

MOTIVATIONAL INTERVIEWING EDUCATION  
FOR HOME VISITING ASTHMA  
NURSES

by

Rebecca Ann Romine

A scholarly project submitted in partial fulfillment  
of the requirements for the degree

of

Doctor of Nursing Practice

in

Nursing

MONTANA STATE UNIVERSITY  
Bozeman, Montana

May 2020

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## ACKNOWLEDGEMENTS

I would like to thank my Committee Chair Dr. Polly Petersen, and my graduate committee; Dr. Susan Luparell, Dr. Laura Larsson, and Dr. Maria Wines for their guidance and expertise. Their commitment and patience during this experience were great.

I would also like to thank the Montana Asthma Program and the asthma nursing staff for allowing me to complete my project with them. I am extremely appreciative of their commitment to learning a new skill.

My appreciation is further extended to my husband and family for their continued support throughout my course of graduate education. I do not know what I would have done without them.

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## ABSTRACT

Montana Asthma Program (MAP) nurses currently do not receive motivational interviewing (MI) training and have identified it as an area of development. The desired outcome for this Doctor of Nursing Practice (DNP) scholarly project is to positively affect MAP nurses' knowledge of MI strategies and theories and self-efficacy, or each nurses' belief that they can successfully execute behaviors necessary to produce an MI therapeutic interaction. A brief MI training to increase MI knowledge and self-efficacy of the MAP nurse by 1) attendance of a three-hour asthma-focused MI foundational training course and 2) triad of patient-nurse-recorder role-playing using MI foundations. Content was delivered using PowerPoint slides and lectures with integrated use of role-playing as skills and principles are introduced. A tool used in a previous study by Pyle (2015) was identified as an appropriate self-assessment of self-efficacy and knowledge after completing MI training. Nurses completed this assessment pre and immediately post-training as well as seven months after the educational intervention to see if there was a change. Knowledge question scores ranged from pre-test 3.5 to 2.3 (n = 9) M = 3.05, (SD = 0.33); post-test scores ranged from 3.4 to 3.7 (n = 9) M = 3.57, (SD = .09); and post-test seven-month scores ranged from 3.5 to 3.8 (n = 6) M = 3.6, (SD = 0.07). Self-efficacy question scores ranged from pre-test 2.6 to 3.6 (n = 9) M = 3.21, (SD = 0.37); post-test scores ranged from 3.4 to 3.8 (n = 9) M = 3.62, (SD = .14); and post-test seven-month scores ranged from 3.4 to 4.0 (n = 6) M = 3.67, (S = .18). Knowledge score improvements suggest education retention of background concepts and theories related to MI (Bailey et. al, 2017). Of particular interest is the increase in scores between the post-test and post-test seven-month assessments. The overall increase of mean scores, from pre-test, post-test, and post-seven-month tests indicates an increase in the understanding and self-efficacy of the nurses as it is related to their MI knowledge and use as a communication style.

## CHAPTER ONE – INTRODUCTION

Asthma is a chronic lifelong inflammatory disease of the airways in the lungs. Airways become hyperresponsive to irritants and produce an increase in mucus (Hinkle & Cheever, 2013). The increase in mucus combined with constriction (hyperresponsiveness) leads to symptoms such as cough, dyspnea, and wheezing. Those who have asthma may experience symptoms at night, during the day, at times of increased level of activity, or when contact with an irritant or allergen happens (Hinkle & Cheever, 2013). The underlying cause of the airway hyperresponsiveness is a large component of care. Causes of airway hyperresponsiveness are referred to as triggers, due to their “triggering” of airway constriction in response to an irritant. During an asthma exacerbation, the patient must seek urgent care. Emergent treatment often consists of bronchodilators and oral steroids. In the U.S. 24 million people have asthma with an economic expense of \$56 billion yearly. This expense accumulates through direct medical costs from hospital stays and indirect costs, such as lost school and workdays (Centers for Disease Control [CDC], 2015). In Montana, asthma affects approximately 85,000 people. More than 2,300 Montanans with asthma needed emergency treatment with over 400 asthma-related hospital stays in 2015 (Montana Hospital and Emergency Department Discharge Data [MHEDDD], 2013), with an additional 36% of children diagnosed with asthma who are not treated or have uncontrolled asthma (Montana Department of Public Health and Human Services [MDPHHS], 2013).

A key component of asthma control is working with a team of healthcare professionals to ensure medication compliance, lifestyle changes, and environmental

modifications that are necessary for lung health promotion. Noncompliance of controller medications is common and leads to severe exacerbations, causing emergency department visits and hospital admissions (Williams et al., 2011). Often patients and their families struggle with medication compliance and to the make changes necessary to avoid environmental triggers. The ability of healthcare staff to optimize time with patients to create a collaborative relationship is crucial to effect patient change and contribute to positive health outcomes (Kieft, Brouwer, Francke, & Delnoij, 2014). Motivational interviewing (MI) is a patient-centered counseling approach that can optimize asthma education and management by helping families resolve their ambivalence about change (Miller & Rollnick, 2002).

### Background

The Healthy People 2020 (2020) framework has made the control and management of asthma a priority and has included eight asthma-related objectives. These objectives work to address asthma death, missed work and school days, an increased number of emergency room and office visits, and limitations in physical activity. The effects of asthma for children and their families are significant. Patient outcomes are highly dependent on education and changes in lifestyle factors. The Task Force for Community Preventive Services (TFCPS) synthesized all available evidence for asthma home visiting studies and recommended the use of home-based, multi-trigger, multi-component interventions with an environmental focus of triggers to address asthma in children (TFCPS, 2011). Asthma home visiting education has shown to significantly improve self-management skills in the pediatric asthma population, having a reduction in

hospitalizations and emergency room visits, a decrease in missed school days, and an improvement in school performance (TFCPS, 2011).

The Montana Asthma Program (MAP) is modeled after the TFCPS recommendations. MAP provides free asthma education for patients in their homes that is provided by registered nurses (RNs). MAP RNs serve ten counties in Montana. Topics covered in the curriculum include what asthma is, how to control asthma, and how to avoid asthma triggers through environmental modifications and changes (Fernandes, 2019). The curriculum was developed based on guidelines and research from the Centers for Disease Control and Prevention (CDC), TFCPS recommendations, and addresses the eight Healthy People 2020 objectives (Montana Asthma Control Program [MACP], n.d.).

