focus on a care team with psychiatric technicians who were taught MI interventions focused on weight loss for obese adult individuals with schizophrenia. Training the care team and implementing the MI interventions in their

daily routine was achievable, adequate, and possibly an effective weight loss strategy. The project achieved its purpose of training the care team and integrating the MI intervention to obese adult individuals with schizophrenia. The MI intervention was simple enough to use; however, further booster trainings are recommended to guide the care team to continue using MI techniques.

The author proposes to continue to train other care team members at the other clinics of the community-based mental health agency, train more trainers, work with the quality assurance department to assign a billing code for MI interventions that are provided by the care team, and work with the information technology department to create a database displaying individuals with diagnosis of schizophrenia, body mass index record, and a MI intervention billing code to evaluate if weight loss has been achieved.

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APPENDIX A

TABLES OF EVIDENCE

Table 1

Table of Evidence for Factors Associated with Weight Gain in Schizophrenia

Purpose	Study Design & Key Variables	Sample & Setting	Measures	Findings	Authors' Conclusions; Limitations & Notes
The purpose of this study is to conduct a meta-analysis of AP WTG and BMI change in FEP (Tek et al., 2016).	Meta-analysis Quantitative: Effects of AP medications.	28 articles of AP or BMI change in FEP IC: Placebo vs. AP, BMI for Asian vs. Western	Short and long- term mean weight and BMI differences	AP WTG more in long-term, which was twice more than short-term AP use. AP WTG more in Westerners than Asians. AP increased weight in FEP pts.	AP cause WTG and BMI in FEP pts. These effects should be monitored by clinicians. <u>Limitations:</u> 1. Low prevalence of Asian studies. 2. Inconsistent measures for BMI. 3. Low data on weight vs. AP dose. Lacking long term studies on some AP.
To examine predictors of elevated BMI in pts with SZ, SZA, and BD share genetic factors and if identified could improve or prevent obesity (Chouinard et al., 2016).	Cross sectional or retrospective	262 pts with psychosis and MDO from 2006 to 2013. Setting: McClean Hospital, Belmont, MA IC: IP and OP pts with SZ, SZA, and BD	BMI and Dx of SZ, SZA, and BD. CRF for WT gain and obesity	SZA pts have greater CRF for obesity	Identifying predictors of increased BMI in pts with psychosis and MDO will help prevent obesity and its complications. Future studies needed on mental illness and obesity. <u>Limitations:</u> 1. Data was from a subgroup of pts who had brain imaging 2. BMI measurements were from self-report

Purpose	Study Design & Key Variables	Sample & Setting	Measures	Findings	Authors' Conclusions; Limitations & Notes
					3. Incomplete medication data 4. BMI data were cross-sectional, which did not allow causality inference.
To assess crude weight changes after the start of an AP or after the switch to another AP, including all APs ever examined in a RCT (Bak, Fransen, Janssen, Os, & Drukker, 2014).	Meta-analysis RCT and AP	307 qualitative and quantitative AP switch studies IC: WTG and BMI, 18 years or older, RCT EC: Studies designed to influence WTG	A. WTG per AP B. WTG in AP-naïve pts exposure duration C. BMI changes per exposure duration D. BMI changes in AP-naïve pts E. 7% WTG duration for exposure per category and AP-naïve pts	Almost all AP displayed WTG after prolonged exposure. Switching AP didn't cause weight loss. WTG was pronounced in AP-naïve pts.	All AP increase WTG after a long period of time. Switching AP to decrease WTG is overrated. WTG is pronounced in AP-naïve pts Limitations: 1. Sparse data on AP naïve groups. 2. Test for WTG in only 4 exposure periods. 3. Most studies had fixed periods resulting some measure of regression to mean. 4. Other psychotropic meds could affect the AP results. 5. Not all AP were included.
To examine factors that are self-identified by individuals with SZ as contributing to weight regulation by comparing samples of OA with and without SZ	RCT	22 OA with and without SZ Setting: CMHC in the Midwest IC: DX of SZ or SZA, Age 18 to 65 EC: SA, BN, WL meds	WALI self-report assessment	SZ group reported difficulty controlling eating behavior which caused WG. Reported enjoyment of PA	Physical activity is possible with SZ in combination with other healthy lifestyle interventions. Limitations: Exploratory studies Small sample size

Purpose	Study Design & Key Variables	Sample & Setting	Measures	Findings	Authors' Conclusions; Limitations & Notes
(Lundgren, Rempfer, Lent, & Foster, 2014).					
To clarify the association between obesity, SZ and cognition, and to determine if there were any gender differences in these relationships (Rashid et al., 2013).	Two-tailed Pearson correlation analysis. Obesity, SZ, cognition, and gender differences	707 SZ pts 1012 Controls from 2008 to 2011. Setting: IMH in Singapore IC: Age 21 to 55 with or without DX of SZ, 6 years of primary school. EC: HX of SA, neuro disease, color blindness, family HX of psychosis.	SZ, BMI and NB using SEM	No direct effect of BMI on cognition with age, education, and SZ. 2 SEM indirect effects with BMI and cognition.	Increased rates of obesity in SZ and relationship with cognition must be addressed. BMI could be a CRF to identify cognitive deficits. Limitations: Modest model fit, and co-morbidities of obesity were not measured.

Note. AP – Antipsychotic; BD – Bipolar Disorder; BMI – Body Mass Index; CRF – Clinical Risk Factor; DX – Diagnosis; EC – Exclusion Criteria; FEP – First-Episode Psychosis; HX – History; IC – Inclusion Criteria; IP – Inpatient; MA – Massachusetts; MDO – Mood Disorders; MS – Metabolic Syndrome; NB – Neurocognitive Battery; OP – outpatient; pts – patients; RCT –Randomized Controlled Trial; SA – Substance Abuse; SEM – Structural Equation Modeling; SZ – Schizophrenia; SZA – Schizoaffective Disorder; WTG – Weight Gain.

