COMPARISON OF FACE-TO-FACE AND SYNCHRONOUS WEB-BASED TRAINING IN

MOTIVATIONAL INTERVIEWING FOR HEALTH AND HUMAN SERVICE

PROFESSIONALS: DOES TRAINING METHOD MATTER?

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Amanda Elizabeth Fairweather

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Comparison of Face-to-Face and Synchronous Web-Based Training in
Motivational Interviewing for Health and Human Service Professionals:
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Amanda Elizabeth Fairweather

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SUPERVISORY COMMITTEE:

Dr. Mary Larson

Chair

Dr. Shannon David

Scott Nyegaard

Approved:

March 29, 2018	Dr. Yeong Rhee
Date	Department Chair

ABSTRACT

Motivational Interviewing (MI) is a client-centered technique that builds intrinsic motivation for behavior change that healthcare professionals can acquire to provide better care for their clients. Currently, MI training is done face-to-face; however, to make training more accessible, online training needs to be evaluated.

Eighteen human and health service professionals were randomized and participated in fourteen hours of either a face-to-face or online synchronous MI training. To distinguish skill level and proficiency between the groups participants completed an audio recording with another participant and was coded using Motivational Interviewing Treatment Integrity (MITI) 4.2.1.

There was statistical significance ($p=0.045$) in the behavioral count of giving information. However, no other significant differences were found indicating there was no difference between the two training modalities.

A synchronous online MI training is as efficacious as traditional face-to-face training. Synchronous online training may enable MI training for healthcare professionals who live in remote areas.

ACKNOWLEDGEMENTS

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CHAPTER I. INTRODUCTION

Seven of the top ten leading causes of death are the result of chronic diseases, which are among the most common, costly, and preventable of all health problems in the United States (CDC, 2014). Preventable diseases are the result of lifestyle behaviors individuals make throughout their lifetime (Murray et al., 2013) such as using tobacco, not exercising, and consuming a poor diet. People who suffer from lifestyle-related chronic disease such as cancer, stroke, cardiovascular disease, and Type 2 diabetes may also experience underlying physical conditions including hypertension, hyperglycemia, and dyslipidemia (American Heart Association, 2018). Healthcare providers are in a position to assist individuals change their lifestyle behaviors to decrease these physical conditions, and subsequently treat the lifestyle-related diseases because of their knowledge and expertise. It can be difficult to help people change lifestyle behaviors; therefore, healthcare providers who are equipped with behavior changing skills will increase their success with influencing individuals to make lifestyle changes and improve their well-being.

Healthcare providers work together with their clients to make the best health recommendations possible. Unfortunately, when a client is not ready to change the health behavior and does not engage with the provider, the client is less likely to comply with treatment, leaving the healthcare provider and the client frustrated. Studies have shown that when a healthcare provider is more empathetic, it leads to better client compliance (Bakker, Fitch, Gray, Reed, & Bennett, 2001; DiMatteo et al., 1993). When clients and providers agree on a course of action, the client is more satisfied and expresses stronger intent to follow the provider's recommendations (Street, Richardson, Cox, & Suarez-Almazor, 2009). A provider's communication skills, including his or her ability to express empathy are important factors to create understanding between the client and healthcare provider.

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Communicating empathy is not only key in successful provider-client interactions but also is particularly relevant in Motivational Interviewing (MI) (Lim et al., 2013). MI is a client-centered counseling approach that focuses on a collaborative, goal-oriented style of communication (Miller & Rollnick, 2012). It is composed of an interpersonal relationship based on four elements: partnership, acceptance, compassion, and evocation (Miller & Rollnick, 2012). These four elements compose the spirit of MI, which is a "way of being" with the patient (Miller & Rollnick, 2012). MI is based on a mutual understanding that the healthcare provider and client are going to work together to improve the client's health. Consequently, MI has been used effectively in different settings, including primary care and human services (Emmons & Rollnick, 2001; Söderlund, Madson, Rubak, & Nilsen, 2011; Soderlund, Madson, Rubak, & Nilsen, 2011; Zare Mangabady, Khosravi, Jafari Nodoushan, Jafari Nodoushan, & Azadnia, 2014) to assist with addiction, physical activity, weight management, and other health concerns (Christie & Channon, 2014; Dunn, Deroo, & Rivara, 2001; Secades-Villa, Fernánde-Hermida, & Arnáez-Montaraz, 2004). MI is an important tool in health and human service professions' to improve patient's lives.

Workshops, supervised practice, coaching and feedback from an experienced trainer enable healthcare providers to become proficient in MI. The workshops encompass: understanding the purpose of MI spirit, core concepts, examples in different settings, and then practicing the skills taught (Miller & Rollnick, 2012). Currently, there are over 2,500 trainers who are members of the Motivational Interviewing Network of Trainers (MINT) (Miller & Rollnick, 2012, p. 378). MINT is comprised of individuals who provide training in MI (Miller & Rollnick, 2012). An introductory course or Level I of MI training typically takes place over two to three days with 16 to 24 hours of contact time. The next levels are intermediate and advanced

trainings held over the course of another two to three days. Workshops are typically held face-to-face and consist of didactic material, role-playing, discussion and demonstration (Miller, Yahne, Moyers, Martinez, & Pirritano, 2004). In order for individuals to maintain their MI skills it is ideal to have continuous supervision and opportunities to receive feedback (Miller et al., 2004). Participants who engaged in workshops with feedback and coaching were able to maintain higher MI skills over time compared to participants who took workshops that did not include those elements (Darnell, Dunn, Atkins, Ingraham, & Zatzick, 2016). Face-to-face workshops require individuals to travel to the training site in order to participate in the MI training. One drawback of face-to-face training is that it may limit individuals from attending due to travel, time, and expenses. To make workshops more accessible to individual healthcare providers in rural and distant areas there needs to be an exploration into the effectiveness of online training of MI.

Studies have shown that some individuals who are trained in MI do not retain all of the skills learned after the MI training (Fu et al., 2015; Miller et al., 2004). Therefore, the individual healthcare provider is not able to effectively and efficiently use MI with clients. For example, Miller et al. (2004) found that a two-day study with no follow-up yielded slight gains in skillfulness from 3.29 ± 1.49 to 4.57 ± 1.56 and returned to 4.14 ± 1.7 four months later. Online MI training could help individuals already trained in MI continue to receive feedback or advance their skills (Khanna & Kendall, 2015; Clancy & Taylor, 2016). Thus, online MI training is an area that needs further research to enable continued MI skill development for health and human service professionals.

Currently, there is limited literature testing the effectiveness of online MI training. One recent study by Mullin, Saver, Savageau, & Forsberg (2016) compared online and in-person MI

training and found that synchronous online workshops for MI are feasible. One notable limitation of the study, however, was that participants were not randomly placed into the training groups. Understanding the effectiveness of face-to-face and synchronous online training methods may help improve access to high quality training in rural and distant areas, as well as improve opportunities for health and human service professionals to continue to develop and maintain proficiency in MI. Access to high quality training is important for providers in order to effectively utilize MI with the individuals they serve, and subsequently improve client outcomes.

Purpose of the Study

With minimal research comparing online, synchronous and face-to-face MI training, the purpose of the study is to compare MI skill proficiency between the two training modalities. By better understanding the two modalities, it could shed light on moving MI training methods forward in the future.

Research Questions

The research questions that will be addressed in this study include:

1: What is the difference in Motivational Interviewing Treatment Integrity (MITI) coding scores between MI training that is delivered face-to-face versus online synchronous?

2: How does the amount of previous MI training effect MITI coding scores?

3: What is the difference between participants' preference of training modalities before, directly following, and 3 months after MI trainings?

Limitations and Assumptions

Due to limited funding to conduct the research, participants were not asked to submit an audio recording at the beginning of the study to be coded using MITI. This is a limitation because it did not allow the research team to compare participants MITI scores from the beginning to the end of the study, to see if participants proficiency increased due to the MI

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training. Another limitation is that the study is focused in the Minnesota and North Dakota area and is a small sample size. This limits the ability to generalize the results.

During the research study, three assumptions were taken into consideration. The first assumption is that all of the participants are open-minded and engaged in the MI trainings. The second assumption is the participants are going to use their MI skills in the future, as well as any strategies that they have learned. The third assumption is that the two groups are equal at the start of the training due to randomization.

Definitions

- Asynchronous: "not existing or happening at the same time" (Merriam-Webster)

- Behavior Counts: "Behavior counts are intended to capture specific behaviors without regard to how they fit into the overall impression of the clinician's use of MI" (Moyers, Manuel, & Ernst, 2014, p.13).

- Cultivating Change Talk: "The extent to which the clinician actively encourages the client's own language in favor of the change goal, and confidence for making that change" (Moyers et al., 2014, p.5).

- Empathy: "The extent to which an interviewer communicates accurate understanding of the client's perspective and experience; most commonly manifested as reflection." (Miller & Rollnick, 2012, p. 408)

- Global Scores: "Global scores are intended to capture the rater's overall impression of how well or poorly the clinician meets the description of the dimension being measured" (Moyers et al., 2014, p.4).

- Motivational Interviewing: "Motivational Interviewing is a collaborative, goal-oriented style of communication with particular attention to the language of change. It is designed

to strengthen personal motivation for and commitment to a specific goal by eliciting and exploring the person's own reasons for change within an atmosphere of acceptance and compassions" (Miller & Rollnick, 2012, p. 29).

- Motivational Interviewing Treatment Integrity: A coding system that "focus only on the interviewer's responses, including both global ratings and specific response counts to document intervention fidelity" (Miller & Rollnick, 2012, p.326)

- Partnership: "The extent to which the clinician conveys an understanding that expertise and wisdom about change reside mostly within the client" (Moyers et al., 2014, p.9).

- Softening Sustain Talk: "The extent that the clinician avoids a focus on the reasons against changing or for maintaining the status quo" (Moyers et al., 2014, p.7).

- Spirit: "The underlying set of mind and heart within which MI is practiced, including partnership, acceptance, compassion, and evocation" (Miller & Rollnick, 2012, p. 413).

- Synchronous: "happening, existing, or arising at precisely the same time" (Merriam-Webster)

CHAPTER II. LITERATURE REVIEW

Chronic disease and health behaviors are common reasons an individual may seek healthcare provider assistance. Through communication, a healthcare provider has the potential to assist the individual in changing the behavior that is leading to disease (Bakker et al., 2001; DiMatteo et al., 1993; Lim et al., 2013; Street et al., 2009). Motivational Interviewing (MI) is a way of communicating that can guide the individual to make a change (Miller & Rollnick, 2012). In order for the healthcare provider to be equipped with the behavior change skills, they must be trained in MI. This is usually done through MI trainings offered through face-to-face workshops (Miller & Rollnick, 2012). This can make it difficult for individuals who do not have the means to travel to a workshop. Therefore, a look into a synchronous, online training for MI could be a way to get high quality training to individuals that are in rural and distant areas. The purpose of the study is to understand and compare the proficiency between face-to-face and synchronous online training.