MAP sites enrolled a total of 428 children as of December 2016. Three hundred and thirty-eight (338) of the 428 children had the opportunity to complete the program. However, only 152 (45%) completed the six contacts outlined in the MAP curriculum (Fernandes et al., 2019). Specific fail to complete program factors for MAP, identified by Fernandes et al. (2019), included scheduling difficulties, educational attainment, mother's age, living environment, readiness to change, and compatibility with the home visiting (HV) MAP nurses. The success of the MAP nurse to be effective and guide families through these changes is a key component of compatibility in asthma home visiting care and a potential area for improvement for MAP nurses. Families often lack not only the knowledge to change their lifestyle but also have mixed emotions and ambivalence to changes.

The ability of the MAP nurse to guide the patient and family through the change process has a direct effect on improving patients' quality of life and health outcomes. Motivational interviewing (MI) is a patient-centered counseling approach that can be integrated into asthma education and management to help families resolve their ambivalence about change, improve asthma outcomes, and adopt lifestyle changes. (Borrelli, Riekert, Weinstein, & Rathier, 2007). Ingoldsby et al. (2013) found that nurses who were trained to use MI and involve families in determining the visit schedule increased retention at intervention sites. MI improves the quality of care with minimal drain on time by reducing daily frustrations of nonadherent patients and decreasing adverse events such as ER visits (Borrelli et al., 2007). In a systematic review, Gesinde and Harry (2018) found favorable results that MI merged with other interventions and support is effective in improving medication adherence and is also more sustainable than MI as a stand-alone intervention.

The use of MI in the promotion of constructive parenting is shown to improve overall health outcomes of the pediatric patient (Sindelar, Abrantes, Hart, Lewander, & Spirito, 2004).

According to Brown et al. (2005), general home visiting predictors of learning objectives are driven by caregiver factors such as education, presence of father or surrogate father in the household, and safety of the neighborhood, but they are not driven by child factors such as age or severity of asthma as implied by the prescribed asthma medication regimen. Dishion and Kavanagh (2003) also found a reduction of problem health behaviors among youth and increased parental motivation toward constructive

parenting when MI was used to encourage maintenance of current positive parenting practices while influencing changes in parenting problems.

MI is proven by empirical evidence in the literature to be beneficial in the treatment of asthma and addresses ambivalence to change (Borrelli et al., 2007). The theoretical development of MI by Miller and Rollnick (1991) was designed to help practitioners evaluate a patients' current stage of change. The Transtheoretical Model of Change (e.g., contemplation, pre-contemplation, preparation, action, maintenance) and therapeutic intervention help patients progress from one stage of change to the next and is the foundation to MI. There are two key aims of MI: (1) building patients' intrinsic motivation to adopt health recommendations and (2) resolving patients' ambivalence about behavior change (Borrelli et al., 2007).

#### Statement of the Problem

MAP nurses currently do not receive MI training and have identified it as an area of developmental need (W. Biskupiak, personal communication, November 14 2017). Nurse MI training could address MAP identified needs of (1) increasing program completion rates, (2) improving medication adherence, and (3) reducing office and ER visits.

#### Purpose Statement and Project Aims

The desired outcome for this Doctor of Nursing Practice (DNP) scholarly project is to positively affect MAP nurses' knowledge of MI strategies and theories and self-efficacy, or each nurses' belief that they can successfully execute behaviors necessary to

produce an MI therapeutic interaction. This project aims to answer the following question: Would a brief MI training increase MI knowledge and self-efficacy of the MAP nurse by 1) attendance of a three-hour asthma-focused MI foundational training course and 2) triad of patient-nurse-recorder role-playing using MI foundations?

### Conceptual Framework

The theoretical underpinning of this educational project is based on adult learning theory. Malcolm Knowles' first book on adult learning theory was published in 1950, which gave insight on how to meet the needs of adult learners (Knowles, 2012). Adult learning theory states that adults are self-directed and will learn information that is useful and relevant to them. Adults bring their own knowledge based on their life experiences and generally like to be actively involved in their learning and in the teaching-learning process. Students are actively involved in the process and are accountable for their own learning (Keating & DeBoor, 2017). Knowles discovered that adults had "tensions, resistance, resentment, and often rebellion" toward formal learning as a result of the "need and the ability to be self-directing" in educational settings (Knowles, 1984, p. 53). From his observations of adult learners, Knowles identified six assumptions of adult learners that comprised the principles of his andragogical model:

1. The need to know: The adult learner needs to know why something is being learned.
2. The learner's self-concept: Because adult learners have a strong self-concept and sense of independence, they may "resent and resist" educational settings where they feel the instructor is "imposing their wills on them."

3. The role of the learner's experience: Adult learners come to educational contexts with a host of work, life, and education experiences.
4. Readiness to learn: Related to the first assumption, this assumption realizes that adults learn content better when it is situationally or psychologically appropriate.
5. Orientation to learning: Adult learners are more capable of absorbing skills or lessons through problem-based or task-centered exercises.
6. Motivation: Unlike younger learners whose motivation to learn comes primarily from external factors, adults' motivation to learn comes from internal factors, such as goal-setting, career ambitions, or even just self-esteem (Knowles, 1984, p. 61).

The social and cognitive differences of adult learners as compared to their traditionally aged counterparts create a need for instructional framework that best facilitates adult learning.

This framework, often called the four principles of andragogy, suggests that adult-centered instruction 1) be highly relevant to assignments, 2) be problem-based to encourage critical thinking and reflective learning, 3) acknowledge prior work and life experience, and 4) be self-paced (Ota, DiCarlo, Burts, Laird, & Gioe, 2006). The four principles of andragogy were integrated into the intervention to help adult learners (MAP nurses) find purpose for MI in their current practice.

#### Significance of Project to Nursing

According to the World Health Organization (2005), there is a critical and expanding need for health professionals to develop new competencies while caring for

individuals with chronic diseases. The widely adopted chronic care model calls for “healthcare system redesign that enables proactive teams of clinicians to interact with informed, activated patients—or patients who have the motivation, knowledge, skills, and confidence to make effective decisions to manage their health” (Greene & Hibbard, 2012, p. 20). It is necessary to distinguish between possessing information versus understanding it and the inclination and ability to act on it appropriately. According to Linden, Butterworth, and Prochaska (2010), health education should move away from the traditional information-based and advice-giving models. Rather a model that embraces and addresses the complex interaction of motivations, cues to action, perception of benefits and consequences, environmental and cultural influences, expectancies, self-efficacy, state of readiness to change, ambivalence, and implementation intentions should be used for health education (Linden et al., 2010). MI is the only technique that addresses ambivalence to change, is fully described and consistently demonstrated as causally and independently associated with positive behavioral outcomes and is supported by empirical evidence (Butterworth, Linden, & McClay, 2007). The use of MI, a collaborative communication style, is an important element for effective practice in a changing healthcare paradigm (Efraimsson, Fossum, Ehrenberg, Larsson, & Klang, 2012). Parents of children with asthma must receive education through collaborative communication to promote change and resolve ambivalence to change. The management of chronic diseases, such as asthma, requires nurses who can help patients navigate the challenges of change.