Table 2

Table of Evidence for Weight Management Measures for Obese Adults with Schizophrenia

Purpose	Study Design & Key Variables	Sample & Setting	Measures	Findings	Authors' Conclusions; Limitations & Notes
To review the current evidence regarding the effectiveness of different pharmacologic and nonpharmacologic interventions for AIWG (Dayabandara, Hanwella, Ratnatunga, Seneviratne, & de Silva, 2017).	Meta-analysis	77 publications	Literature search topics: 1. Management of AIWG 2. APs switching 3. Nonpharmacologic 4. Pharmacologic	Almost all APs cause WG, which increases the risk of metabolic complications and reduce compliance.	A combination of switching high WG APs, lifestyle modifications, and adding adjuvant meds to treat AIWG. Preventing APs WG should be a priority. Limitations: 1. Short duration studies 2. Included first episode pts
To estimate the effect of LI participation on reduction in BW among OW and OA with SMI (Naslund et al., 2017).	Meta-analysis Systematic review	17 studies, 1968 participants, 50% male, 66% with SZ IC: RCT, LI for WL, SMI	Quantitative systematic review Studies grouped ≤ 6 months or ≥ 12 months	LI had increased WL in both ≤ 6 months or ≥ 12 months studies.	LI is effective for treating OW and OA with SMI. Longer durations had better WL outcomes. Limitations: 1. Studies included not OW or obese participants. 2. Not restricted to RCTs, difficult to gauge effect of LI. 3. Did not include recent upsurge of RCT with longer duration.
To conduct a CLR of non-pharmacological	Systematic review	ROL conducted on September 2014 IC:	Comprehensive systematic review	1. Many non-pharmacological interventions are effective in	CRF determines cardiovascular health, which could be modified.

Purpose	Study Design & Key Variables	Sample & Setting	Measures	Findings	Authors' Conclusions; Limitations & Notes
interventions -PA and target cardiometabolic risk factors in individuals with SZ. To describe the contribution of PA, specifically by reviewing trials of supervised exercise training programs (Chalfoun, Karelis, Stip, & Abdel-Baki, 2016).		1. Training with CBT, diet, PA, or education 2. Supervised training 50% of the time EC: Non-supervised exercise interventions	1. Non-pharmacological interventions 2. Multimodal interventions 3. Supervised exercise alone	reducing CVD risk factors when combined with PA. 2. Supervised PA has been successful in decreasing CVD risk, and aerobic interval training appears to provide more benefits by specifically targeting CRF levels.	High aerobic exercise is more effective for individuals with SZ. Most interventions like CBT, diet, and exercise have beneficial effect on weight. Limitations: Serves to generate some hypotheses only
To review controlled intervention studies on reducing OW, obesity, and reducing physical illness in pts with SZ (Hjorth, Davidsen, Kilian, & Skrubbeltrang, 2014)	Systematic review	23 studies RCT and NRCT IC: Interventions of diet, exercise, CBT, or mixed.	Non-pharmacological against standard care for pts with SZ.	1. Diet – should be used as daily treatment. 2. Exercise – had weight reducing effect and beneficial physical health. 3. CBT – SZ could learn ways to avoid WG 4. Mixed – had significant WL	Interventions efficacy in reducing weight and improving physical health. Confirmation that physical health improvement is possible with SZ Limitations: Only English language was searched. Studies in other language could have been missed.
To describe the prevalence of OW veterans. To examine utilization of WL services in US and	RCT	146 OW or OA SZ adults Setting: 2 VA hospitals in Long Beach, CA.	16-week EQUIP psychosocial weight management model for SZ.	5. Participants lost an average of 2.4 pounds and BMI decrease of 0.3 and none for control group.	Intervention strategies that improve utilization and improve WL need to be developed. Limitations:

Purpose	Study Design & Key Variables	Sample & Setting	Measures	Findings	Authors' Conclusions; Limitations & Notes
identify predictors of utilization. To examine outcomes of the EQUIP Wellness Program compared to a control group (Niv, Cohen, Hamilton, Reist, & Young, 2014).		IC: DX of SZ or SZA	BMI measured at baseline, 1 year later, each treatment session.		1. Lack of outcome data after a year. 2. Lack of systematic assessment of barriers

Note. AIWG – antipsychotic induced weight gain; APs – antipsychotics; BW – body weight; BN – Bulimia Nervosa; CA – California; CBT – Cognitive Behavioral Therapy; CLR – critical literature review; CMHC – Community Mental Health Center; CRF – cardiorespiratory fitness; CVD – cardiovascular disease; EC – exclusion criteria; EQUIP – Enhancing Quality-of-care In Psychosis; IC – Inclusion Criteria; LI – Lifestyle Intervention; MHS – mental health services; NRCT – Non-randomized Control Trials; OA – obese adults; OW – overweight; PA – physical activity; pts – patients; RCT – Randomized Control Trials; ROL – review of literature; SA – Substance Abuse; SMI – serious mental illness; SZ – schizophrenia; SZA – Schizoaffective Disorder; UC – Usual Care; VA – Veterans Affairs WG – Weight Gain; WL – Weight Loss.