William R. Miller first described MI in a journal in 1983 (Miller & Rollnick, 2012). MI has evolved into a counseling and therapy technique that is used for addictions, physical activity, weight management, and other health behaviors (Christie & Channon, 2014; Dunn et al., 2001; Secades-Villa et al., 2004). MI is a type of counseling that facilitates a person to change a behavior by increasing his or her own intrinsic motivation using a client-centered approach (Miller & Rollnick, 2012 p.410). The client's level of readiness is taken into consideration when helping to increase an individual's motivation to make a life change. Rogers's client-centered approach, the Stages of Change, and Cognitive Behavioral Therapy all had influences on how MI was developed (Csillik, 2013; Dattilio & Hanna, 2012; Prochaska, DiClemente, & Norcross, 1992).

The spirit of MI consists of four elements that are interrelated: collaboration (partnership), acceptance, compassion, and evocation (Miller & Rollnick, 2012)(Figure 1.) The spirit of MI is the foundation when facilitating the four core processes of MI, which include engaging, focusing, evoking, and planning (Miller & Rollnick, 2012)(Figure 2). The four processes are in the shape of steps because each is a critical step in guiding a client to change a behavior.
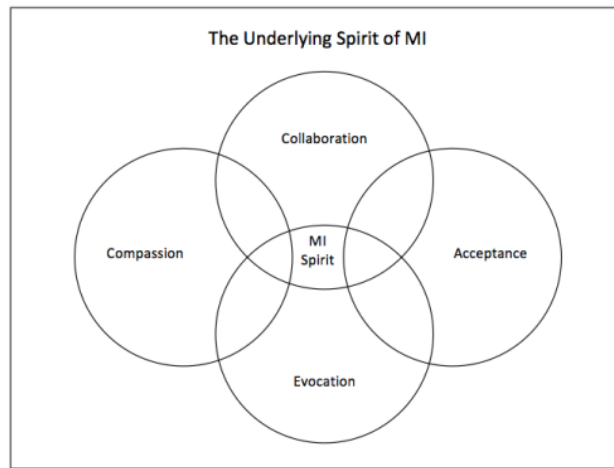
Figure 1. Four elements of the spirit of MI
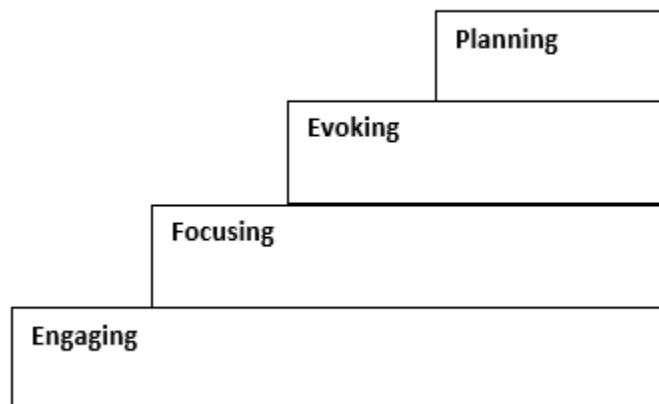
Figure 2. Four core process of MI

Engaging facilitates a strong collaborative relationship between the healthcare provider and client (Miller & Rollnick, 2012). During the focusing process the healthcare provider and client will explore different ideas and behaviors that the client would like to change and narrow the scope down to a target behavior (Miller & Rollnick, 2012). The next process is evoking, where the healthcare provider will guide the client's exploration of motivations for change through the use of open questions, affirmations, reflections and summarization skills (Miller & Rollnick, 2012). The last process is planning. When the client is ready a plan is developed and put into action (Miller & Rollnick, 2012). Within the principles, different skills and strategies are used to guide the individual toward change of the selected behavior. It is not the job of the healthcare provider to tell the individual what they need to change, but instead to assist the individual in determining what change they desire and helping him/her build intrinsic motivation to change. MI is about the client and assisting them to take on the responsibility for the change they want to accomplish. There is a relationship that is built between the provider and client. This therapy is not about tough love, confrontation, and persuasion based on authority (Moyers, 2014) rather the healthcare provider needs to have empathy, which is incorporated into the spirit of MI.

The use of MI started in addictions and has further evolved in its use by health and human service professionals. Health and human service professionals including physicians, nurses, counselors, and social workers use MI to assist clients with a wide variety of health behaviors and conditions such as smoking, weight loss, diet, and physical activity (Dunn et al., 2001; Mujika et al., 2014; Smith West, DiLillo, Bursac, G. Greene, & A. Gore, 2007). In order for these healthcare providers to help individuals, they must understand and learn the core processes and spirit of MI. Similar to any skill used by health and human service professionals,

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training in MI is necessary to become proficient. Currently, training is often accomplished

through MI workshops held by individuals who are members of MINT (Miller & Rollnick,

2012). There are different levels of training ranging from two hours to as long as four days. The

MI expert leads workshops consisting of a combination of didactic material and activities

(Darnell et al., 2016; Miller et al., 2004). A MI workshop being held face-to-face requires those

individuals to travel to the workshops. For those living in a rural and distant area traveling to a

workshop can be cost and time prohibitive. Individuals may choose not to participate because of

the time, expense, and travel required. Little is known about the merits of training completed

online; whether or not it is equivalent in regards to proficiency and skills in MI. Online training

could be a turning point in teaching MI by enabling individual's access to high quality training in

distant and rural areas. The review of literature is organized around the history of MI, theoretical

influences of MI, MI spirit, the four processes, who is getting trained, who the trainers are, face-

to-face workshops, online workshops, and measuring learning outcomes.

History of Motivational Interviewing

William R. Miller is a distinguished professor of psychology and psychiatry at the

University of New Mexico. Before he became a professor, Miller earned a Ph.D. in clinical

psychology at the University of Oregon (Miller, n.d). Miller had a strong interest in treating

addictive behaviors; his interest came from a summer working as an intern at the Wood Veteran

Affairs treatment program under the direction of Robert Hall (Moyer, 2004). Here he was able to

learn and listen to the individuals in the treatment program. He became intrigued by what they

were saying. This began his studies in alcohol addiction, and he soon realized that his method in

counseling allowed his clients to change their behavior quickly and often just in one session

(Moyer, 2004). The journey continued for Miller when he took a sabbatical in Norway at the

Hjellestad clinic in 1982 (Moyer, 2004) where he was able to work with postgraduate

psychologists who helped Miller refine and explore his technique in MI. In 1983, Miller finally produced a paper on MI, which was later condensed and published (Moyer, 2004).

The development of MI advanced when Miller took a second sabbatical to Australia in 1989. This is where he would meet Stephen Rollnick, Ph.D. Rollnick informed Miller of the rapid spread of MI in Europe and encouraged Miller to write more about how to implement this clinical method (Moyer, 2004). At the time of their meeting, Rollnick was actively engaged in using MI in his practice with a particular focus on client ambivalence (Moyer, 2004). A few years after the two had met they decided to collaborate by writing the first book on MI, which emphasized client language and the importance of eliciting change talk from clients (Moyer, 2004). Rollnick's interest in patient care within hospitals and primary care sparked his interest in bedside manners, which in turn, led to the emphasis on the spirit of MI. A second book was published in 1999 in collaboration with Pip Mason and Chris Butler titled "Health Behavior Change: A Guide For Practitioners" (Moyer, 2004). Shortly after, the second edition of MI was published in 2002, which reflects on the growth of MI into many therapeutic areas, no longer just being confined to addiction. The authors focused on reflective listening as a way to convey empathy, as well as evoking and strengthening the client's own verbalized motivation for change (Moyer, 2004). After ten years of articles and research, new knowledge about MI had emerged leading to the third edition of MI. One significant change from the second edition to the third is the emphasis and focus around the four processes engaging, focusing, evoking, and planning and how the processes are used through change (Miller & Rollnick, 2012). Additionally, the third edition incorporates examples, theory, evidence base, and fidelity assessments (Miller & Rollnick, 2012). The theories that influenced MI give a better understanding of techniques within MI.

Theoretical Influences for Motivational Interviewing

Motivational Interviewing was influenced by an amalgamation of behavior change theories and therapeutic approaches. MI is a communication style rather than a set of techniques (Csillik, 2013). The communication flow between the healthcare provider and the client is what leads to a change in behavior. The evolution of MI was strongly influenced by Rogers' client-centered counseling approach. Rogers's counseling approach embodies several principles and some of them are incorporated into MI. A collaborative approach is one principle that evolved from Rogers' counseling approach that is integral to MI. The development of MI relied upon Rogers's theory of the "critical condition of change," this means that there is a particular atmosphere during a counseling session that is ideal for change (Rogers, 1998 p.353). In addition, empathy is considered essential in Rogers' client-centered counseling and it is important in MI too. Empathy provides the necessary condition for the exploration of change. This is done through reflective listening; this works on clarifying the person's own experiences without imposing the counselor's point of view (Csillik, 2013). Another aspect of Rogers' client-centered approach that is used in MI is the concept of acceptance. In counseling, acceptance is the act of providing a supportive atmosphere for change. The counselor must accept the person as he or she is, as well as, help the client recognize that they have choices regarding their behavior change and the freedom to choose what they want to do (Csillik, 2013). The key to having the client explore their ambivalence and elicit their own reasons for change is providing a space and energy that is non-threatening (Csillik, 2013). There must not be confrontation or coercion within the counseling environment. Confrontation leads to a hostile environment, which does not engage the client to change their desired behavior. Rogers' client-centered approach has shaped and defined the spirit of MI.

A behavior change model that influenced the development of MI is the Stages of Change. MI is about guiding an individual to change a desired behavior. To fully help a client change a behavior the healthcare provider needs to understand their level of motivation. When a healthcare provider does not know a client's level of motivation to change the provider may be doing all of the work in the relationship, which could lead to burnout, and a waste of time for both the client and the healthcare provider. The Stages of Change consists of 5 stages: pre-contemplation, contemplation, preparation, action, and maintenance. The first stage, pre-contemplation, is where an individual lacks awareness of a problem and is not considering a change (Prochaska et al., 1992). Whereas, the second stage, contemplation, is where the individual is beginning to see that there is a problem and is thinking about changing it (Prochaska et al., 1992). This is an important stage because it is when the individual is open to information on how to change. Once the individual has decided that they want to change (but they may not make the change for a month or more) they have reached the preparation stage. The preparation stage is also known as decision-making (Prochaska et al., 1992). Next is the action stage, this is when the individual has modified and changed the desired behavior for the past six months (Prochaska et al., 1992). Finally, there is the maintenance stage, in this stage the individual has changed their behavior for more than six months, but it is still possible to relapse (Prochaska et al., 1992). In order for a counselor to be effective in guiding the individual through the stages of change they must first identify what stage the client is in. The progression through stages is not linear; therefore, clients could move between stages or even go back to deciding that they have no desire to change (Corcoran, 2003; Prochaska et al., 1992). This is why it is important that the healthcare provider adapts their communication based on the client's current stage. The provider can identify what stage the client is at by what is being said. The more

language that is in the direction of change or also considered change talk is indicative of a change in behavior (Miller & Rollnick, 2012). An example of change talk is when the client says, "I really need to stop drinking so I don't break up my family." When the client communicates their desire, reasons, and needs for change the healthcare provider needs to pay particular attention because the client is implying that they want to make the behavior change (Noordman, de Vet, van der Weijden, & van Dulmen, 2013). Noordman et al. (2013) showed that when nurses invited the client to talk about behavior change in the preparation stage more than during the pre-contemplation and contemplation stages. To effectively use MI, the healthcare provider must communicate with the client to determine what stage the client is in to best fit the needs of the client. Once, the stage has been established the healthcare provider can establish the underlying causes of ambivalence, which leads into the use of Cognitive Behavioral Therapy in MI.