## CHAPTER TWO – REVIEW OF THE LITERATURE

### Introduction

The purpose of this project was to increase MAP nurse knowledge of MI and self-efficacy following a brief in-service. In this section, the empirical evidence related to MI since its conception in 1983 will be discussed as it relates to this project. For the scope of this project, the literature review was limited to the conceptual development of MI, its application in the healthcare field and asthma, MI's use with the pediatric population, and nurses home visiting.

### History of Motivational Interviewing.

Traditionally, ways of promoting motivation for health self-care have been through confrontational, authoritarian, and coercive methods of counseling. In 1983 Miller first described a way of talking with people to evoke and strengthen their personal motivation for change (Miller, 1996). Miller (1996) described his conception of MI as “not arising from a particular theory, but rather was a set of principles derived from observation of practice in role-playing cases with Norwegian colleagues at the Hjeltestad Clinic near Bergen while on sabbatical leave” (p. 1). On a second sabbatical at the National Drug and Alcohol Research Centre in Sydney Australia, Miller met Steven Rollnick, a professor of clinical psychology at Cardiff University. Together, they developed many of the founding principles of motivational interviewing in their book titled *Motivational Interviewing with Problem Drinkers* (Miller & Rollnick, 1991). The emergence of MI in the mainstream health literature prompted Miller, Rollnick, and

Butler (2008) to write *Motivational Interviewing in Health Care: Helping Patients Change Behavior*. The book introduced a brief MI method referred to as “Spirit of Motivation Interviewing.” The authors emphasize brief due to the time constraints common in the medical setting. Their intended audience was healthcare professionals whose focus required behavioral changes (Emmons & Rollnick, 2001). Today, over 30 decades of research and publications have been applied to multiple areas of care including additional books from Miller and Rollnick, which focus on general behavior change, MI in healthcare, and MI in treating psychological problems. A large base of information is evidenced in the literature.

#### Motivational Interviewing Principles

MI is founded on the principle belief that people are trustworthy, resourceful, capable of self-understanding, and capable of making constructive changes to live productive and effective lives (Miller & Rollnick, 1991). The five principles of MI are described with the acronym READS: roll with resistance, express empathy, avoid argumentation, adjust to client resistance rather than opposing it directly, and support self-efficacy (Emmons & Rollnick, 2001, p. 22). While listening closely, opportunities for validation and empathy present themselves when patients discuss their difficulties in attempting change in the past. While speaking with the patient, the provider should not object to resistance, but rather validate difficulties then change focus of the conversation away from objections and resistance to identifying possible pitfalls, hindsight knowledge learned, and other methods that could facilitate the change. Also, by encouraging the patient to talk about the change and discussing ways that support self-efficacy or each

patients' belief, providers can successfully execute behaviors necessary to produce change that is more likely to produce a change in behavior. The overriding theme of the conversation will directly affect the way patients view change and their ability to complete such changes. If you have a conversation for 30 minutes that focuses on all the things a patient needs to do and why they are not doing them, this behavior is likely to continue. If the provider can change the focus of the conversation to the patient's self-efficacy regarding the change, they are more likely to follow through with the discussed behavior change.

A key element in MI is patients' clarification of their strengths and aspirations which ultimately leads them to a decision of change. For this method of communication to work, the patient must be the one creating a plan, and literally "doing all the talking." When a patient hears, through their own words, an argument or plan for change, they are more likely to succeed. The health care provider can shape and guide the conversation in such a direction by asking questions and allowing the patient to answer. It is through the patient's answers that the provider can determine what stage of change the patient is in. This happens in a four-part process of:

1. Engaging: The relational foundation.
2. Focusing: Guiding the client to a target behavior that is important to them.
3. Evoking: Drawing out the client's intrinsic motivation (reasons/importance for change) and their own ideas for change.
4. Planning: The Bridge to Change. (Miller, & Rollnick, 1991, p. 22)

MI builds intrinsic motivation by discussing how change is consistent with the patient's own values and goals, enhancing the likelihood of both initial change and sustained change (Borrelli et al., 2007). The healthcare professional becomes a consultant in the process of the patient choosing between multiple options. When the patient chooses change, in the form of a "new option" (perspective), and "speaks in defense of a new perspective, even one that is opposite to their prior views, their attitudes and behavior shift in the direction of the new perspective" (Borrelli et al., 2007, p. 24). Hearing themselves argue in favor of change also has shown to enhance the commitment of the "new option" (Borrelli et al., 2007).

#### Motivational Interviewing Strategies

"Commitment on the part of the clinician to the underlying principles or 'spirit' is essential in order to maintain the integrity of the approach as a collaborative rather than manipulative strategy" (Miller & Rollnick, 2012, p. 91). Guiding the patient through the four processes of MI can be remembered by the acronym OARS:

1. Open-Ended Questions: Ensuring the client is doing most of the talking, helping them to explore their own thought processes and behaviors.
2. Affirmations: Recognizing key strengths to help build the client's confidence and acknowledge their own successes.
3. Reflective Listening: Paraphrasing client statements back to them to demonstrate listening and empathy as well as to clarify reasoning.

4. Summarizing: Encapsulating an entire session to help a client move to the next, encapsulating a topic to facilitate moving to a new topic, or clearly linking two topics (Miller & Rollnick, 1991).

It is essential for the provider to give guidance through active listening, probing, reflecting, paraphrasing, and conveying his/her acceptance of the patient (Petrova, 2011). The focus is the individual, not the individual's problem, with emphasis on developing an understanding of the patient's feelings and inner world (Petrova, 2011).

### Search Methods

The focus of the literature reviewed included research centered on MI effectiveness, MI and its application to asthma care, and MI related to nurse training outcomes. In the summer of 2018, a literature search of CINAHL, MEDLINE, Cochrane Library, Global Health, PubMed, and ProQuest using the search term combinations of *motivational interviewing, asthma, education, training, and nurse* provided the foundation of knowledge for this DNP project.