Table 3

Table of Evidence for Motivational Interviewing to Improve Weight Loss

Purpose	Study Design & Key Variables	Sample & Setting	Measures	Findings	Authors' Conclusions; Limitations & Notes
To build from previous study where MI alone was not effective in WL. To examine if WL could be improved if MI was combined with NP (Barnes et al., 2018).	RCT	31 OA with BED MAs as clinicians	WL in at post and 3-month follow-up Individuals with BED had better results compared to those without BED	No significant change in adding MI with NP	MI for WL in primary care may not be effective because most of the participants were already motivated to change and lose weight. MAs fidelity were questionable in using MI with the patients. Limitations: Small sample. Primary care setting. Not randomly assigned participants.
To perform a systematic review and find evidence supporting the effectiveness of MI for WL (Barnes & Ivezaj, 2015).	Systematic review	19 studies, 24 RCTs IC: MI, WL, PC EC: Baseline data only, post-treatment assessment, specialty care, pediatrics	1. MI training and TX adherence 2. MI TX comparison conditions 3. MI TX format and other TX 4. TX length, FU assessments, and retention 5. Supplemental materials and technology 6. PT characteristics 7. Weight loss 8. Other TX outcomes 9. Disordered eating	Few studies provided adequate information about MI TX fidelity. Significant WL was discovered in 9 studies. 13 studies reported that MI decreased 5% loss of BW.	Potential for MI to help PC OA lose weight and improve cardiovascular effects. Limitations: File drawer bias, possible missed studies, and no meta-analysis

Purpose	Study Design & Key Variables	Sample & Setting	Measures	Findings	Authors' Conclusions; Limitations & Notes
To SR RCTs that investigate the effectiveness of motivational interviewing for reducing body mass, measured by change BMI in adults who are OW or obese (Armstrong et al., 2011).	Meta-analysis and systematic review	11 meta-analysis studies 12 systematic reviews IC: RCT, MI, WL, OW, OA EC: Inappropriate population, intervention, or outcomes.	RCT studies of MI effects for OW or OA. 1. On BM 2. On BW and BMI	MI was associated with greater reduction in BM. Significant reduction in BW. MI enhances WL in OW and OA.	MI is a promising value to WL interventions for OA. Consistent for PT centered approach. Provides a means to work with those ambivalent about. Limitations: 1. Heterogeneity of dose, delivery, and duration of MI 2. Lack of blinding 3. Low participation samples Varying outcome measures
To design and examine a program called the PWMI program in patients with SZ who are obese or OW (Methapatara & Srisurapanont, 2011).	RCT	64 participants, 32 each for intervention and control group IC: Age 18 to 65, DX of SZ, BMI ≥ 23.0 Setting: Thailand	PWMI for OA with SZ. 12-week open labeled RCT	Significant WL of intervention group in week-12	MI with physical exercise is effective in reduction of BW and BMI in SZ pts Limitations: 1. Small sample size 2. Not a blind study 3. Short 12-week period 4. Unsure of pts compliance with pedometers 5. No recorded nutrition status 6. Only mild SZ 7. No measure of SZ symptoms
To provide detailed information on the content, structure, and development of the lifestyle intervention (Park et al., 2011).	Grounded Theory	SMI individuals taking APs MHN	Passport 4 Life: 12 weekly sessions comprised of: 1. MI 2. Nutrition 3. Exercise education Combined	Outcomes of program are currently being researched Further objective is to initiate program when APs are prescribed	Development of a needed WL program for mentally ill patients. Nurse-led MI. Limitations: No outcomes on patient population.

Purpose	Study Design & Key Variables	Sample & Setting	Measures	Findings	Authors' Conclusions; Limitations & Notes
					No RCT recorded for this paper.

Note. APs – Antipsychotics; BED – Binge-Eating Disorder; BM – Body Mass; BMI – body mass index; BW – Body Weight; FU – Follow-up; MAs – Medical Assistants; MI – motivational interviewing; MHN – Mental Health Nurses; NP – Nutrition Psychoeducation; OA – Obese Adults; OW – overweight; PC – Primary Care; pts – patients; PWNI – pedometer walking plus motivational interviewing; RCT – randomized controlled trials; SA – Substance Abuse; SR – systematically review; SZ –schizophrenia; TX – Treatment; WL – weight loss.

Table 4

Table of Evidence for Training Nurses in Motivational Interviewing

Purpose	Study Design & Key Variables	Sample & Setting	Measures	Findings	Authors' Conclusions; Limitations & Notes
To increase psychiatric HCP knowledge and use of MI skills during patient encounters (Mallishan & Sherrod, 2017).	Pre- Posttest	61 psychiatric HCPs consisting of RNs and PTs. IP psychiatric setting	comMIt pre- posttest MIACF to measure psychiatric behaviors 8-hr training of didactic, role play, group discussion, and video examples 3 weeks of MI practice	1. Increase of HCP MI knowledge 2. MI knowledge translates to usage in clinical practice 3. RNs could mentor PTs to develop MI skills	Implementing MI training in the IP setting provides opportunities for HCPs to provide patient-centered communication to have better patient outcomes. <u>Limitations:</u> 1. One primary trainer, who was the PM 2. PM performed all HCP observations 3. Posttest after 1-month would better identify MI knowledge 4. More observers could improve inter-rater reliability 5. Limited project timeline
To investigate nurses' perceptions regarding use of motivational interviewing after an educational program (Ragaisis, 2017).	RCT	17 staff RNs IP psychiatric hospital in northeastern US	Educational intervention Provide RNs tools to learn MI: 1. Collaboration with PTs 2. Develop novice communication skills 3 surveys; pre, 1-month post, 3-months post	Consistent use of MI declined after 1 month RNs connected and listened to pts RNs gained self-awareness of their interactions with pts	MI was used less often than originally believed. Having MI focused conversations were useful. Work environment is important if MI is to remain sustainable. <u>Limitations:</u> 1. Small sample 2. Later survey response decreased by 50% 3. Limited generalizability 4. RNs did not continue to use MI