Cognitive Behavioral Therapy (CBT) is focused on changing negative views and related behaviors regarding self, the world, and the future (Dattilio & Hanna, 2012). The main use is for depression but elements of CBT have been used with client's suffering with other health concerns and integrated into MI. CBT emphasizes the interplay between events, thoughts, behaviors, and mood (Dattilio & Hanna, 2012). The focus is on a specific problem or behavior and supporting self-efficacy. Self-efficacy can affect one's motivation to change (Cupertino et al., 2011). If an individual thinks that they can do something then they are more likely to complete it. Self-efficacy also affects thought patterns and behaviors. When someone has low self-efficacy they may believe that a behavior is hard to change, which creates difficulty in making the change. For example, a person wants to quit smoking and has a low self-efficacy is going to think there is no way that they can quit a behavior they have been doing for several

years. On the other hand, an individual with high self-efficacy who believes they have the ability to quit will take steps to slowly reduce the amount of cigarettes they smoke each day to reach their goal. CBT and MI have been studied to work as a combined mechanism to help individuals change behavior (Cooper, 2012; Parsons, Rosof, Punzalan, & Di Maria, 2005).

These three theoretical approaches have influenced the evolution of MI into what it is today. Through Rogers's client-centered approach came empathy and reflective listening as well as a supportive atmosphere for change. To assist the client, there needs to be an understanding of the level of motivation of their current stage of change. CBT works on connecting behaviors and events together to get a better understanding of the root source of the problem. Self-efficacy is an important aspect and working to improve the client's self-efficacy through a strengths-based approach using affirmations to help a client make a change. This is where the "spirit" of MI really ties everything together into a cohesive package.

Spirit of Motivational Interviewing

MI is characterized by the healthcare provider's particular way of being when working with a client. This "way of being" is called the spirit of MI (Miller & Rollnick, 2012). The technique and skills are about the interpersonal relationship. There are four key interrelated elements of the spirit of MI, which include partnership, acceptance, compassion, and evocation (Miller & Rollnick, 2012). The partnership element is based on the fact that MI is done "for" and "with" a person and is an active collaboration between experts (Miller & Rollnick, 2012 p.15). The opposite of partnership would be separation where the counselor makes all the decisions for the client. MI is a different type of counseling in the sense that the client is the expert and there cannot be a behavioral change without the client's expertise about what will and will not work. Miller and Rollnick (2012) stated, "MI is not tricking people into change; it is a way of activating their own motivation and resources for change" (Miller & Rollnick, 2012 p.15). It is a

true partnership between the healthcare provider and the client. It relies on developing mutual

respect and trust. The next key element that is intertwined in the spirit of MI is acceptance.

In order to partner with a client, the healthcare provider must accept the client just as he

or she is. Acceptance includes absolute worth, autonomy, affirmation, and accurate empathy.

Absolute worth is the ability to see a person as he or she is, and the awareness that each person is

unique (Rogers, 1998). Everyone is different and brings a different perspective to the world,

which should always be taken into consideration. The opposite of absolute worth is judgment

(Miller & Rollnick, 2012). When there is judgment the client's ability to change will subside

(Miller & Rollnick, 2012). The healthcare provider works through a person's autonomy where

the client is acknowledged for their independence and freedom to make a decision on their own.

MI does not make a person do something, coerce, or control an individual (Miller & Rollnick,

2012 p.19). MI is based on the understanding that each person is capable of making his or her

own decisions in life. For example, if a healthcare provider tells their client that they need to stop

drinking because it could kill them, the client has to stop drinking for him or herself.

"Affirmation is to seek and acknowledge a person's strengths and efforts" (Miller & Rollnick,

2012 p.19). It is recognized that each person is unique and possesses different strengths. The

healthcare provider affirms the client's ability to use their strengths and internal knowledge to

accomplish their own change instead of giving the client all of the answers or advice.

Oftentimes, it is useful to a client to have the provider identify and acknowledge their personal

strengths. The last part of acceptance is accurate empathy, which is described as "an active

interest and effort to understand the other's internal perspective, to see the world through the

clients eyes" (Miller & Rollnick, 2012 p.18). Empathy does not mean sympathy for an individual

but rather to see the person's situation through their perspective to get a better understanding of

that person. Once there is acceptance between the client and healthcare provider, compassion can be formed.

The third key element of the spirit of MI is compassion. To be compassionate is to actively advocate for other's well-being and make them a priority (Miller & Rollnick, 2012). Together the healthcare provider and client will work together to change the desired behavior. The healthcare provider will take a backseat to their own needs to promote the client's needs. The opposite of compassion would be for the provider to not care about the client. MI is about working as a team and trusting the client to know what is best for themselves. As mentioned, it is important to focus and understand the person's strengths and resources rather than probe for deficits (Miller & Rollnick, 2012). People are more capable of making change from a position of strength. Probing for deficits can lead the client to shut down which can hurt the communication between provider and client, and ultimately, damage the client's belief in their ability to make a change.

The last key element in the spirit of MI is evocation. Evocation is to bring forth the knowledge and abilities individuals have within them to the surface (Miller & Rollnick, 2012 p.21). An individual's subconscious is already telling them what needs to be changed in their lives and the healthcare provider helps evoke this self-understanding. The opposite of evocation would be the healthcare provider presenting all the answers to the client and not having the client bring their own skills to the table. The healthcare provider evokes the decision for change, the knowledge of how to change, and internal strengths available to accomplish this change from the client. Evocation is the element that facilitates change talk from the client, and subsequently precedes the actual changed behavior.

All four elements of MI are interrelated and support one another to facilitate an individual's change in behavior. Partnership is the collaboration of the client and healthcare provider. Within the partnership there is an acceptance and deep compassion for the client. All three of these elements facilitate evocation of change talk from the individual. The spirit in MI is the foundation of the client-centered approach.

Four Processes of Motivational Interviewing

There are four core processes when using MI, which are instrumental to guiding an individual's change. The four core processes are engaging, focusing, evoking, and planning. "Engaging is the process by which both parties establish a helpful connection and a working relationship" (Miller & Rollnick, 2012 p.26). This may take no time at all or it may take several weeks or months to establish a connection. However, when the health care provider embodies the spirit of MI the working relationship between provider and client will improve.

Focusing is taking the broad spectrum of ideas and behaviors that an individual would like to change and narrowing it to just one. "It is the process by which you develop and maintain a specific direction in the conversation about change" (Miller & Rollnick, 2012 p.27). It's ascertaining with the client exactly what they would like to change, how they will accomplish this change and keep them moving in the right direction. They need to focus on how from within they will change. If given strict guidelines on how to make the change, the client may feel intimidated and not be able to accomplish the change.

Evoking is defined as "eliciting the client's own motivation for change" (Miller & Rollnick, 2012 p.28). This is the true heart of MI (Miller & Rollnick, 2012). During evoking the client expresses their desire, abilities, reasons, and need to make a behavior change (Noordman et al., 2013). During MI, the healthcare provider encourages change talk from their client by using open questions, affirmations, reflections, and summarizations. Change talk consists of

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statements that the client says that allude to a consideration or commitment to change. Lastly, planning is stated as "encompasses the development and commitment to change by formulating a specific plan of action" (Miller & Rollnick, 2012 p.29). This is where readiness to change takes effect. Readiness will impact the length of time for a client to follow their plan and fully accomplish their goal.

MI is facilitated through these four processes. While the processes do not necessarily occur in a linear fashion, skillful healthcare providers pay attention to where the client is in relationship to making a change and utilizes the processes to guide them towards change. Skillful, highly trained healthcare providers in MI can assess and meet clients' needs for moving toward behavior change more effectively and efficiently than those who are untrained.

Motivational Interviewing in the Health Care Setting

Rollnick's work with medical student training and health care settings influenced the emergence of MI into health care. He began using MI effectively in primary care settings (Morton et al., 2015) to assist clients with improving diet, physical activity, weight management, diabetes self-management, and other health concerns (Copeland, McNamara, Kelson, & Simpson, 2015; Martins & McNeil, 2009; Smith West et al., 2007).

Healthcare providers seek to actively engage individuals in their own heath. Healthcare providers who use MI have improved medication adherence of individuals 65 years or older who are living with chronic health conditions. MI was one of the three variables that were independently associated with medication adherence (Moral et al., 2015). Medication adherence also improved in clients living with bipolar disorder when MI was used as an intervention. When examining the importance, motivation, and confidence of adhering to taking bipolar medication MI ruler tool; predicting motivation to change resulted in significant pretest to mid-test (p=.025), as well as mid-test to posttest and pretest to posttest (McKenzie & Chang, 2015). Additionally,

MI is a promising approach to improve outcomes for clients with chronic heart failure and reduce hospital readmission (Riegel, Masterson Creber, Hill, Chittams, & Hoke, 2016).

The effectiveness of MI has also improved those managing insulin dependent diabetes by addressing clients' fear of hypoglycemia; thereby making diabetes easier to live with (Channon, Smith, & Gregory, 2003). Similarly, Smith West et al., (2007) found that an intervention with MI enhanced glycemic control for women living with Type II diabetes. In addition, MI is an effective tool to aid in weight loss (Smith West et al., 2007). Clients in intervention groups incorporating MI lost significantly more weight compared to the control groups. Therefore, MI is a beneficial tool in helping with diabetes and weight loss in women living with type II diabetes and cardiovascular disease.

Motivational interviewing is an effective intervention for children, adolescents, and adults, as well as for a variety of health behaviors. A MI intervention with pediatrics significantly improved health habits. This included an increase in consumption of fruits and vegetables, decreased hours of TV watched, and increased hours of active play (Tucker, 2013). Also, MI has been used as an intervention for hazardous drinking in adults. Through the use of MI individuals were able to reduce the amount of alcoholic beverages consumed in a sitting from 4.65 to 1.95 (Beckham, 2007). Additionally, MI has been used effectively with physical activity, nutrition, and smoking (Martins & McNeil, 2009; Mujika et al., 2014). Brief MI training produces measurable gains in knowledge, skill, and confidence in healthcare providers (Edwards, Stapleton, Williams, & Ball, 2015); therefore, it is important to educate healthcare providers in MI to increase their ability to help their clients improve health behaviors.