### Use of Motivational Interviewing

To critically evaluate the empirical evidence supporting the efficacy of MI, multiple studies were reviewed for this DNP project. The largest, a meta-analysis of 119 studies conducted between 1989 and 2007, resulting in 132 total MI groups, revealed statistically significant effects of MI on patient outcomes including substance use, health-related behaviors, gambling, and engagement in treatment variables (Lundahl, Kunz, Brownell, Tollefson, & Burke, 2010). Inclusion criteria were studies that isolate the

impact of MI on client behavior change or to provide a clear head-to-head comparison of MI to another intervention. The average effect size across the 132 comparisons and all outcomes was  $g = 0.22$  (confidence interval [CI] 0.17-0.27), which was statistically significant;  $z = 8.75$ ,  $p < .001$  (Lundahl et al., 2010). Lundahl et al. (2010) found an overall average effect size (Hedges's  $g$ ) of 0.22 and reported that the range of effect sizes for individual studies extended from 1.40 to 2.06. Lundahl et al. (2010) results suggested a full 75% of participants gained some improvement from MI, with 50% gaining a small but meaningful effect and 25% gaining to a moderate or strong effect. Lundahl et al. (2010) also found that when compared to other active treatments such as 12-step and cognitive behavioral therapy, the MI interventions took over 100 fewer minutes of treatment on average yet produced equal effects.

The supporting results for MI may be due in part to the technical proficiency of MI. Maghill et al. (2018) tested the full MI theoretical model to “consider which pathways have support, under what conditions, and which, if any, require theoretical revision” (p. 139). A systematic review identified 58 reports, describing 36 primary studies and 40 effect sizes ( $N = 3,025$  participants). The proposed hypotheses of Maghill et al. (2018) are as follows:

We propose two nondirectional hypotheses: (1) therapist relational proficiency (interpersonal model, i.e., average vs. good empathy or MI Spirit) will explain between-study, effect size variability at the  $a$  path (i.e., therapist skills to client language) of the technical hypothesis and (2) client treatment-seeking status (intrapersonal model; i.e., seeking treatment vs. not seeking treatment for behavior change) will explain between study, effect size variability at the  $b$  path (i.e., client language to outcome) of the technical hypothesis. (p. 141)

Maghill et al., (2018) supported the technical hypothesis of MI efficacy finding that therapist MI-consistent skills were correlated with more client change talk ( $r = .55$ ,  $p = .001$ ) as well as more sustain talk ( $r = .40$ ,  $p = .001$ ). MI inconsistent skills were correlated with more sustain talk ( $r = .16$ ,  $p = .001$ ), but not change talk (Maghill et al., 2018, p. 140). These findings suggest that the better a nurse is at encouraging and facilitating change talk, the more likely the patient is to consider and sustain change. They did not find support for the relational hypothesis (interpersonal model, i.e., average vs. good empathy or MI spirit). MI technical skills are a key part of the therapeutic delivery in influencing patient change.

#### Use of Motivational Interviewing in the Pediatric Population

Specifically, in the pediatric population, Gayes and Steel (2014) found MI to be an effective and appropriate intervention for targeting child health behavior changes. This meta-analysis was the first to examine the effectiveness of MI for health behavior change in pediatric populations (Gayes & Steel, 2014). Results of MI produced a small but significant effect size across a range of child health behaviors ( $g = 0.282$ ), indicating that overall, MI outperformed the alternative (Gayes & Steel, 2014, p. 531). The number of MI sessions and follow-up length were not significant moderators; rather, MI was most effective when both parent and child participated in sessions.

#### Use of Motivational Interviewing in Asthma

Gesinde and Harry (2018) conducted a systematic review of the use of motivational interviewing in improving medication adherence for individuals with

asthma. The authors asked: 1) How is MI used to improve asthma medication adherence, 2) How effective is MI in improving asthma medication adherence, 3) How effective is MI when used in different settings, to improve asthma medication adherence, and 4) What are the implications for future use of MI to improve asthma medication adherence in clinical practice? Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) reference standards were used to review the literature. Gesinde and Harry (2018) focused on MI in accordance with descriptions by the originators of MI, Miller and Rollnick. To be included in their meta-analysis, the study had to address how communication technique could be used to improve asthma medication adherence for individuals diagnosed with asthma (Gesinde & Harry, 2018). Altogether, 11 studies were identified that were published between 2001 and 2016. In all the studies reviewed, “12-month post-intervention analyses revealed a mean change in the percentage of inhaled corticoid steroids refills of 11% (MI group) versus 7% in the control group (between group net improvement associated with MI = +3% (-11% to 18%) representing an effect size of  $d = 0.20$  (medium)” (Gesinde & Harry, 2018, p. 3). Another key finding in the study showed that when MI was merged with other interventions and support is effective in improving medication, adherence was also more sustainable than MI as a stand-alone intervention (Gesinde & Harry, 2018).

### Motivational Interviewing Specific to Home Visiting Nurses

Communication is the foundation of the nurse-patient relationship and management of chronic disease. It is common for nurses to feel more comfortable by relying heavily on technical skills and nursing assessment of the patient’s physical health

(Pyle, 2015). The aim of this study, according to Pyle (2015), was to discover if providing brief MI education increased nurses' communication self-efficacy as well as positively affected their ability to motivate positive change among their chronically ill patients. The study intervention provided MI education to 20 nurses who provided home visiting care in two geographically diverse Pennsylvania regions (rural and urban). A "25% increase in the nurses' self-efficacy noted between the pre-test and the post-test scores demonstrated the overall effectiveness of the EBP change. A t-test was calculated,  $t(34) = 6.92; p < 0.001$  representing the statistical significance of this EBP change" (Pyle, 2015, p. 82). The two geographically different groups of nurses expressed similar experiences with the implementation and that it became easier and more natural the more they used the communication style (Pyle, 2015).

The reviewed literature showed strong support for the use of motivational interviewing with chronically ill patients, including asthma (Lundahl et al., 2010; Maghill et al., 2018). There was also support for MI within the home visiting area of care with the pediatric population (Gayes & Steel, 2014; Pyle, 2015). This evidence was used to support the premise of this DNP project.

## CHAPTER THREE – METHODS

### Introduction

The purpose of this project was to increase MI knowledge and self-efficacy of the MAP nurse through a three-hour asthma-focused MI training course, which included a role-playing triad of patient-nurse-recorder using MI skills taught in the class. The self-efficacy of the MAP nurse to facilitate change talk will greatly affect the ability of the patient to consider and sustain change. The nurse must use MI to promote self-health management and encourage families to resolve their ambivalence to change.