Purpose	Study Design & Key Variables	Sample & Setting	Measures	Findings	Authors' Conclusions; Limitations & Notes
To describe MI trained nurses' experiences of MI in PCS (Ostlund, Wadensten, Kristofferzon, & Haggstrom, 2015).	Qualitative	20 PCN trained in MI Setting: Swedish PCS	Purposive sampling of PCN Semi-structured interview	PCN experiences: 1. Openness to MI 2. Mutual benefit 3. MI facilitated with pts 4. Aversion was found from non-users.	PCN who used MI found it easier to work with pts in lifestyle change. MI requires more than taking a single course. Reasons for not using MI was lack of training, support, appropriate pts, and interest. <u>Limitations:</u> Information was based on self-reports.
To determine the feasibility and efficacy of brief training for MHNs in MI using different assessment methods. To examine the impact of nurse provided MI adherence to inpatient treatment on the unit (Dray et al., 2014)	RMD	6 MHNs Setting: Inpatient eating disorder unit	MI rating worksheet in MIASTEP 4 MI sessions 2-month follow-up	MI training: 1. MI adherence - improvement 2. MI competence - improvement 3. MI non-adherence – no change Patient outcomes: Reported that MI was useful and enjoyable with increased CI when MI was used.	MI competence improves with practice. MI was well received by MHNs. Providing MI was a cost-effective method. Effective in decreasing premature discharge rates. <u>Limitations:</u> 1. Small sample size. 2. Feedback was collected by trainers, which could affect the honesty of responses. 3. No baseline measure
To examine the outcomes of a brief educational module for GNS in using MI consistent counseling skills	Quasi-experimental	14 GNS BEM of MI	Pre- and posttest narrative, videotaped data, surveys, and self-report.	Fewer closed questions, more open-ended questions, and lesser advice were noted in narratives at post-test. Videotaped revealed more affirmations, use of reflections, and more summaries.	It is not known if a BEM of MI is sufficient for NPs. More intensive MI training is recommended. <u>Limitations:</u> Small sample size, lack of a control group, use of simulated pts encounter.

Purpose	Study Design & Key Variables	Sample & Setting	Measures	Findings	Authors' Conclusions; Limitations & Notes
(Nesbitt, Murray, & Mensink, 2014).					

Note. BEM – Brief Educational Module; CI- confidence interval; comMIt – motivational interviewing training; HCP – healthcare providers; IP – inpatient; GNS – graduate nursing students; MHNs – mental health nurses; MI – motivational interviewing; MIASTEP – Motivational Interviewing Adherence-step "Supervisory Tool for Enhancing Proficiency"; PCN – primary care nurses; PCS – primary care setting; PM – project managers; pts – patients; PTs – psychiatric technicians; RCT – randomized controlled trials; RMD – repeated measures design; RNs – Registered Nurses.

APPENDIX B

MOTIVATIONAL INTERVIEWING TRAINING MODULE

Objective II: Motivational Interviewing Skills

- Reflective listening: Round Robin
- Roadblocks to effective listening
- Summarizing
- Rolling with resistance
- Role play: 3-buddy interview

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Motivational Interviewing Lecture

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Please write you responses on the white poster paper

1. Reasons why clients with schizophrenia gain weight
2. Traditional weight loss interventions or activities
3. Excuses why obese clients with schizophrenia don't use weight loss interventions
4. What are the health risks associated with obesity?

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Potential problems why clients won't adhere to treatment

1. Lack of knowledge
   – Clients are not sure of what to do or misunderstood and not ask for clarification
2. Problems putting adherence information into practice
   – Clients may agree but don't know how to implement or may have barriers
3. Problems taking on board the importance of adherence
   – Clients may be anxious when they feel that they have to make an impossible change in their habits
4. Deliberately choosing not to adhere
   – Some clients would rather enjoy life rather than make a change, no matter what the consequences are

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What is Motivational Interviewing?

- Motivational Interviewing (MI) is a collaborative, person-centered form of guiding to elicit and strengthen motivation for change.
- Failure to inspire clients because of their lack of motivation and "stuck" in **ambivalence** (simultaneous feelings)
- MI is a counseling style that elicits behavioral change by helping clients resolve ambivalence
  – Miller and Rollnick, 2009

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Reasons for Motivational Interviewing's Popularity

- Carefully defined and rigorously studied psychosocial treatments that started for substance abuse individuals
- Is a relatively brief intervention
- Positively impacts treatment and retention
- Has wide application to behavioral domains
- Compatible with many different approaches

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Efficacy of Motivational Interviewing in Literature

- Factors associated with weight gain in adults with schizophrenia
  - Sedentary lifestyle, negative symptoms of schizophrenia, and antipsychotic medications SEs.
- Weight management measures for obese adults with schizophrenia
  - Diet, exercise, and cognitive behavioral therapy (CBT)
- Motivational interviewing to improve weight loss
  - Primary care and mental health facilities
- Training nurses in motivational interviewing
  - Brief MI effective in mental health setting by nurses and PTs

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The Spirit of Motivational Interviewing

- Spirit of MI Style   vs
  - Collaborative
    - Partnership is formed, LVN/PT respects the client's views
  - Evocation
    - LVN/PT activates clients motivation to want to change
  - Autonomy
    - The LVN/PT advises the client but also respects the client's freedom not to change

- Paternalistic Style
  - Confrontation
    - LVN/PT tries to persuade and coerce the client to change
  - Education
    - The LVN/PT presumes the client lacks insight and tells him what to do
  - Authority
    - The LVN/PT instructs the client to make changes

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"Spirit" of MI Techniques

- Motivation to change is elicited from the client, and not imposed from without.
- It is the client's task, not the counselor's, to articulate and resolve his or her ambivalence.
- Direct persuasion is not an effective method for resolving ambivalence.
- The counseling style is generally a quiet and eliciting one.
- The counselor is directive in helping the client to examine and resolve ambivalence.
- Readiness to change is not a client trait, but a fluctuating product of interpersonal interaction.
- The therapeutic relationship is more like a partnership