Motivational Interviewing Network of Trainers

To effectively provide MI to clients, healthcare providers must be trained. The need for more trainers became evident when Miller and Rollnick were no longer able to meet the training

demands of interested individuals. When discussing how they wanted to handle the situation of expanding MI, they realized that they did not want to manage other's use of MI, but they were interested in nurturing other's MI excellence (Moyer, 2004). In 1993, Miller and Rollnick offered the first "Training for New Trainers" (TNT) and given this need for the expansion of trainers the MINT was established. Currently, there are over 2,500 trainers worldwide and that number is growing (Miller & Rollnick, 2012). To become a member of MINT an individual must complete TNT, which lasts three to four days. MINT members conduct MI trainings and workshops, which requires adequate training in order to competently train others. MINT does not certify or license trainers, however a certification process for both MI practitioners and trainers is under development (MINT Board of Directors, 2015). The mission of MINT is to promote good practice in the use, research, and training of MI (MINT Board of Directors, 2015). The four foundational values of MINT are quality, generosity, openness, and respect (MINT Board of Directors, 2015). A member of MINT must be a professional, have integrity, a willingness to collaborate and share knowledge, be flexible, be curious, accepting of diversity, kind, welcoming, and accept others (MINT Board of Directors, 2015). Once a member has these values they will be able to fully emulate the spirit of MI.

<center>**Learning Motivational Interviewing**</center>

Face-to-face training

  MI training has been conducted face-to-face for the last thirty years. Experts in MI from the MINT, generally conduct MI workshops. Several levels and methods of training are available to individuals who seek to learn MI.

Face-to-face workshops are organized in several levels of varying duration. An introduction to MI can range from two hours to three days. An introductory workshop or Level I training lasts two to three days and consists of learning about the fundamental spirit and methods

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of MI ("Training Expectations," 2016). An introductory workshop just skims the surface of MI; therefore, to grow more skills in MI individuals may choose to continue training by attending a Level II training workshop. Level II or Intermediate Training can last anywhere from two to three days ("Training Expectations," 2016). The next level of MI is Level III or Advanced Training, consisting of another two to three day workshop. The advanced level continues to strengthen MI skills learned in the previous two trainings and continues to refine skills such as eliciting change talk ("Training Expectations," 2016). The Supervisor Training is important for individuals who are going to oversee employees who are using MI. The Supervisor Training is a two to three day training, which prepares an individual to take a supervisory role within an organization to make sure that employees are continuing to implement quality MI skills ("Training Expectations," 2016).

Face-to-face training usually consists of didactic material, interactive activities, discussion, role-playing, and feedback (Daeppen et al., 2012; Darnell et al., 2016; Miller et al., 2004). Miller et al., (2004) study consisted of a workshop with one-half didactic and demonstration and the other half of the workshop direct practice of the skills. Similarly, Daeppen et al., (2012) tested two sessions of MI, four-hours each that also included discussion, role-playing, and a persuasion exercise. Darnell et al., (2016) used MI didactic material when training healthcare providers to use MI as part of a brief intervention to reduce high-risk alcohol consumption.

The length of the training program has an effect on MI proficiency. Miller et al., (2004) stated that MI training programs that are longer in duration with feedback resulted in greater gains of MI proficiency based on Motivational Interviewing Skill Code scores. Fu et al., (2015) conducted a study examining a high intensity group, which consisted of six supplemental booster

sessions over twelve weeks, peer coaching with an MI champion, and telephone interaction with simulated clients compared to a moderate intensity group that did not have the extra booster sessions or feedback. In this study, the high intensity group scored significantly higher for evocation, collaboration, and global MI spirit (Fu et al., 2015).

In contrast, it has also been shown that some MI training methods and durations may not be enough to improve and maintain skill levels. Self-study using a therapist manual and training videotapes had no significant effect on proficiency (Miller et al., 2004). Furthermore, a two-day workshop with no follow-up yielded modest gains in skillfulness that returned to baseline four months later (Miller et al., 2004). Overall, many types of training in MI may increase knowledge obtained and level of skill, but feedback and coaching helps improve the likelihood that the learner will maintain these skills.

Feedback and coaching

Feedback and coaching during and after MI workshops have shown to help improve the retention of MI skills. Healthcare providers need to stay up-to-date and practice their MI skills otherwise they tend to deteriorate quickly. Miller et al., (2004) found that participants in the self-study and two-day workshop alone showed modest gains but then returned to baseline four months later. The ideal situation would be for healthcare providers trained in MI to have continuous supervision and access to a coach to receive feedback and refresh their skills. Research indicated that coaching and/or individual feedback on performance following initial training could help maintain gains in clinical proficiency (Miller et al., 2004). Another study was conducted evaluating different types of MI training and found that participants who received workshop training, feedback, and coaching were able to maintain higher MI skills over time relative to those in the control condition (Darnell et al., 2016).

In comparison to face-to-face training, online training may facilitate ongoing supervision and consultation (Khanna & Kendall, 2015). Researchers concur that follow-up sessions post training were considered an important element in order to optimize any improvement in clinical practice (Clancy & Taylor, 2016; Khanna & Kendall, 2015). To insure that individuals who are obtaining MI training receive the feedback they need it may be necessary to have more research as to whether online-training is an effective method to provide more accessible training for learning and refreshing skills.

Online training

The second type of training is web-based or online training. There is little research on this type of training since face-to-face has been seen as more ideal. Online training could be a turning point in that it would provide access to MI training to more people. When training is offered online it allows individuals access from any location that has Internet connectivity. There is no need to travel or wait for a training opportunity. This makes online trainings more flexible, accessible, cost-effective and allows for remote ongoing supervision and consultation (Khanna & Kendall, 2015).

The limitations of online training include the costs associated with developing a web-based training, maintaining security and privacy (Khanna & Kendall, 2015). In addition, low internet connection or older web browsers may make accessing material difficult (Khanna & Kendall, 2015). Clancy & Taylor, (2016) studied Motivational Interviewing Knowledge, Confidence, Attitudes, and Practices (MIKCAP) scores and attendance during MI follow-up sessions after an initial MI workshop. The follow-up sessions were conducted face-to-face or online. The face-to-face training produced a 1.24 ± 6.33 mean improvement; whereas, the online mean decreased by 1.09 ± 12.25 from after the MI workshop to after the follow-up session for MIKCAP scores (Clancy & Taylor, 2016). Additionally, participants of face-to-face were more

likely to attend the follow-up session, based on examining the mean number of follow-up sessions attended. Face-to-face participants attended a mean of 2.1 sessions compared to a mean of 1.38 for online sessions out of a possible three sessions (Clancy & Taylor, 2016). On the other hand, online trainings have provided increased MI skills comparable to face-to-face training (Mullin, Saver, Savageau, & Forsberg, 2016). Therefore, the limitations of an online training are present but there are still advantages to online training that have to be taken into consideration.

Two advantages to online trainings are they are feasible and allow for recordings for continued feedback. Fontaine et al., (2016) conducted a study using an E-Learning platform for cardiovascular nurses and concluded that a web-based platform was feasible. The number of participants that completed the study indicated that feasibility. Similarly, Mullin et al., (2016) concluded the MI skills are feasible through synchronous online training. In addition to the feasibility of online training, recording oneself through an online platform can be beneficial. Listening to recordings later on can be a method of self-assessment and reflection to improve skills. Alternatively, audio recordings can be used to provide feedback by a trained MI coach to help an individual improve skills. For instance, an online intervention called Teen CHAT was utilized by physicians to record his or her patient encounters. These encounters were uploaded and coded by a trained MI coach who provided the physician with feedback (Pollak et al., 2015). Krukowski, DiLillo, Ingle, Harvey, & West, (2016) conducted a research study using a synchronous online MI intervention for weight management. The results of the study have not come out, however, the findings could shed light as to whether a one on one MI intervention would be beneficial to weight management. This could open up other possibilities for the use of MI.

There are pros and cons to both online and face-to-face trainings. Although there seems to be great potential in online workshops the gap in the research literature concerning the different modalities is important to consider. More research needs to be conducted comparing face-to-face to online workshops in order to deepen our understanding about the nuances of learning MI and to further develop an evidence-base for training methodology.

Asynchronous vs synchronous online training

There are two types of modalities associated with online training: asynchronous and synchronous (Giesbers, Rienties, Tempelaar, & Gijselaers, 2014). Asynchronous means to not go at the same rate or exactly together ("Asynchronous," n.d). When individuals go online to a website and complete a training that consists of self-paced learning through recorded lectures, PowerPoints, and quizzes, but no face-to-face interaction it is considered asynchronous. Asynchronous trainings can be done at any time without interaction with others. For instance, one study had cardiovascular care nurses complete a web-based, E-Learning platform for brief MI in which the nurses studied thirteen self-paced video modules for their training (Fontaine et al., 2016). This is an example of online learning that is asynchronous.

In contrast to asynchronous, online training is that synchronous is training that occurs all at the same time ("Synchronous," n.d.). For example, a webinar that participants call or log into at the same time as all participants and the facilitator(s) is synchronous training. Online sites with synchronous training often have mechanisms that facilitate communication between the participants and the facilitator(s). Compared to asynchronous, synchronous training allows for more communication and feedback among learners and facilitator(s). One study examined a synchronous online MI training for healthcare providers compared to a face-to-face training. The online training consisted of live, interactive components, which is consistent with the definition of a synchronous training (Mullin et al., 2016).

When it comes to online training, it is important to take these two methods of training into consideration; they have very different implications and have different effects on people and their learning styles (Giesbers et al., 2014). For some, it is important to have that personal contact and for others it is not as important (Giesbers et al., 2014). When making decisions regarding training it is important to consider several factors, including training methods and subsequent outcomes.

Measuring Learning Outcomes

Learning outcomes are used to assess training modalities in order to build an evidence-based practice. For MI, learning outcomes can be acquired through two different coding systems. The first coding system put into place was the Motivational Interviewing Skill Code (MISC)(Theresa B. Moyers, Martin, Manuel, Hendrickson, & Miller, 2005), which examines healthcare providers and clients behaviors during a MI interview. The coding system looks at both global characteristics as well as a variety of behaviors for both the provider and the client. The second coding system is Motivational Interviewing Treatment Integrity (MITI), which is a condensed version of MISC (T. B. Moyers, Martin, Manuel, Miller, & Ernst, 2010). The MITI is more focused on the healthcare provider and their delivery of MI. A coding system would allow for healthcare providers to get individualized feedback on exactly what they were missing when providing MI and their strengths. Each coding systems can be used to establish proficiency outcomes based on training. Therefore, to understand if a training is effective there needs to be an established baseline to use as a comparison to evaluate ones proficiency in MI, hence the need of a coding system in place.

Motivational interviewing skill code

The first coding system that was established to evaluate an individual's proficiency in MI is the MISC (Theresa B. Moyers et al., 2005). It is used to document the changes in a

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healthcare provider's competence before and after MI training. It is also used for providing session feedback and coaching to help healthcare providers improve their skills (Theresa B. Moyers et al., 2005). In one study, researchers used the MISC to establish treatment fidelity and to examine whether the participant's language mediated weight loss outcomes (Krukowski et al., 2016).