### Quality Improvement Intervention

This three-hour evidence-based education curriculum was guided by the four principles of andragogy in adult learning theory and was developed specifically for use by MAP nurses on the use of brief MI as a communication style to influence asthma self-care. The curriculum proposal (Appendix A) was integrated into the current MAP educational curriculum with a focus on patient-centered care through an MI communication style. Integration of the current MAP education curriculum helped to build need and relevance for adult learners to promote learning as outline in the four principles of andragogy. This MI education project aims to teach MAP nurses how to change their communication style and have a greater influence on patient change in health behavior. Content was delivered using PowerPoint slides and lectures with integrated use of role-playing as skills and principles were introduced. Role-playing also integrated another principle of andragogy through a problem-based activity, which

encouraged critical thinking and reflective learning. Nurses were able to draw on their past experiences to find purpose in the curriculum for their practice as well as directly apply newly learned communication skills and theories. Montana State University IRB approved this project.

### Learner Profile

MAP registered nurses from 10 counties within Montana attended the MI training course. The MAP paid for participants to attend and provided this training to MAP nurses as part of the annual in-service that is attended by nurses from each county annually. The MAP believed this training would be beneficial and aid the home visiting RNs in patient communication.

### Procedures/Measures

Through a review of literature, a tool used in a previous study by Pyle (2015) was identified as an appropriate self-assessment of self-efficacy and knowledge after completing MI training (Appendix B). There is no data to suggest reliability or validity of the tool. With the permission from Dr. Pyle, this tool was used to assess nurse knowledge and self-efficacy of MI to determine if there was a change in MI knowledge and self-efficacy. Nurses completed this assessment pre and immediately post-training as well as seven months after the educational intervention to see if there was a change. Words picked by each participant were used as anonymous identifiers. This method of identification was chosen as it was recommended due to participants being likely to remember an identifier if it was their choosing. A series of 19 items are rated on a scale

of 1 to 4 for a total high score of 76 and low score of 19. A total score was calculated by tallying responses to all 19 items, and an analysis of just knowledge and self-efficacy questions was examined. Of the nineteen questions 1, 2, 8, 9, 10, 13, 15, 17, 18, and 19 assessed knowledge (ten questions), and 3, 4, 5, 6, 7, 11, 12, 14, and 16 assessed self-efficacy (nine questions). A demographic survey was also administered (Appendix C).

### Data Analysis

Individual samples were used to examine whether participation in the provided MI intervention was associated with increased MI knowledge and self-efficacy. A power analysis showed the sample size was not large enough to show significance. Nine individuals participated in this study ( $n = 9$ ). Descriptive statistics were used to analyze the data.

### Results

Attendance at the educational intervention and MAP training was limited due to the weather conditions preventing travel during the month of March in Montana. Nine nurses were able to attend. Of the nine nurses present, four were educated at the BSN level and the other five were Associate Degree Registered Nurses (ADRN). All nurses in attendance were female between the ages of 31 to 54 years of age. All admitted to previous experience with MI through a yes/no indication on the demographics survey.

Total pre-test scores for all 19 questions ranged from 51 to 65 ( $n = 9$ )  $M = 60.2$ , ( $SD = 4.3$ ); Post-test scores ranged from 60 to 76 ( $n = 9$ )  $M = 69.5$ , ( $SD = 5.6$ ), and post-test seven-month scores ranged from 55 to 76 ( $n = 6$ )  $M = 69.7$ , ( $SD = 8.4$ ). Pre-test to

post-test scores revealed an average 15.4% increase in MI knowledge and self-efficacy, with 13.12% maintained at the post-test seven-month assessment. Figure 1 (below) displays the total scores for questions 1-19 of the RN self-assessment.

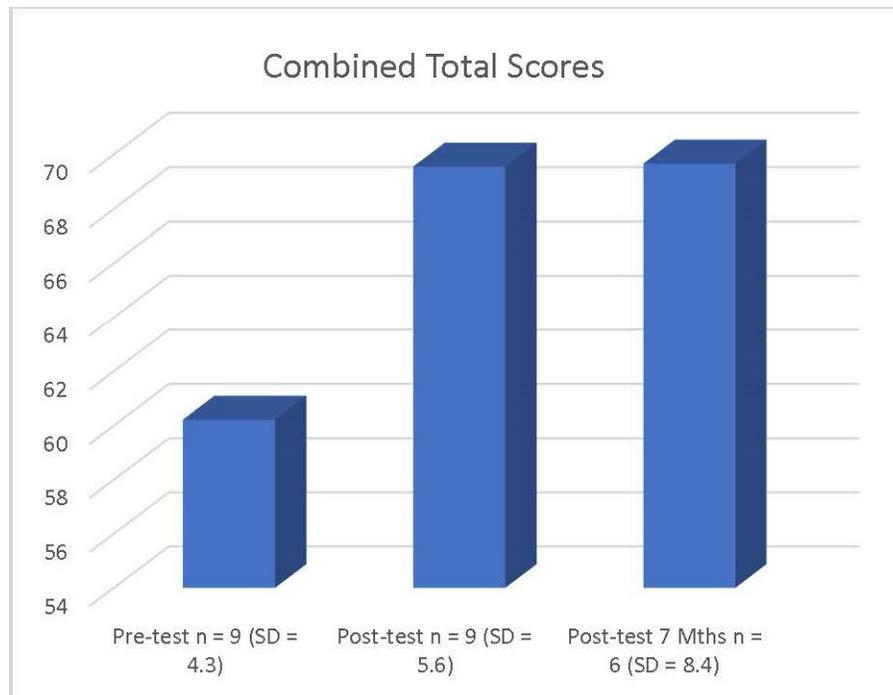


Figure 1. Combined Total Scores

Upon further examination of the scores based on knowledge and self-efficacy, results indicate that nurses appeared to retain information (see Figure 2) at the seven-month collection point. Knowledge question scores, which were rated on a scale of 1 to 4, with 4 being the highest rating, ranged from pre-test 3.5 to 2.3 ( $n = 9$ )  $M = 3.05$ , ( $SD = 0.33$ ); Post-test scores ranged from 3.4 to 3.7 ( $n = 9$ )  $M = 3.57$ , ( $SD = .09$ ), and post-test seven-month scores ranged from 3.5 to 3.8 ( $n = 6$ )  $M = 3.6$ , ( $SD = 0.07$ ). Self-efficacy question scores, which also were rated on a scale of 1 to 4, with 4 being the highest rating, ranged from pre-test 2.6 to 3.6 ( $n = 9$ )  $M = 3.21$ , ( $SD = 0.37$ ); post-test scores

ranged from 3.4 to 3.8 ( $n = 9$ )  $M = 3.62$ , ( $SD = .14$ ), and post-test seven-month scores ranged from 3.4 to 4.0 ( $n = 6$ )  $M = 3.67$ , ( $S = .18$ ). Thus, it appeared that the nurses mostly retained their knowledge of MI and self-efficacy seven months after training.