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The Theory and Main Principles of MI

1. Don't tell clients what to do
   - Because it doesn't work, even if you're right
2. Listen
   - Be empathic and genuine in your attempt to understand
3. Let the client tell you they need to change
   - It is more powerful if it comes from not client and not from you
4. Cognitive dissonance
   - Clients are struggling with a choice that makes them uncomfortable
5. Clients need to feel confident before trying to change
6. Ambivalence is normal

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DEARS: Five Basic Strategies of MI

- Develop Discrepancy
  - Between a client's goals and his current behavior
- Express Empathy
  - Start a conversation by reflective listening and accept the client's feelings
  - Don't judge, criticize, or blame the client
- Avoid Argumentation
  - Direct confrontation leads to resistance and for the client to do as he pleases
- Roll with Resistance
  - Reluctance is natural and understandable, "take what you want and leave the rest
- Support Self-efficacy and optimism
  - Allow the client to choose and carry out personal change

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Resistance is the client saying
"I'm not with you"

- Challenging
  - "You say I'm fat because I don't exercise but I tell you it's the because of the meds"
- Discounting
  - "I'm not talking to someone who is skinny and probably never gained weight before"
- Hostility
  - "The doc said I have to talk to you about losing weight, well here I am but I'm not talking"
- Blaming
  - "I'm not the one with a problem, I overeat because I'm stressed out"
- Disagreeing
  - "Diet and exercise sounds good in theory but who has the time to do that"

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Resistance - continued

- Excusing
  - "I want to exercise but my illness makes me lazy and unmotivated"
- Claiming impunity
  - "I don't have any problems with my weight, in fact I feel healthier this way"
- Minimizing
  - "I am not that fat, you should see the other clients, boy do they have problems"
- Pessimism
  - "I won't ever be able to get a job, that's why I'm on disability"
- Reluctance
  - "I'm not sure I want to lose weight anyway"
- Unwillingness to change
  - "I figure if I'm going to die, might as well die happy by not going on a diet and exercising"

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Strategies for Rolling with Resistance

- Reflective listening
  - Simple reflection, reflection of feeling, or double-sided reflection
- Shifting focus
  - Redirect the client to the issue at hand
- Reframing
  - Take something the client doesn't like about himself and rephrase it as a strength
- Emphasize personal choice and control
  - "I agree. No one can or should be able to make you do anything against your will"
- Side with the negative
  - "It may be that you find it's just too difficult to change, maybe even hopeless"

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Motivational Interviewing Techniques
OARS

- Open-ended questions
- Affirmations
- Reflective listening
- Summaries

OARS: Open-Ended Questions

- Open-ended questions cannot be answered with a single word or phrase
- These type of questioning are great for opening up and continuing a conversation
  - "Would like to lose weight?" vs "How do you feel about your weight?"
  - "How much ice cream do you eat?" vs "Please tell me more about what you eat for dessert?"
  - "How long ago did you take your med?" vs "Tell me about the last time you took your medicines"

OARS: Affirmations

- Support the client
- Convey respect and understanding
- Help clients reveal less positive aspects of themselves
- Affirmation statements:
  - "Dealing with weight issues is difficult"
  - "You have worked so hard"
  - "I can understand why eating feels good to you"
  - "It is difficult to start exercising"

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OARS: Reflective Listening

- Goal: To facilitate further client comment
- Method: Restate the client's words in a non-judgmental manner
- Speak a statement, not a question
- Reflecting or repeating back what a client said in a neutral form
  - "You can eat an *entire bag* of chips at once?" vs "sometimes you can eat a bag of chips"

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Simple Reflection

- Take part of what the client is saying and rephrase in your own words
  - Client - "I'm not going to start taking my meds anytime soon
  - LVN/PT - "You don't think it would help you right now"

  - Client - "I can't start eating like that, none of my friends eat that way!"
  - LVN/PT - "It's difficult for you to think of changing your eating habits because you are surrounded by people who don't eat in the way I am suggesting."

  - Client - "My boyfriend gets really angry when I eat French fries"
  - LVN/PT - "So, he gets mad when you eat French fries"

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Reflection of Feeling

- Determining the feelings and emotions of the client's message
- Paraphrase that emphasizes the emotional tone of the message
  - Client - "I really want to stop taking my meds because it's making me fat"
  - LVN/PT - "You feel discouraged because of the medications side effects"

  - Client - "I really want to leave my board and care. Everybody's smoking weed ant they're not getting kicked out"
  - LVN/PT - "You're disappointed that the your living arrangements is not a safe and supportive place you'd hoped it would be"

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Double-sided Reflection

- Acknowledge and amplify the ambivalence
- Talk about the reason not to change and the reason to change
- The trick is in the order of reflection, which should conclude with the positive statement
  - Client - "I know you want me to start taking all my meds, but I'm not going to"
  - LVN/PT - "You don't want to talk about the medication, though you can see it's a big concern"

  - Client - "It really helped to have a smoke after I didn't get the job…but then I started coughing again and my wife gave me the "death stare"
  - LVN/PT - "So on one hand you felt that smoking helped you cope with your disappointing news, and at the same time you noticed you were coughing again and your wife wasn't happy about that…"

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OARS: Summarize

- Powerful way to pull together what the client has been saying and reflecting it back to him
- Demonstrates listening and understanding the clients perspective
- Goal: Designate transition point
  "What you've said is important"
  "This is what I hear you saying"
  "We covered that well. Now let's talk about…"