The MISC requires an expert coder to listen to the audiotapes submitted by participants. The MISC coding expert reviews the audiotapes three times. In an earlier version of the MISC (1.0), the coder uses the first review to consider six global characteristics of MI practice, which include acceptance, egalitarianism, empathy, genuineness, warmth, and overall MI spirit (Theresa B. Moyers et al., 2005). The first pass in a subsequent version, MISC 2.1, was used to examine three global characteristics including acceptance, empathy, and spirit (William R. Miller, Moyers, Ernst, & Amrhein, 2003). During the second pass of the MISC 2.1, the coder listens for twenty-seven specific behaviors. The coder counts each of these behaviors. The behavior counts are intended to capture specific behaviors without regard to how they fit into the overall impression of the healthcare providers use of MI (William R. Miller et al., 2003). During the third, and final pass, the coder measures the relative amount of time spent talking during the session by both the client and the healthcare provider (Theresa B. Moyers et al., 2005). In the later version of the MISC, the third pass was altered to examine client behavior (William R. Miller et al., 2003). All coding is based on a rating using a 7-point Likert scale, where seven is the high end of the scale and one is the low end of the scale. Following the coding process, feedback is provided to participants so they can learn about their strengths and areas that need improvement. It also allows researchers to evaluate the effectiveness of MI training.

One of the drawbacks of using the MISC is that the coder will spend 90 to 120 minutes coding each audiotape (Theresa B. Moyers et al., 2005). Bennett, Roberts, Vaughan, Gibbins, & Rouse (2007) agrees with Theresa B. Moyers et al., (2005) that the MISC is a lengthy process to evaluate MI. This can make using the MISC cost prohibitive.

Motivational interviewing treatment integrity

The MISC is a complex and lengthy way of coding MI (Bennett et al., 2007). A condensed version of the MISC was later developed into the MITI. While the MISC coding focused on both the healthcare provider and the client, the MITI only codes for the healthcare provider (T. B. Moyers et al., 2010). Since the MITI only focuses on the provider, it is not able to capture the client's readiness to change or the commitment language that the MISC is able to capture (T. B. Moyers et al., 2010). The MITI consists of two global measures and seven behavior counts (Theresa B. Moyers et al., 2005). The two global scores consist of MI spirit and empathy and the seven behavioral counts include giving information, MI adherent behavior, MI non-adherent behavior, closed questions, open questions, simple reflection, and complex reflection (Theresa B. Moyers et al., 2005). To assess the sensitivity of the MITI in detecting healthcare provider behavior, twenty pairs of pre-post audiotapes were coded (Theresa B. Moyers et al., 2005).

MITI is currently being used with healthcare providers, trainers, and supervisors because it is cost effective and a focused tool for evaluating competence in the use of MI (Theresa B. Moyers et al., 2005). A limitation of this measure is that is not able to measure advanced skills during an MI session (Theresa B. Moyers et al., 2005). In part this is due to the coder making one pass through an audiotape.

Each coding system has pros and cons. Overall, it is important to select a coding system that meets the needs of the project and the available budget. To verify if MI has changed a

client's behavior, the MISC needs to be utilized. For other research purposes the MITI has been found to be valid and reliable (Theresa B. Moyers et al., 2005; Pierson et al., 2007).

Conclusion

Healthcare providers have used MI for the last 33 years to help clients with a different health circumstances. From individuals who are working on addiction to alcohol, tobacco, or other drugs to individuals who want to improve their diet, increase physical activity, or to lose weight. MI is a client-centered approach that works to increase an individual's intrinsic motivation. There are four core processes: engaging, focusing, evoking, and planning. Foundational to the practice of the processes are four spirit elements that include partnership, acceptance, compassion, and evocation. In order to guide a patient toward a behavior change, the healthcare provider and client must work together.

Currently, the most common training method for teaching MI is through face-to-face workshops. Face-to-face workshops may limit access to many who would like and need training in MI due to travel, time, and expense. To make MI training more accessible to individuals, evidence-based online training needs to be developed. There is limited literature comparing face-to-face and synchronous online workshops for MI. At this time, face-to-face workshops consist of didactic materials, interactive activities, discussion, role-playing, and feedback. Since the content of face-to-face training has been effective it would be necessary to have those same components in an online format. There is evidence that face-to-face workshops that are longer in duration and have mechanisms for feedback and coaching are beneficial in developing and maintaining proficient MI skills. Therefore, feedback and coaching should be included when developing MI trainings online. A possible advantage of online training is continued feedback in the workplace without having to travel to another training that may not be near the individual. Little has been researched on whether online, synchronous workshops produce the same

outcomes as face-to-face training. The one study that specifically looked at a synchronous online and face-to-face MI training lacked randomization. This randomization could influence the understanding behind preference of trainings and possible outcomes of the study. In order to examine the proficiency developed from trainings the MISC was established to code individuals' audio recording of their skills. MISC was later reduced to a version called MITI. MITI is considered to be less time consuming to code but the downfall is that it is not as able to detect advanced MI skills. MI coding system should be utilized when looking at evidence-based studies.

The purpose of this research is to compare MI proficiency between face-to-face and online, synchronous MI training workshops. Understanding the effectiveness of these two trainings could be a turning point in MI. The knowledge from a study comparing the two modalities could provide access to high quality training that is necessary to help guide clients to change health behaviors and improve health outcomes. In turn, improving an individual's overall well-being.

CHAPTER III. METHODS

Motivation Interviewing (MI) is a client-centered counseling approach that focuses on helping individuals change behavior to improve health. Currently, there is limited research literature comparing the effectiveness of synchronous online and face-to-face MI training modalities. Understanding the effectiveness of these two training methods may help improve access to high quality training in rural and distant areas. Therefore, increasing the number of health and human service professionals using MI with their clients. The research questions that will be addressed in this study include: (1) What is the difference in Motivational Interviewing Treatment Integrity (MITI) coding scores between MI training that is delivered face-to-face versus synchronous online? (2) How does the amount of previous MI training affect MITI coding scores? (3) What is the difference between training modality preference before, after, and three months post MI trainings?

Participants

Participants were recruited through distribution of flyers, email, and word of mouth through Health Equity, Rethink Mental Health, Partnership 4 Health programs, Minnesota Department of Health programs, and North Dakota State University graduate students from the colleges of Human Development and Education and Health Professions. Participants were included if they were 18 years and older, in the human health service profession, and interested in obtaining MI skills. Participants were excluded if unable to participate in an online learning opportunity or unable to physically attend face-to-face training. Notification of possible risks including psychological, privacy and/or confidentiality of personal information, which were included in the informed consent and how the research team went about avoiding these risks. Participants were allowed to withdraw from the study at any time. Total research participants included eighteen human and health service professionals, six male and twelve females (mean ±

SD: age 39.5 ± 11.75). Professions included three nurses, three counselors, two social workers, one case manager, and nine other human and health service professions. The participants were randomized into the face-to-face (n=11) or online (n=7) synchronous training groups by using an online randomization program.

Each participant completed the informed consent, workshops, questionnaires, and an audio recording. The benefits of participating in this study included having the opportunity to develop professionally, the potential for increased empathy for clients, and guiding clients in improving or changing a behavior. Additionally, this study could allow for a better client and professional relationship that would result in better communication and trust. Each participant completing the study received a certificate of attendance with contact hours that can be used for continuing education credit. North Dakota State University Institutional Review Board approved the study (#HE17103).

Workshop Format

Registration for the research study was done through the recruitment flyer that contained a link to a survey program using Qualtrics. Once the research team closed the registration link, participants were randomly placed into either the face-to-face or synchronous online trainings. The research team sent out an email that included the group that participant was assigned to and the consent form. Two days after the initial email was sent, another email containing the survey was distributed to all of the participants. Selecting or clicking the next page button on the informed consent confirmed that the participant had read and understood the informed consent. The 'next' button transitioned participants into completing a demographic survey and pre-training survey. The pre-training survey contained questions about preference to training modalities, knowledge, confidence, and other questions related to MI. Each training group, the synchronous online and face-to-face, participated in a total of 14 hours in length over several

days. Scott Nyegaard, MS, member of the MINT, and expert trainer in MI, conducted the workshops. The first synchronous online workshop took place one month following the recruitment period.

E-mail reminders and phone calls

To keep participants engaged and limit drop-outs in the study between the time of recruitment and the first workshop, phone calls were made to participants to go over what was needed for the first workshop, answer questions, and reminded them to complete the survey. Email reminders were sent twice before the first synchronous online workshop to complete the survey. To remind participants of the first synchronous workshop, an email was sent out one week in advance. Participants also received the invite to join the online platform prior to the first workshop. Face-to-face received a phone call a month before the trainings to ensure they were still participating, to remind them of the upcoming training, and answer any questions. Emails were sent out each week to remind participants to complete the survey before the first face-to-face workshop.

Synchronous online training

The synchronous online workshop consisted of six online sessions each lasting two to three hours in April 2017. All sessions were completed in a three-week span. Participants chose a location that was convenient, quiet, and free from distractions. The online sessions consisted of didactic material, interactive discussion, and practice. The practice activities and discussion were done through a chat room associated with the Cisco WebEx platform. At the end of the sixth session, participants completed a post survey, which asked about preference of training modalities, knowledge, skills, confidence, and other questions related to the MI training. After completion of the surveys, participants were paired off and sent into private chat rooms to perform and record a session of MI. One participant was the interviewee and chose a behavior

they wanted to change. For example, one participant wanted to exercise more. The other

participant was the interviewer and used their MI skills to facilitate the behavior change.

Participants were given an hour total to complete the recordings; half way through the

participants' switched roles. The recordings were then given to the primary investigator, and

after the conclusion of the face-to-face training sent to the MITI coders. Three months after the

conclusion of the online training participants were sent a follow-up survey that consisted again of

their preference to the training modalities, confidence, knowledge, skills, and other questions

related to MI.

Face-to-face training

The face-to-face training took place over two consecutive days (seven hours each) in

June 2017. The face-to-face training was located at Clay County Family Services Center in

Moorhead, MN in a small conference room. The workshop consisted of the same material as the

online workshop: didactic material, interactive discussion, and practice. Each day allowed time

for role-play with feedback provided. After the second workshop, participants completed the

post-survey. Additionally, participants were paired up to perform and record a session of MI.

Like the online workshop, one participant chose a behavior they wanted to change, while the

other participant was the interviewer. Participants were given an hour total to complete the

recordings; half way through the participants' switched roles. The recordings were then given to

the primary investigator and sent to the MITI coders. Three months after the conclusion of the

face-to-face training participants were sent the follow-up survey.

Audio recordings

The audio recordings that were then given to the primary investigator were sent to the

MITI coders. The research team ensured that the training methods used were not identifiable.

The recordings were then sent to the MITI coders who were blinded to whether the participants

were in the face-to-face or synchronous online workshop. The scores from MITI coding showed the proficiency of MI skills that the participants obtained from the workshops. Participants received feedback of their MI interview from the coders.