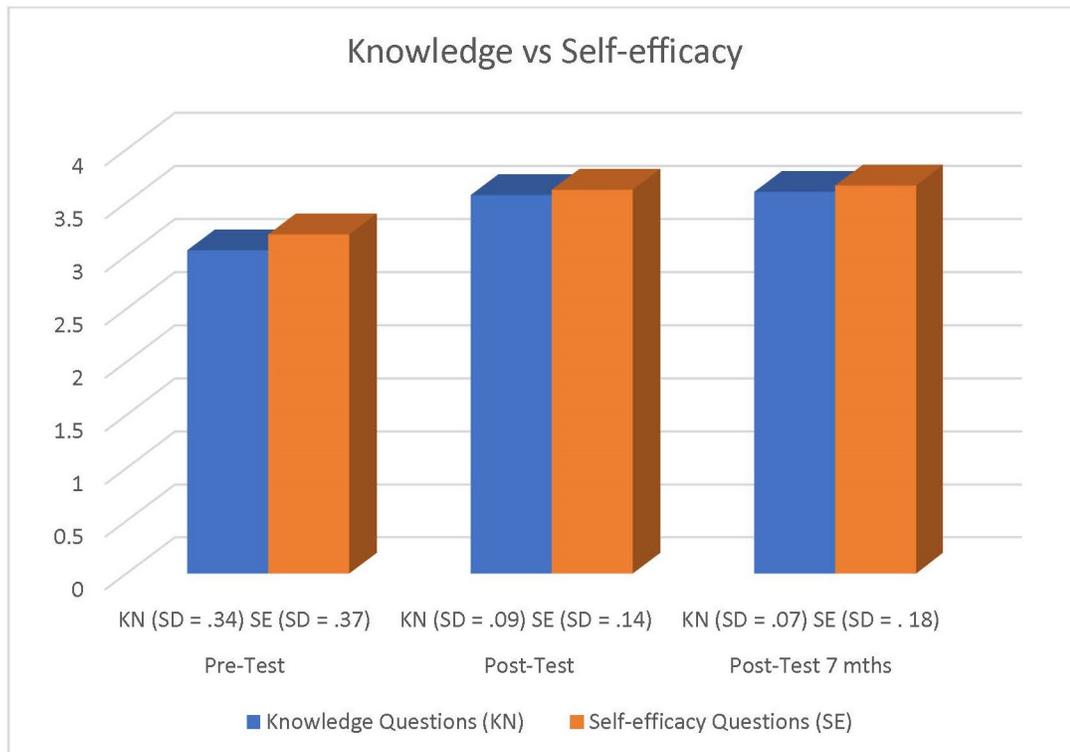


Figure 2. Knowledge vs. Self-Efficacy

This project aimed to answer if a brief MI training would impact nursing practice by increasing MI knowledge and self-efficacy. Knowledge score improvements suggest education retention of background concepts and theories related to MI (Bailey, Curington, Brown, Hegener, & Espel, 2017). Of particular interest is the increase in scores between the post-test and post-test seven-month assessments. The overall increase of mean scores, from pre-test, post-test, and post-seven-month tests indicates an increase

in the understanding and self-efficacy of the nurses as it is related to their MI knowledge and use as a communication style.

### Discussion

Throughout the literature on MI, the relationship between MI's positive effect on chronic disease is well documented. However, nurses still embrace an expert advice-giving model of communication. Many nurses believe that providing information about healthcare choices and decisions will motivate patients and caregivers to make changes; however, this is not often the case. Research studies show that MI has the potential to change behaviors when trying to prevent the progression of chronic disease (Bishop & Jackson, 2013) and improve outcomes of patients with chronic health issues, such as children with asthma, regardless of their location.

Literature suggests MI implementation and sustained practice is the ongoing effort, which must be supported by MAP leadership (Bishop & Jackson, 2013). It will be important for the MAP program to find ways to continue MI education and support to maintain nurse knowledge and self-efficacy as it is unlikely MI knowledge and self-efficacy will continue to be utilized over time without intervention. Research has yet to standardize the appropriate time needed for MI training and the time needed to support ongoing MI practices (Bailey et. al, 2017). There is a need for research on the most effective and efficient training methods to engage students in MI learning and sustained practice (Bailey et. al, 2017).

The desired outcome for this DNP scholarly project was to positively affect MAP nurses' knowledge of MI strategies and theories and, therefore, possibly affect their

nursing practice through increased self-efficacy with the use of MI. This outcome is supported by the noted increase in both MI knowledge and self-efficacy scores at the initial post-test to the seven-month post-test scores, indicating that MAP nurses continued to seek MI knowledge and utilize MI in their practice. This could also be indicative of a change in practice; however, more research would be needed to accurately determine why scores continued to increase seven months after the intervention. This also raises questions regarding what post-seven-month scores could be had an additional training effort been implemented during this period of time.

This project is limited by the lack of a control group and a non-standardized knowledge evaluation tool. Also, the identifying words picked by each participant were used as anonymous identifiers. Data collected at the seven-month assessment created difficulties for paired samples as four of the six post-seven-month assessments did not have a valid previously used identifier. It is suggested that further studies create a locked key as a resource should identifiers become an issue in the future. Other areas of limitation include the effects on patients. Although the program does collect data regarding patient medication compliance, number of asthma exacerbations, and asthma care knowledge, the length of this project did not allow for a correlation between patient outcomes and MI implementation.

One should be encouraged by the increases in scores in both post-tests as compared to pre-test scores. MAP nurses are in a good position to make changes in the lives of pediatric asthma patients and their caregivers with the knowledge to change their communication style and interactions. Through MI, MAP nurses now have a greater

ability to guide the patient and family through the change process having a direct effect on patients' quality of life and health outcomes. The data suggests nurses also appreciate and understand the importance of involving families in determining the visit schedules to increased retention rates through the use of MI. Lastly, the integration of MI to the existing MAP intervention has created a solid platform for nurses to have a greater effect on patient outcomes.