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Summarizing

- A special application of reflective listening that links together:
  1. Discussed material
  2. Demonstrates careful listening
  3. Prepares the client to move on
- Transitional summary - helpful in expressing the client's ambivalence:
  1. The pros - "on the one hand…"
  2. The cons - "on the other hand…"
  3. An invitation to continue - "at the same time…" "what else?"
- Major summary - comes at the end of a session, formal phrases:
  - "Let me see if I understand what you've told me so far…"
  - "Please let me know if I missed anything"

Eliciting Change Talk

- Change talk - statements by the client considering, motivated, or considering to change
  - **Ask evocative questions** - open questions lead to change talk
  - **Explore pros and cons** - decisional balance of changing or staying obese
  - **Ask for elaboration** - more details, "Tell me more about your desire to lose weight"
  - **Imagining extremes** - "what are the worse things that might happen if you don't lose weight?"
  - **Looking forward** - "what will happen if you're still obese?" "What will happen if you were successful and lost weight?"
  - **Looking backward** - "how was it before you wanted to lose weight?"
  - **Come alongside** - side with the negative, "perhaps gaining weight is so important to you that you won't want to lose it, no matter what the cost"

Preparatory Change Talk (DARN)

- Desire: "I want to change"
- Ability: "I can change"
- Reason: "It's important to change"
- Need: "I should change"

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Implementing Change Talk (CAT)

- Commitment: "I will make changes"
- Activation: "I am ready, prepared, willing to change"
- Taking Steps: "I am taking specific actions to change"

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Clinical Challenges

- Actively psychotic client
  - Avoid too many open-ended questions
  - Be more affirming and keep reflective statements brief
- Manic client
  - May take the entire session answering one open-ended question
  - Take lead and respectfully interrupt the client
  - Offer transitional summaries, focus on change talk
- Withdrawn client
  - Be patient, avoid the temptation to aske close-ended questions
  - Ask open ended question and wait for a response
- Client with disorganized thoughts
  - Build rapport, empathize, and use affirmations
  - Avoid giving advice, persuade, or sympathize
  - You might have to postpone until the client's symptoms are stabilized

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How to translate MI Interventions into Progress Notes

- Document client's current BMI
- Document using MI keywords such as:
  - Affirmed the client's successful efforts to lose weight
  - Reflective listening - acknowledge that client wanted to blame his obesity to the SEs of the meds so he stopped taking them
  - Open-ended questions - asked the client the important reasons to lose weight
  - Summarized the clients statements about the good things and some not-so-good things about remaining obese
  - Eliciting change talk - asked the client to describe the worst things that could happen if he were to go on a diet and exercise

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Motivational Interviewing Practice Skills

Reflective Listening

- Format: Round robin
- Materials: Reflective listening statements handout
- Time allotted: 15 minutes
- Instructions:
  1. Read one statement to the person next to you
  2. The recipient must respond with either a:
     a. Simple reflection
     b. Reflection of feeling
     c. Double-sided reflection

Roadblocks to Effective Listening

- Format: Spontaneous participation
- Materials needed: Roadblocks to communication
- Time allotted: 15 minutes
- Instructions:
  1. A client refuses to take his antipsychotic meds because they are making him fat and he would rather deal with the hallucinations
  2. Respond to the client with your assigned roadblock number

Summarizing

- Format: Dyads
- Materials needed: None
- Time allotted: 30 minutes
- Instructions:
  1. Get into pairs. One person talk about their time in LVN/PT school, first job, or about their summer...the good and the bad.
  2. Listener uses reflections, affirmations, and open-ended questions
  3. Use transitional summary (double-sided reflection) "What else"
  4. Use major summary, that comes at the end "So let me see if I understand so far...did I get this right?"

Rolling with Resistance

- Format: Dyads, then whole group
- Materials: Rolling with resistance statements
- Time allotted: 30 minutes
- Instructions:
  1. Everyone will be assigned a resistant statement. Work in pairs for support.
  2. You have 5 minutes to form your response, which should be a reflective statement of your choice (simple, reflection of feeling, or double-sided).
  3. Get together as a group and read your statement and your response

Role Play

- Format: Groups of three
- Materials needed: List of excuses not to lose weight
- Time allotted: 60 minutes
- Instructions:
  1. Group of three with roles that rotates per scenario (staff, client, coach)
  2. Each group will choice *three* "excuses" from the list
  3. Each group has 15 minutes to prepare and 5 minutes to present each scenario

What to do next after the training

- Apply MI interventions to all obese clients (BMI $\geq$ 30)
- Document your interventions in the EHR
- I will pass by in 6 then 12 weeks to offer short-term booster sessions
- A follow-up survey will be given in 4-months regarding the MI intervention experience
- Thank you for your participation and caring for our clients

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References

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APPENDIX C

PACIFIC CLINICS IRB APPROVAL

Pacific Clinics
ADVANCING BEHAVIORAL HEALTHCARE
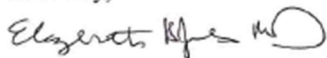
October 17, 2018

Andrew Sanchez, MSN/Ed, FNP-BC
1160 S. Grand Avenue
Glendora, CA 91740

Dear Mr. Sanchez:

SUBJECT: Motivational Interviewing Training for Mental Health Care Teams: Focus on Weight
Management

The Pacific Clinics Institutional Review Board (IRB) reviewed and approved the application
and proposal summary for the above study. Documentation and protocol modifications will be
kept on file at Pacific Clinics. The Pacific Clinics approval period is from October 18, 2018 to
October 17, 2019. Approval for any ongoing project must be renewed on a yearly basis. We
also require that you report progress on an annual basis, including any adverse events, dilemmas,
or breaches of confidentiality and proposed solutions. Also, any changes to the research
protocol, or informed consent cannot be implemented without prior Pacific Clinics' IRB
approval, except in an emergency to eliminate immediate danger to a participant.