Instruments

Motivational interviewing treatment integrity

Motivational Interviewing Treatment Integrity (MITI) was used as an assessment tool to evaluate participant's proficiency in MI. Currently, MITI is being used with healthcare providers, trainers, and supervisors because it is cost effective and a focused tool for evaluating competence in the use of MI (Moyers et al., 2005). Participants' audio recordings were sent to MITI coders who are using the 4.2.1 version (Moyer et al., 2014). The coders were blinded to whether the participants were in the face-to-face or synchronous online workshop. The coder listened and coded the entire 20-minute recording session of the participant. MITI consists of four global scores based on the five point Likert scale: cultivating change talk, softening sustaining talk, partnership, and empathy. Ten behavioral scores were taken into consideration: giving information, affirming, seeking collaboration, persuading, emphasizing autonomy, confronting, reflection (simple or complex), and questions (open, closed, etc). The eight behavioral scores were based on what the interviewer said to the interviewee during the audio recording. After the audio recordings were scored, the coders provided personalized feedback to the participants.

Data Analysis

Data was analyzed using SPSS (Version #23). Analysis of descriptive statistics, and frequency of preference before, after, and three months after training was conducted. Statistical comparisons using an independent t-test between the coding scores from MITI face-to-face and online was performed. Statistical significance was set at $p<0.05$.

CHAPTER IV. ARTICLE

Healthcare providers have been administering front-line behavioral care to their clients for centuries. Through their work, they assist clients achieve a better quality of life. Because chronic diseases developed by poor health behaviors are a leading cause of death (Blair, Kohl, Paffenbarger, Clark, Cooper, & Gibbons, 1989, Kampert, Blair, Barlow, & Kohl, 1996, Choi, & Stommel, 2017, Loef, & Walach, 2012, Ford, Bergmann, Boeing, Li, & Capewell, 2012), it is crucial providers develop knowledge of skills and ability to use these skills to help their clients improve health behaviors to reduce or eliminate chronic conditions. In fact, the Center for Disease Control (2014) indicates that seven of the ten leading causes of death for adults are associated with chronic diseases that are caused by poor lifestyle. Individuals come to see a healthcare provider with various levels of commitment to change, and may not comply with the provider's suggestions (Stonerock & Blumenthal, 2017, Martin, Williams, Haskard, & DiMatteo, 2005, Genberg, Lee, Rogers, Willey, & Wilson, 2013). However, when a provider is empathetic and engages the patient, there is a higher level of compliance (Bakker et al. 2001, DiMatteo et al., 1993, Street et al., 2009). Therefore, it is essential for healthcare providers to be skilled in techniques that can lead to behavioral change in their client, resulting in a better quality of life.

Motivational Interviewing (MI) is an evidence-based technique that has been used in a variety of settings to promote positive behavior change (Emmons & Rollnick, 2001; Söderlund, Madson, Rubak, & Nilsen, 2011; Soderlund, Madson, Rubak, & Nilsen, 2011; Zare Mangabady, Khosravi, Jafari Nodoushan, Jafari Nodoushan, & Azadnia, 2014). More specifically, MI is a client-centered counseling technique that uses collaborative conversation style for strengthening a person's motivation and commitment to change (Miller & Rollnick, 2012). Four elements encompass MI including collaboration, acceptance, compassion, and evocation (Miller & Rollnick, 2012). These four elements are interrelated and are at the core of the spirit of MI,

which is a "way of being" with the client. In addition to the spirit of MI, there are several communication skills used such as open-questions, affirmations, reflections, and summarizations (Miller & Rollnick, 2012). MI is based on mutual understanding that the healthcare provider and client are going to work together to improve the client's health. For example, MI has been used to change behavior with alcohol consumption, tobacco use, and engagement in exercise (Christie & Channon, 2014; Dunn, Deroo, & Rivara, 2001; Secades-Villa, Fernánde-Hermida, & Arnáez-Montaraz, 2004). Through the use of MI, healthcare providers can effectively work with clients to improve their health.

For a healthcare provider to use MI effectively, they must be trained through workshops, supervised practice, coaching, and feedback from an experienced trainer. MI is taught through didactic material, demonstration, role-playing, and feedback (Daeppen et al., 2012; Darnell et al., 2016; Miller et al., 2004). Traditionally, MI training is conducted over the course of one to several days and consists of a variety of levels, from an introductory workshop to "Training of New Trainers" (Miller & Rollnick, 2012 p.378). To evaluate whether or not a provider's MI skills are executed efficiently, audio recordings are coded using Motivational Interviewing Treatment Integrity (MITI). Whether it be in role play or a real interaction, the coding allows the provider to see what elements of MI that he or she may need to work on to more effectively use the technical skills and better embody the MI spirit. The MITI is composed of behavior counts and global rating scales and have been shown to be a valid and reliable tool for establishing proficiency (Owen, Rowell, & Moyers, 2017, Moyers, Rowell, Manuel, Ernst, & Houck, 2016).

Even though MI training is traditionally provided in a face-to-face format, there are limiting factors that prevent healthcare providers from attending MI workshops including travel, time, and cost. Therefore, web-based training is a feasible alternative to face-to-face workshops;

it is accessible and cost-effective (Khhanna & Kendall, 2015, Fontaine et al. 2016, Mullin et al., 2016). Furthermore, web-based training could enable an unlimited number of healthcare providers to access MI training. However, there is limited research on the comparison between the traditional face-to-face workshops compared to synchronous online training (Mullin et al., 2016). The most current research is by Mullin et al. (2016), who conducted a study on the comparison of face-to-face workshop and an online workshop and found that an online workshop would be feasible. However, the study was not randomized; therefore, preference could play a role in how the participant enrolled in the groups. For example, older individuals may prefer a face-to-face workshop since they are not as familiar with technology as younger participants. These are factors to consider when comparing a face-to-face and online workshop; a randomized study is critical.

The purpose of this study was to compare MI skill proficiency of participants who were randomized into face-to-face and synchronous online training sessions. Additionally, we looked at whether preference changes over the course of the training. The hypothesis was that there will be no difference in MITI scores between the two training modalities, but participants will prefer face-to-face training compared to online training. This study could continue to move MI modalities forward to allow more healthcare providers and individuals an opportunity to take part in MI training.

Methods

The sample for the study included eighteen participants with six males and twelve females. Participants were ≥ 18 (mean $\pm$ SD: 39.5 ± 11.75). All participants worked in the health and human service profession. Professions included the following: nurse (3), counselor (3), social worker (2), case manager (1), and other (9). Participants were recruited through email and word of mouth through the following agencies: Health Equity Rethink Mental Health, Minnesota

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PartnerSHIP4 Health programs, Minnesota Department of Health, and North Dakota State University graduate students from the colleges of Human Development and Education and Health Professions. After initially signing up and completing the informed consent, participants were randomized to the face-to-face and synchronous online group using Microsoft Excel. Participants were compiled and given an identification number and then randomly given a zero indicating the synchronous online group or one indicating the face-to-face group. North Dakota State University Institutional Review Board approved the study (#HE17103).

<p align="center">Training Modalities</p>

Face-to-face

  The face-to-face training sessions were conducted in June 2017 over two days; each day was eight hours with an hour lunch break. All eleven participants completed both days. The training consisted of didactic material, interactive discussion, and practice. Throughout the training, participants would break into groups and practice a particular skill of MI. The instructor would go around and provide feedback to the participants. At the conclusion, participant's audio recorded themselves using MI with another participant.

Synchronous online

  The synchronous online training sessions took place in April 2017 and were led by the same trainer of the face-to-face training. Therefore, materials presented were kept consistent between the two training methods. Training included didactic material, interactive discussion, and practice. The online platform used was Cisco WebEx. The synchronous online training session were conducted over six sessions. The first and last session lasted three hours while the other four lasted two hours. The six sessions were spaced every other day (Monday, Wednesday, and Friday) with a week break between the two weeks. The overall training was a total of fourteen hours. During practice times the participants were placed into virtual break out rooms.

The instructor had the capability to enter each breakout room to provide feedback. At the conclusion, participants completed an audio recording. Figure 3 indicates participant's attendance for each of the training sessions.

Online Attendance

Session	Attendance
Session 1	9
Session 2	11
Session 3	10
Session 4	8
Session 5	8
Session 6	8
Completed Audio Recordings	6
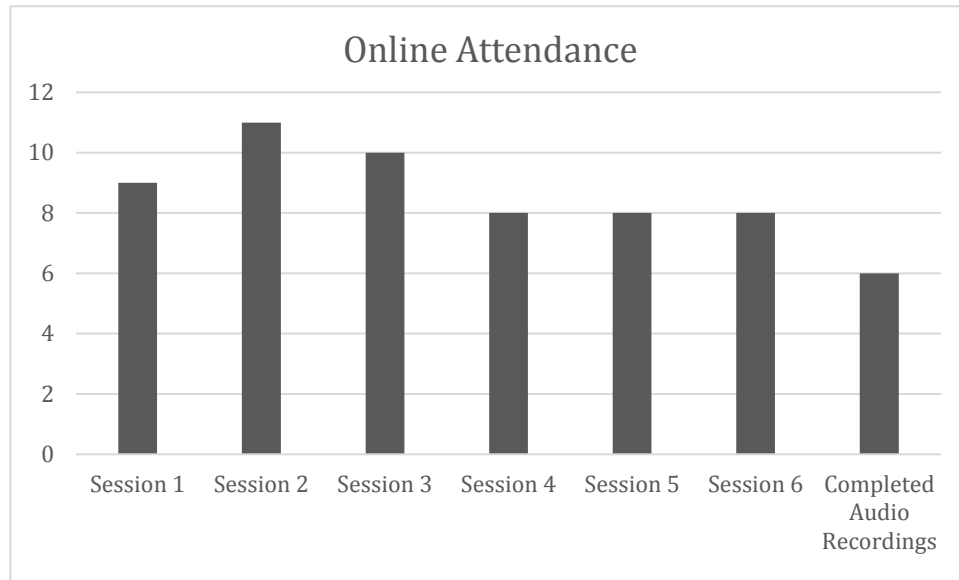
Figure 3. Online training session attendance

Audio Recordings

At the conclusion of the face-to-face and online training modalities, participants were randomly paired with another participant in their training modality to conduct a session with each other. Participants were told that they should incorporate their MI skills that they had acquired over the course of the training. They had an hour to complete their audio recording with each participant getting thirty minutes to be the "Motivational Interviewer" and the other thirty minutes being the "patient." Participants had the opportunity to choose a behavior that they were ambivalent about. The online group was put into breakout rooms and then sent the research team their recording when completed. The face-to-face group had audio recording devices and then handed them in when finished. The audio recordings were sent to two trained coders for analysis.

Surveys

Participants completed three surveys over the course of the study. After participants were randomized into groups, they completed an initial survey that consisted of demographic information, preferences to the training modalities, and confidence, knowledge, and skills in MI. After the completion of the training, participants were asked questions in regards to the format of the training they participated in, again their preference for both training modalities, and their confidence, knowledge, and skills in MI. Participants were asked to complete a three-month follow-up survey about their perceived confidence, knowledge, skills, and their preference to the two training modalities.