REFERENCES CITED

- Bailey, L., Curington, R., Brown, B., Hegener, M., & Espel, M. (2017). Motivational interviewing education: Creation and assessment of a learning module implemented among advanced pharmacy practice students. *Currents in Pharmacy Teaching and Learning*, 9(5), 786-793.
- Bishop, C. J., & Jackson, J. (2013). Motivational interviewing: How advanced practice nurses can impact the rise of chronic diseases. *The Journal for Nurse Practitioners*, 9(2), 105-109.
- Borrelli, Riekert, Weinstein, & Rathier. (2007). Brief motivational interviewing as a clinical strategy to promote asthma medication adherence. *The Journal of Allergy and Clinical Immunology*, 120(5), 1023-1030.
- Brown, J. V., Demi, A. S., Celano, M. P., Bakeman, R., Kobrynski, L., & Wilson, S. R. (2005). A home visiting asthma education program: challenges to program implementation. *Health Education & Behavior*, 32(1), 42-56.
- Butterworth, S., Linden, A. & McClay, W. (2007) Health coaching as an intervention in health management programs. *Disease Management & Health Outcomes*, 15 (5), 299–307.
- Centers for Disease Control (CDC). (2015). *Asthma Surveillance Data*. Retrieved from <http://www.cdc.gov/asthma>
- Dishion, T. J., & Kavanagh, K. (2003). *Intervening in Adolescent Problem Behavior: A Family-Centered Approach*. Guilford Press.
- Emmons, K. M., & Rollnick, S. (2001). Motivational interviewing in health care settings: opportunities and limitations. *American Journal of Preventive Medicine*, 20(1), 68-74.
- Efrainsson, E., Fossum, B., Ehrenberg, A., Larsson, K., & Klang, B. (2012). Use of motivational interviewing in smoking cessation at nurse-led chronic obstructive pulmonary disease clinics. *Journal of Advanced Nursing*, 68(4), 767-82
- Fernandes, J. C., Biskupiak, W. W., Brokaw, S. M., Carpenedo, D., Loveland, K. M., Tysk, S., & Vogl, S. (2019). Outcomes of the Montana Asthma Home Visiting Program: A home-based asthma education program. *Journal of Asthma*, 56(1), 104-110.
- Gayes, L. A., & Steele, R. G. (2014). A meta-analysis of motivational interviewing interventions for pediatric health behavior change. *Journal of Consulting and Clinical Psychology*, 82(3), 521.

- Gesinde, B., & Harry, S. (2018). The use of motivational interviewing in improving medication adherence for individuals with asthma: A systematic review. *Perspectives in Public Health*, 1757913918786528.
- Greene, J., & Hibbard, J. H. (2012). Why Does Patient Activation Matter? An Examination of the Relationships Between Patient Activation and Health-Related Outcomes. *Journal of General Internal Medicine*, 27(5), 520–526. <http://doi.org/10.1007/s11606-011-1931-2>
- Healthy People 2020 (HP2020) (2018). Respiratory disease objectives. *Office of Disease Prevention and Health Promotion*. Retrieved from <https://www.healthypeople.gov/2020/topics-objectives/topic/respiratory-diseases/objectives>
- Hinkle, J. L., & Cheever, K. H. (2013). *Brunner & Suddarth's Textbook of Medical-Surgical Nursing*. Lippincott Williams & Wilkins.
- Ingoldsby, E. M., Baca, P., McClatchey, M. W., Luckey, D. W., Ramsey, M. O., Loch, J. M., ... Olds, D. L. (2013). Quasi-experimental pilot study of intervention to increase participant retention and completed home visits in the nurse-family partnership. *Prevention Science : the Official Journal of the Society for Prevention Research*, 14(6), 525–534. doi:10.1007/s11121-013-0410-x
- Keating, S. B., & DeBoor, S. S. (Eds.). (2017). *Curriculum Development and Evaluation in Nursing Education*. Springer Publishing Company.
- Kieft, R. A., de Brouwer, B. B., Francke, A. L., & Delnoij, D. M. (2014). How nurses and their work environment affect patient experiences of the quality of care: a qualitative study. *BMC health services research*, 14, 249. doi:10.1186/1472-6963-14-249
- Knowles, M. S., Holton III, E. F., & Swanson, R. A. (2012). *The adult learner*. Routledge
- Knowles, M.S. (1984), *The Adult Learner: A Neglected Species*, 3rd ed., Gulf Publishing Company, Houston, TX.
- Linden, A., Butterworth, S., & Prochaska, J. (2010). Motivational interviewing-based health coaching as a chronic care intervention. *Journal of Evaluation in Clinical Practice*, 16(1), 166-174.
- Lundahl, B. W., Kunz, C., Brownell, C., Tollefson, D., & Burke, B. L. (2010). A meta-analysis of motivational interviewing: Twenty-five years of empirical studies. *Research on Social Work Practice*, 20(2), 137-160.

- Maghill, M., Apodaca, T. R., Borsari, B., Gaume, J., Hoadley, A., Gordon, R. E., ... & Moyers, T. (2018). A meta-analysis of motivational interviewing process: Technical, relational, and conditional process models of change. *Journal of Consulting and Clinical Psychology, 86*(2), 140.
- Miller, W. R. (1996). Motivational interviewing: Research, practice, and puzzles. *Addictive Behaviors, 21*, 835-842.
- Miller, W. R., & Rollnick, S. (2012). *Motivational interviewing: Helping people change*. Guilford press.
- Miller, W. R., & Rollnick, S. (1991). *Motivational Interviewing: Preparing People to Change Addictive Behavior*. New York, NY, US: Guilford Press.
- Montana Asthma Control Program (MACP). (n.d.) *Montana Department of Public Health and Human services*. Retrieved from <https://dphhs.mt.gov/Asthma>
- Montana Department of Public Health and Human Services (MDPHHS). (2013). *The Burden of Asthma in Montana*. Retrieved from <http://dphhs.mt.gov/Portals/85/publichealth/documents/Asthma/AsthmaBurdenReportMarch2017.pdf>
- Montana Hospital and Emergency Department Discharge Data (MHEDDD). (2013). Office of Epidemiology and Scientific Support, MT DPHHS.
- Ota, C., DiCarlo, C.F., Burts, D.C., Laird, R. and Gioe, C. (2006), Training and the needs of adult learners, *Journal of Extension*, Vol. 44 No. 6.
- Peerson, A., & Saunders, M. (2009). Health literacy revisited: what do we mean and why does it matter?. *Health Promotion International, 24*(3), 285-296.
- Petrova, T. (2011). Designing an Instrument for Measuring Motivational Interviewing Skills Acquisition in Healthcare Professional Trainees (Doctoral dissertation).
- Pyle, J. J. (2015). A motivational interviewing education intervention for home healthcare nurses. *Home Healthcare Now, 33*(2), 79-83.
- Rollnick, S., Miller, W. R., & Butler, C. (2008). *Motivational interviewing in health care: helping patients change behavior*. Guilford Press.
- Sindelar, Abrantes, Hart, Lewander, & Spirito. (2004). Motivational interviewing in pediatric practice. *Current Problems in Pediatric and Adolescent Health Care, 34*(9), 322-339.