Sincerely,

Elizabeth Jenks, PhD
Interim Chair, Pacific Clinics IRB

cc: Shawn Caracoza, LCSW, Chief Clinical Officer
        Administrator, Pacific Clinics
        Victoria Onwuala, LCSW, Divisional Director, Portals

APPENDIX D

CALIFORNIA STATE UNIVERSITY, FULLERTON IRB APPROVAL

From: irb@fullerton.edu
Subject: HSR-18-19-165 - Initial: Approval Letter - Initial - Exempt
Date: October 8, 2018 at 9:53 PM
To: ac.sanchez@csu.fullerton.edu, drutledge@fullerton.edu
Cc: irb@fullerton.edu

CALIFORNIA STATE UNIVERSITY, FULLERTON

Office of Research and Sponsored Projects
P.O. Box 6850 or 1121 N. State College Blvd., 2nd Fl., Fullerton, CA 92831 / T 657-278-7719 / F 657-278-7238

APPROVAL NOTICE

From the Institutional Review Board
California State University, Fullerton

October 8, 2018

From: Dr. Matt Englar-Carlson, Chair
CSUF Institutional Review Board

To: PI: Andrew Sanchez

Application No. HSR-18-19-165
Study Title: Motivational Interviewing Training for Mental Health Care Teams: Focus on Weight Management

Re: Initial Exempt Review

The forms you submitted to this office regarding the use of human participants in the above-referenced proposal have been reviewed by the Regulatory Compliance Coordinator and the Chair of the California State University, Fullerton, Institutional Review Board. Your proposal is determined to be Category 2. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) 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.

·

The CSUF IRB has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval notice does not replace any departmental or additional approvals which may be required.

It is of utmost importance that you strictly adhere to the guidelines for human participants and that you follow the plan/methodology/procedures described in your research proposal. Since your proposed was determined to be exempt, there is no further review or annual renewal required by the CSUF IRB. However, **any change in protocol or consent form procedure requires re-submission to the CSUF IRB for approval prior to implementation.** Additionally, the principal investigator must promptly report, in writing, any unanticipated or adverse events causing risks to research participants or others.

Please be advised that if you are seeking external funding for this proposal, the above-reference title should match exactly with the title submitted to the funding sponsor. Any changes in project title should be submitted to the CSUF IRB prior to implementation.

By copy of this notice, the chair of your department (and/or co-investigator) is reminded that their responsibility for being informed concerning research projects involving human participants in the department, and should review all protocols of such investigations as often as needed to ensure that the project is being conducted in compliance with our institutional policies and with DHHS regulations.

The institution has an Assurance on file with the Office of Human Research Protections. The Assurance Number is FWA00015384.

Cc: IRB Office
Dana Rutledge

APPENDIX E

PRE-TRAINING SURVEY QUESTIONNAIRE

Question	Response Choice(s)
Question	**Response Choice(s)**
1. What is your professional designation?	Psychiatric Technician (PT) Licensed Vocational Nurse (LVN)
2. How many years have you been working for Pacific Clinics in your profession?	0-3 4-6 7-9 10-12 >12
3. Have you ever been trained in Motivational Interviewing?	Definitely yes Probably yes Might or might not Probably not Definitely not
4. Do you believe that any form of cognitive behavioral therapy could be effective in helping obese clients with schizophrenia lose weight?	Definitely yes Probably yes Might or might not Probably not Definitely not Do not know
5. Give the top three reasons why you believe clients with schizophrenia gain weight.	1: 2: 3:
6. Give the top three effective interventions to lose weight.	1: 2: 3:
7. Give the top three reasons why you believe it is difficult for clients with schizophrenia to lose weight.	1: 2: 3:

APPENDIX F

PRE/POST-TRAINING QUESTIONNAIRE

MOTIVATIONAL INTERVIEWING and WEIGHT LOSS QUIZ

True or False, choose the correct response

1.	Obese clients must accept that they have a problem (e.g., are obese or overweight) before they get help.	True	False
2.	When it comes to behavior changes such as losing weight, the answers mostly lie within each client, and finding them requires some listening.	True	False
3.	Direct persuasion is not an effective method for resolving client ambivalence to losing weight.	True	False
4.	The therapeutic relationship is more like a partnership or companionship rather than expert/recipient roles.	True	False
5.	Resistance to losing weight is best thought of as a product of the interpersonal context in which is observed.	True	False
6.	If clients are resistant to talk about changing their behaviors, direct confrontation and persuasion are required to help the person change.	True	False
7.	The best way to motivate clients with weight problems is to help them resolve their ambivalence about change.	True	False
8.	External pressure and consequences are the only way to make clients change their behaviors and lose weight.	True	False
9.	Therapists' expectancies for their client's abilities to change have no effect upon whether they lose weight.	True	False
10.	The motivational interviewing counseling style is generally a quiet and eliciting one.	True	False

APPENDIX G

FOUR-MONTH POST SURVEY QUESTIONNAIRE

	Question	**Response Choice(s)**
1.	How often did you use Motivational Interviewing techniques with adult obese clients with schizophrenia?	Always Most of the time About half the time Sometimes Never
2.	Are you comfortable in applying Motivational Interviewing skills in your practice?	Definitely yes Probably yes Might or might not Probably not Definitely not
3.	Do you believe that Motivational Interviewing is effective in assisting adult obese individuals with schizophrenia lose weight?	Definitely yes Probably yes Might or might not Probably not Definitely not
4.	Give the top three reasons why you believe clients with schizophrenia gain weight.	1: 2: 3:
5.	Give the top three effective interventions to lose weight.	1: 2: 3:
6.	Give the top three reasons why you believe it is difficult for clients with schizophrenia to lose weight.	1: 2: 3:
7.	Rank which Motivational Interviewing skills have you used in practice (1 most – 5 least).	Affirmations ☐ Reflective Listening ☐ Open-ended Questions ☐ Summarizing ☐ Eliciting Change Talk ☐

8.   What barriers did you experience while implementing the Motivational Interviewing skills to obese clients with schizophrenia?