Instrumentation

The audio recordings from both trainings were compiled together and then randomly assigned to two expert coders, without indicating which group the participant belonged. Audio recordings were evaluated using MITI 4.2.1 to measure the proficiency of participants' MI skills. The MITI 4.2.1 consists of two competent; technical and relational. Technical scores represent the intentional influence of the clients offered language. Relational scores represent the intentional influence of the clients offered language. The two components are then broken down into four global rating scores that are based on a five-point scale. The four global rating scores are used to determine if participants are cultivating change talk, using softening sustain talk, partnership, and empathy. For partnership a one indicates, "clinician actively assumes the expert role for the majority of the interaction with the client and collaboration is absent" and a five indicates "clinician actively fosters and encourages power sharing in the interaction in such a way that client's contributions substantially influence the nature of the session" (Moyers, Manuel, & Ernst, 2014, p.9). The Likert scale for empathy is represented by one indicating "clinician gives little or no attention to the client's perspective" and a five indicates "clinician

shows evidence of deep understanding of client's point of view, not just for what has been explicitly stated but what the client means but has not yet said" (Moyers et al., 2014, p.11) For cultivating change talk a one indicates "clinician shows no explicit attention to, or preference for, the client's language in favor of changing" and a five indicates, "clinician shows a marked and consistent effort to increase the depth, strength, or momentum of the client's language in favor of change talk" (Moyers et al., 2014, p.5). For softening sustain talk a one indicates "clinician consistently responds to the client language in a manner that facilitates the frequency or depth of arguments in favor of the status quo" and a five indicates "clinician shows a marked and consistent effort to decrease the depth, strength, or momentum of the clients language in favor of the status quo" (Moyers et al., 2014, p.7). The MITI also consists of ten behaviors counts that include: giving information, persuading, persuading with permission, questions, simple reflection, complex reflection, affirming, seeking collaboration, emphasizing autonomy, and confronting. Other scores that the MITI assess include; percentage of complex reflections, ratio of reflections to questions, MI adherence, and MI non-adherence. MITI 4.2.1 has shown preliminary results showing reliability and validity (Owen, Rowell, & Moyers, 2017, Moyers, Rowell, Manuel, Ernst, & Houck, 2016).

Statistical Analysis

Data were analyzed using SPSS (Version #23). Descriptive statistics of participant's demographic information was analyzed. Independent sample t-test was used to examine differences in MITI scores between the two training modalities. An alpha level of $p < 0.05$ was used to determine differences.

Results

A total of 69 individuals registered to participate in the study. Participants were randomly placed into one of the two training groups, online or face-to-face training. From each group, twenty were informed they would receive training, and the rest were placed on a waitlist (Figure 4). Participant's demographic information can be found in Table 1.
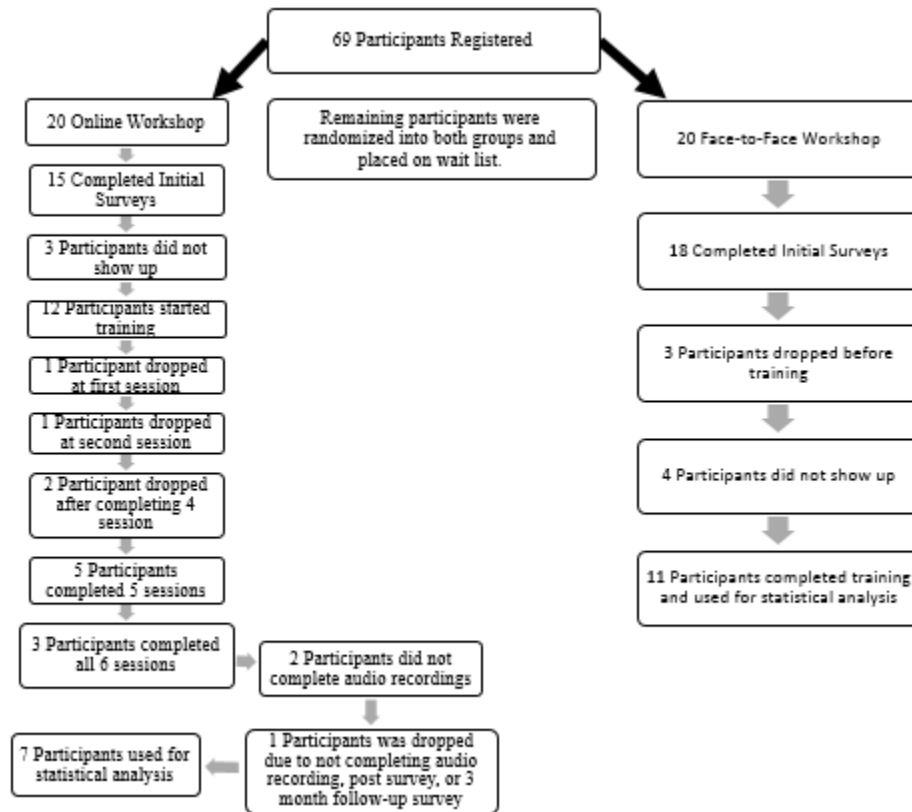

Figure 4. Participant drop-out

Table 1

Demographics

Demographics	Face-to-Face Group (n = 11)	Online Group (n = 7)
Gender		
Male	3	3
Female	8	4
Race		
White	10	6
Asian	0	1
Latino	1	0
Education Level		
Some College no degree		1
Associate Degree		1
Bachelor Degree	6	3
Master's Degree	4	2
Doctoral	1	
Number of years in Health and Human Service Profession	12.64 ± 10.02	10.64 ± 7.26
Occupation		
Case Worker	1	1
Counselor	2	1
Nurse	2	1
Social Worker	2	0
Other	5	4
Previous MI Trainings in Last Year		
None	8	4
One	2	2
Two	1	1

*Descriptive statistics are reported as mean ± SD

Relational and technical scores

Relational and technical scores are based on a five-point Likert scale. The mean MITI relational scores, which is the average of partnership and empathy global ratings for both groups, are reported in Table 2. The mean MITI technical scores, which is the average of cultivating change talk and softening sustain talk, are also reported in Table 2 along with the results of independent samples t-test. Reference values for MITI threshold for competency defined in the

MITI 4.2.1 manual are also included in Table 2. There was no significant difference (p<0.05)

and both groups had mean scores above the fair MITI threshold for competence for relational

and technical. Additionally, there was little difference between the two groups.

Table 2

MITI relational and technical scores

MITI Scores	MITI Threshold for Competency	Mean Face-to-Face (n=11)	Mean Online (n=5)	p
Relational	3.5	3.60	3.59	0.986
Technical	3	3.80	3.79	0.992

Global ratings

The mean MITI global rating scores for both groups, along with the results of

independent sample t-test are reported in Table 3. The MITI global rating scores consist of

cultivating change talk, softening sustain talk, partnership, and empathy. There was no

significant difference (p<0.05) between the groups. The face-to-face group had a higher global

partnership mean (4.09) compared to the online group (3.60). Whereas, the online group had a

higher global empathy mean score (4.20) compared to the face-to-face group (3.82).

Table 3

MITI global rating scores

Global Ratings	MITI Threshold for Competency	Mean Face-to-Face (n=11)	Mean Online (n=5)	p
Cultivating Change Talk	3	3.40	3.36	0.953
Softening Sustain Talk	3	3.60	3.40	0.750
Partnership	3	3.60	4.09	0.252
Empathy	3	4.20	3.82	0.314

Behavior counts

The mean MITI behavior counts for both groups, which include giving information, persuading, persuading with permission, questions, simple reflection, complex reflection, affirming, seeking collaboration, emphasize autonomy and confronting, along with the results of an independent t-test are reported in Table 4. Giving information was the only behavior count that showed statistical significance (p=0.045). The online group had a higher frequency of giving information, affirming, and persuading with permission compared to the face-to-face group. The face-to-face group had a higher rate of simple reflections, seeking information, and autonomy.

Table 4

MITI behavioral counts

Behavioral Counts	Mean Face-to-Face (n=11)	Mean Online (n=5)	p
Giving Information	0.64 ± 1.027	2.00 ± 1.414	0.045*
Persuade	0.09 ± 0.302	0.00	0.519
Persuade with Permission	0.00	0.40 ± 0.894	0.374
Questions	11.91 ± 6.426	11.60 ± 4.827	0.925
Simple Reflection	5.36 ± 4.843	3.20 ± 2.280	0.363
Complex	10.00 ±5.745	10.60 ± 2.302	0.827
Affirming	1.73 ± 1.794	3.60 ± 2.510	0.108
Seeking Collaboration	0.27 ± 0.467	0.00	0.082
Emphasizing Autonomy	0.09 ± 0.302	0.00	0.519
Confront	0.00	0.00	--

*Significance at the p<0.05.

Other scores

The mean MITI percentage of complex reflections, reflections to questions, MI adherent, and MI non-adherent for both groups, along with the results of independent sample t-test are reported in Table 5. There was no significant difference (p<0.05). The MITI proficiency thresholds are represented in the table. Both training groups scored over the "good" MITI

thresholds for competence for the percentage of complex reflections. The face-to-face had higher

reflections to questions compared to the online group. The online group was more MI adherent,

which takes into consideration emphasizing autonomy, seeking collaboration, and affirming

compared to the face-to-face group. While the online group did not display MI non-adherent

behavior, the face-to-face group displayed a slight increase. MI non-adherent takes into

consideration persuading and confronting behavior.

Table 5

MITI scores for complex reflections, ratio of reflections to questions, MI adherence, and MI non-adherence

Other Scores	MITI Proficiency Threshold	Mean Face-to-Face (n=11)	Mean Online (n=5)	p
(%)Complex Reflections	40%	65 ± 25.306	77 ± 15.764	0.350
Reflections/Questions	1:1	2.427 ± 3.299	1.374 ± 0.743	0.500
MI Adherent	--	1.64 ± 1.629	3.60 ± 2.510	0.079
MI Non-Adherent	--	0.09 ± 0.302	0.00	0.519

Preference

The preference for online and face-to-face training for each training modality over the

course of the training is reported in Figure 4. The preference was asked based on a five-point

Likert scale with one indicating strongly do not prefer and five indicating strongly prefer. The

face-to-face group preferred a face-to-face training over online throughout the three surveys.