Task Force on Community Preventive Services (TFCPS). (2011). Recommendations from the Task Force on Community Preventive Services to decrease asthma morbidity through home-based, multi-trigger, multicomponent interventions. *American Journal of Preventive Medicine*, 41(2 Suppl 1), S1.

Williams, L. K., Peterson, E. L., Wells, K., Ahmedani, B. K., Kumar, R., Burchard, E. G., ... & Pladevall, M. (2011). Quantifying the proportion of severe asthma exacerbations attributable to inhaled corticosteroid nonadherence. *Journal of Allergy and Clinical Immunology*, 128(6), 1185-119.

World Health Organization. (2005). *Preparing a health care workforce for the 21st century: the challenge of chronic conditions*. World Health Organization.

APPENDICES

APPENDIX A

CURRICULUM PLAN

## **Curriculum Plan**

### **Title**

Introduction to brief motivational interviewing concepts, with a focus on foundational knowledge, for pediatric asthma MAP nurses.

### **Background**

“MI is a patient-centered approach that is effective for promotion of health behavior across a wide variety of areas” (Borrelli, Riekert, Weinstein, & Rathier, 2007, p.1024).

An important limitation of both educational and self-management approaches is that they are predicated on the assumption that patients are motivated to accept treatment recommendations (Borrelli, Riekert, Weinstein, & Rathier, 2007). “There is a need for innovative approaches to promote motivation for medication adherence that (1) build on previously validated interventions, (2) are easily integrated into standard clinical care, and (3) target both those who are ready and those who are not ready to change” (Borrelli, Riekert, Weinstein, & Rathier, 2007, p.1024).

### **Target Organization**

The MAP is present in 10 counties and employs 10 asthma nurses and 10 supervisors.

This organization has expressed interest in a motivational interviewing class to help nurse promote change in patient health behaviors.

### **Target Students**

Target students would be MAP nurses. MAP nurses provide free asthma education for patients in their homes. Topics covered in the curriculum include what asthma is, how to control asthma, and how to avoid asthma triggers through environmental modifications

and changes. The MAP has agreed to pay nurses for travel and time to attend this training, which will take place at the annual MAP in-service training.

### **Learning Objectives**

Nurses will promote motivation for change in asthma self-management skills through MI foundations:

- Students will implement principals of MI by guiding rather than directing using READS. (roll with resistance, express empathy, avoid argumentation, adjust to client resistance rather than opposing it directly, and support self efficacy).
- Develop strategies to elicit the patient's own motivation to change using OARS (Open-ended questions, affirmation, reflective listening, and summarizing).
- Refinement of listening skills to encourage change talk from the patient.

### **Method**

PowerPoint presentation of materials

Triade of role-playing (nurse-patient-recorder)

### **Learning Outcomes**

Nurses will change their practice as a result of increased knowledge level about the patient-centered approach, specifically designed to enhance motivation for change among patients not ready to change.

APPENDIX B

MOTIVATIONAL INTERVIEWING APPRAISAL INVENTORY

## Motivational Interviewing Appraisal Inventory

Joni J. Pyle, DNP, RN

General instructions: The following questionnaire addresses your confidence in your ability in certain areas of your nursing practice. Please provide your honest and candid responses that reflect your beliefs about your current capabilities, rather than how you would like to be seen or might look in the future.

There are no right or wrong answers.

Rate the following statements by circling the response that best signifies your **confidence** related to the statement.

	None at all	Somewhat	Moderately	Very Much
1. I have a good understanding of what motivational interviewing entails.	1	2	3	4
2. I am aware of the various stages of change that a patient may exhibit.	1	2	3	4
3. When using motivational interviewing I am able to move through the series of steps from opening the discussion to the closing with ease and understanding.	1	2	3	4
4. When speaking with a patient regarding his/her chronic disease I believe that I express empathy.	1	2	3	4
5. When speaking with a patient regarding his/her chronic disease I believe that I support the collaboration between the patient and myself.	1	2	3	4
6. When speaking with a patient regarding his/her chronic disease I believe that I am able to assist the patient to identify goals and paths to reach them.	1	2	3	4
7. I am comfortable using open-ended questions.	1	2	3	4

8. When speaking with a patient regarding his/her chronic disease I believe that I am able to accept and “roll with” any resistance.	1	2	3	4
9. I believe that I am able to gauge if a patient is ready to address a behavior change.	1	2	3	4
10. I feel confident in my ability to open the discussion with the patient.	1	2	3	4
11. I am able to utilize patient goals to quickly develop an agenda of discussion for the brief time during which I encounter the patient.	1	2	3	4
12. My ability to explore patient readiness for change and tailor the discussion to move the patient forward is sound.	1	2	3	4
13. I believe that I know change talk when I hear it.	1	2	3	4
14. I understand how to assist a patient to set small and appropriate goals.	1	2	3	4
15. I have good knowledge and understanding of how to assist the patient to decide what actions to take regarding his or her goals verbalized.	1	2	3	4
16. Closing, wrapping-up or ending the patient encounter is something that I do well.	1	2	3	4
17. I understand how to incorporate motivational interviewing into my daily nursing practice.	1	2	3	4
18. I have a sound understanding of what is meant by “the spirit of MI.”	1	2	3	4
19. I see the benefit of using motivational interviewing in my daily practice.	1	2	3	4

APPENDIX C

DEMOGRAPHIC SURVEY

**Demographic Survey**

1. What is your highest earned degree in Nursing
  - a. ASN
  - b. BSN
  - c. MSN
  - d. DNP/PhD
2. How many years of nursing experience do you have?
  - a. 0-5 years
  - b. 5-10 years
  - c. 10-15 years
  - d. 15-20+ years
3. What is your age? \_\_\_\_\_ yrs
4. What is your gender? \_\_\_ Female \_\_\_ Male
5. How long have you worked for the MAP program? \_\_\_\_\_ yrs
6. Do you have prior experience with Motivational interviewing?  
\_\_\_\_\_yes \_\_\_\_\_no
7. If you do have experience with motivational interviewing do you currently use it  
in your practice? \_\_\_\_\_yes \_\_\_\_\_no