9.   Do you believe that obese clients with schizophrenia in your clinic benefited from the Motivational Interviewing intervention?

Yes
No
Maybe

10.   What was the most effective weight loss interventions for obese clients with schizophrenia?

11.   Were there other interventions besides Motivational Interviewing effective in assisting obese clients with schizophrenia to lose weight. If so, what were they?

12.   Would you continue to use Motivational Interviewing interventions in your practice?

Definitely yes
Probably yes
Might or might not
Probably not
Definitely not

APPENDIX H

RECRUITMENT SCRIPT

Dear _____,

Hello, my name is Andrew Sanchez. I am doctoral student at CSUF in the Doctor of Nursing Practice (DNP) program. I am conducting a project evaluating the use of a 4-hour motivational interviewing training module, which is being offered as an in-service for LVNs/PTs at the Portals clinic where you work. At the educational session, you will learn evidence-based strategies aimed at helping adult obese clients with schizophrenia to lose weight.

I am inviting you to participate in my project. If you agree, you are invited to complete a consent, pre-training survey, 10 item pretest-posttest and four-month post-training survey evaluating knowledge and attitudes towards motivational interviewing techniques. The surveys (a short baseline survey about you and the Motivational Interviewing and Weight Loss Quiz) should take no more than 10 minutes. The Motivational Interviewing quiz will be given twice the day of the educational program and 4-months after you complete the program; the quiz will be sent to you via your work email address.

Participation in this study is voluntary. Your identity as a participant will not be disclosed during and after the study; all reports of findings will include only data for all participants.

Thank you for your participation,

Andrew Sanchez, MSN/Ed, RN, FNP-BC
DNP Student
Southern California CSU DNP Program

APPENDIX I

CONSENT FORM

California State University Fullerton
Research Study Consent Form

Study Title: Motivational Interviewing Training for Mental Health Care Teams: Focus
on   Weight Management

Researcher: Andrew Sanchez, MSN/Ed, RN, FNP-BC
                 DNP Student, Southern California CSU DNP Program
Advisor: Dana N. Rutledge, PhD, RN, Project Chair

You are being asked to take part in a study carried out by Andrew Sanchez. This consent
form explains the research study and your part in it if you decide to participate. Please
read the form carefully, taking as much time as you need. Ask the researcher to explain
anything you don't understand. You can decide not to join the study. If you join, you can
change your mind later and leave the study at any time with no penalty or loss of
services/benefits.

What is this study about?

This research study aims to evaluate the use of a 4-hour motivational interviewing (MI)
training module. At the training session, you will learn evidence-based strategies aimed at
helping adult obese clients with schizophrenia to lose weight. You are being asked to take
part because you are a licensed vocational nurse (LVN) or psychiatric technician (PT)
who provides direct patient care for obese adults with schizophrenia. You cannot take
part in this study if you are under 18. Taking part in the study involves attending the 4-
hour training and completing surveys pre, immediately post, and 4 months after the
session.

What will I be asked to do if I am in this study?

If you take part in the study, you will be asked to attend the 4-hour training (held at the
Portals New Hampshire site). The training will start with a 90-minute lecture on the
theory of MI. This will be followed by 90-minutes of exercises on specific MI skills. The
training session will conclude with a 60-minute role-play.
You are asked to complete surveys at three time points. Before the training, immediately
after, and at 4 months, you will be asked to complete the 10-item motivational
interviewing and weight loss quiz. You will also be asked to fill out a 7-item pre-training
quiz (baseline information) and at 4 months, a 10-item survey about how you have used
the MI training in your practice.

Are there any benefits to me if I am in this study?

The potential benefits to you for taking part in this study are: you will gain information about MI that was not provided for you in your basic education and this may help you to provide MI interventions for adult obese clients with schizophrenia to lose weight.

Are there any risks to me if I am in this study?

The potential risks from taking part in this study are minimal and include the time you take to participate.

Will my information be kept anonymous or confidential?

The data for this study are being collected without your personal identifiers, and will be kept confidential to the extent allowed by law. Data will be stored in a locked office, and once entered into computer files, these files will be password protected and shared only with study personnel. The data will be kept for 3 years. Study results may be published or presented at professional meetings, but the identities will not be shared.

There will be no costs to you for taking part in this study.

Who can I talk to if I have questions?

If you have questions about this study or the information in this form, please contact the researcher Andrew Sanchez: ac.sanchez@csu.fullerton.edu, (909) 569-8626. If you have questions about your rights as a research participant, or would like to report a concern or complaint about this study, please contact the Institutional Review Board at (657) 278-7719, or e-mail irb@fullerton.edu

What are my rights as a research study volunteer?

Your participation in this research study is completely voluntary. You may choose not to be a part of this study. There will be no penalty to you if you choose not to take part. You may choose not to answer specific questions or to stop participating at any time.

What does my signature on this consent form mean?
Your signature on this form means that:
- You understand the information given to you in this form
- You have been able to ask the researcher questions and state any concerns
- The researcher has responded to your questions and concerns
- You believe you understand the research study and the potential benefits and risks that are involved.

Statement of Consent

I have carefully read, or I have had the terms used in this consent form and their significance explained to me. By signing below, I agree that I am 18+ years of age and

agree to participate in this project. You will be given a copy of this signed and dated consent form to keep.

Name of Participant (please print) _____

Signature of Participant_____Date _____

Signature of Investigator_____Date_____