However, after the completion of the training, the face-to-face group preference of a face-to-face

training increased from baseline (4.27 ± 0.904) after the training to a score of strongly prefer (4.7

± 0.675) but then returned close to baseline at the three-month mark (4.429 ± 0.787). The online

group had a slightly higher preference at baseline to the online training (3 ± 1.291) compared to

the face-to-face group (2.636 ± 0.809). Additionally, the preference for the online group to an

online training increased at the conclusion of the training (3.429 ± 0.976) and remained three months after (3.5 ± 1.049). One interesting note was that the online group's preference for their previously preferred preference to a face-to-face training decreased after the training (4 ± 0.817) toward a more neutral preference (3.429 ± 0.976). Even though the online training was somewhat preferred, a face-to-face training was the most preferred mode of training.
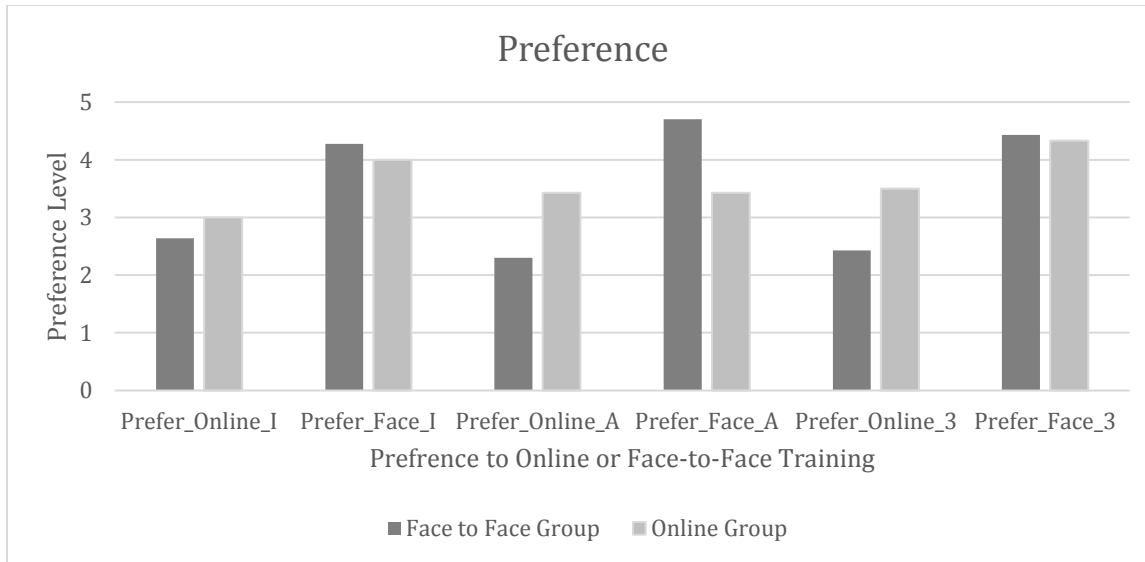

Figure 5. Participant's preference to face-to-face trainings and online trainings

Discussion

The purpose of this study is to compare MI skill proficiency between a face-to-face training and synchronous online training. Participants were randomized into either a face-to-face or synchronous online training. The hypothesis is that there would be no difference between the two training modalities because it would be the same training just utilizing two different platforms. The results of the study found no significant difference in MI skills between the two groups except the behavioral count of giving information. A previous study by Mullin et al. (2016) found similar results even though the participants were not randomized. Participants in both groups did not differ significantly in their improvements in MI skills. Similarly, in the

current study, much like Mullin et al. (2016) study, found that the online group had a higher number of simple reflections and partnership scores. Additionally, the Mullin et al. (2016) study had a similarly small sample size. However, this study found differing results on MITI proficiency threshold. In the current study, the means for both groups' skills were above the MITI proficiency threshold. Therefore, online training is comparable to in-person training. These are the only two studies comparing these two training modalities; further research needs to be conducted.

One limitation of using the MITI 4.2.1 for this study is the sensitivity of picking up variances in the provider's language. The MITI 4.2.1 is considered a useful tool for measuring foundational or entry-level competence in MI but does not take in consideration the client's language (Moyer, Rowell, Manuel, Ernst, Houck, 2016). Identifying the client's language can help assess their readiness to change or commitment language (Moyer et al., 2010). Furthermore, the MITI 4.2.1 consists of fewer and broader global ratings and behavioral categories, information that providers give could be difficulty to identify when coding (Moyer et al., 2016). A Likert scale also determines these global scores rather than by behavior counts. Behavioral counts would give a better indicator of global ratings (Owens, Rowell, & Moyers, 2017). Also, the MITI may underestimate the ability of the provider using MI compared to the Motivational Interviewing Skill Code (MISC) that utilizes multiple coding sessions (Moyer et al., 2016). Multiple audio recordings provides more opportunities for the coder to better discern global and technical scores. Therefore, the MISC is more sensitive, but more time-consuming and subsequently more costly to utilize. To provide feedback to providers quickly and economically, the MITI is more beneficial. Additional research is needed to determine if the

MITI 4.2.1 is sensitive enough to identify variances within an audio recording, which would better establish if online training is comparable to face-to-face training.

One factor that needs to be taken into consideration when looking at training modalities is the way that individuals learn. Secondly, their preference to the training modality, whether it be face-to-face, synchronous, or asynchronous online (Giesbers, Rienties, & Gijselaers, 2013). Some individuals may prefer a face-to-face interaction whereas others may prefer online where they can stay in the comfort of their home or complete the training anywhere they have internet access. Preference can also equate to cost, time, and accessibility (Khanna & Kendall, 2015). However, the hypothesis was that the majority of participants would prefer face-to-face training. Training preference may have influenced the dropout rate of the current study. There were several emails during the registration process that potential participants asked whether they could explicitly sign up for one training over the other. Instead of not being in the research study, they may have registered and hoped they would be randomly placed in the training they wanted, then if not placed in the desired training, drop out. However, since there was not much change in preference over time, this seems to indicate that participants were open to online training.

Further research

There is a need for additional research on whether synchronous online training is feasible and proficient in delivering MI with larger sample sizes and randomization. A further looking into the longitudinal retention of MI skills with online training is required. A longitudinal study would be a continuation of whether synchronous online training yields retention comparable to in-person training. Also, research should focus on asynchronous training and MI skills using MITI coding and the preference of face-to-face, synchronous, and asynchronous. Further research would allow a better understanding of how MI could evolve to encourage more health

and human service professionals to participate in training in order to strengthen their ability to help their clients improve their health.

Strengths

There were several strengths of this study. The first was that the study was randomized. Randomization eliminated participant training self-selection bias. Another advantage was the consistency between the two groups. Both groups had the same trainer and completed the same number of hours of MI training. Therefore, the groups can be compared to the training modality rather than other factors. Lastly, the Cisco WebEx platform allowed participants to be on the same platform at the same time. With web camera capabilities it gave better interaction between participants and the trainer, which made it more comparable to the face-to-face training. Additionally, the capabilities of the breakout rooms were key to finding a suitable platform. Thus, without the breakout rooms, participants would not have been able to practice with one another as the in-person training group.

Limitations

In addition to the strengths, there were also limitations to the current study. The sample size was intended to be similar to Mullin et al. (2016), but with dropout, it reduced the number significantly. The dropout could have been attributed to when the training was available or preference to one training over the other. Therefore, the sample size limited the power to detect the difference between the groups MITI scores. Another limitation was not having participants perform an audio recording of themselves using MI with a client before the training started. Having a pre- and post-assessment of the participant's skills would have been beneficial in determining if there was growth in MI skills over the course of the training and difference between groups growth. Another limitation is asking preference after being randomized into the

groups. Asking participant's preference before randomization could have led to a preconceived notion of participant's idea of the training.

Conclusion

Healthcare provider and patient communication and interaction are critical for improved changes in health behavior. The provider and patient need to establish a working relationship, which requires the provider to have proficient communication skills and tools when working with a patient. Therefore, MI is a beneficial technique for providers to obtain. This study provides evidence that health and human service professionals completing training either in a face-to-face or synchronous online format can acquire MI skills. The results suggest that a face-to-face training is the preferred mode of training. However, individuals have a neutral feeling toward online training. Online training would allow more individuals to have access to high-quality MI training in rural and distant areas. It would remove some of the barriers such as cost and time away from work and home. However, since this is only the second study comparing the two training modalities, further research should be conducted using a larger sample size to determine if synchronous online MI training is an adequate training modality for MI.

CHAPTER V. SUMMARY/CONCLUSION

MI is a client-centered counseling approach that focuses on a collaborative, goal-oriented style of communication (Miller & Rollnick, 2012, p410). MI has been used successfully to positively change many health behaviors including tobacco cessation, consuming a healthy diet, engaging in exercise, and reducing alcohol and other drug use (Emmons & Rollnick, 2001; Söderlund, Madson, Rubak, & Nilsen, 2011; Soderlund, Madson, Rubak, & Nilsen, 2011; Zare Mangabady, Khosravi, Jafari Nodoushan, Jafari Nodoushan, & Azadnia, 2014). In order for health and human service professionals to become proficient in MI, effective training processes are essential.

The purpose of this study was to compare MI skill proficiency of learners engaged in two different training modalities. Health and human service professionals were randomly placed into two groups: face-to-face (n=11) or synchronous online training (n=7). Each group completed fourteen hours of MI training with an audio recording of participants conducting an MI interview at the conclusion.

The first research question was to determine if there was a difference in MITI coding scores between the two training modalities. There was no statistical significant difference between the training modalities other than the behavioral count of giving information (p=0.045). The online group had two participants score below the "fair" relational component MITI threshold for competency of 3.5; whereas the face-to-face group had four participants score below the "fair" threshold. Therefore, 60% of the online group and 63.6% of the face-to-face group passed the competency threshold. Two participants in the face-to-face training group scored below the "fair" technical component MITI threshold for competency at a 3. In contrast, all participants in the online group were above the "fair" threshold for the technical component. Regardless of the training modality, participants reported confidence in their MI skills suggesting

either face-to-face or online is sufficient training for MI. Further research with a larger sample size is essential to understand the difference between the two modalities.

The second research question focused on whether the amount of previous MI training a participant had affected their MITI coding scores. The amount of previous training was broken down into two groups: no previous training (n=11) or one or more previous training experience(s) (n=5). All of the MITI scales were ranked on a five-point Likert Scale. MITI global scales consisted of cultivating change talk, softening sustain talk, partnership, and empathy. When looking at technical global scores, which includes cultivating change talk and softening sustain talk the mean for no previous training and one or more previous training experience(s) were 3.75 ± 0.866 and 3.9 ± 0.821, respectively. When looking at relational global scores participants with no previous and one or more previous training experiences resulted in a MITI threshold of "fair" for partnership and empathy with mean scores of 3.36 ± 0.93 and 4.1 ± 0.821, respectively. Both groups, regardless of previous training, met the MITI threshold for competence, however having previous training in MI resulted in higher global rating scores.

The third research question was to understand the difference between training modality preference of online training versus face-to-face training before, directly after, and three months after the MI training. The degree of preference was based on a five-point scale Likert with one indicating strongly do not prefer and five indicating strongly preferred. The means for the face-to-face participants' preference to online training were between somewhat do not prefer and neutral before training (2.636 ± 0.809), immediately after training (2.3 ± 0.949), and continuing to three months post-training (2.429 ± 0.787). Before the training, participants somewhat preferred face-to-face training (4.272 ± 0.904) compared to after engaging in face-to-face training they increased their preference towards strongly agree (4.7 ± 0.675). This, however, was

not the same reaction for the online group. Prior to the start of the study, the online group was neutral (3 ± 1.29) for their preference to face-to-face trainings, with similar preferences after the training (3.429 ± 0.976). Additionally, the online group (4 ± 0.817) had a comparable preference for face-to-face training (3.429 ± 0.976). Three months post-training, the online group preferred face-to-face over online training (4.33 ± 0.817). Overall, the face-to-face group and online group preferred face-to-face training at three months post-training. Comparatively, the online group preferred face-to-face training initially, they became indifferent to face-to-face or online training directly post-training; however, their preference changed back to face-to-face training three months after. Thus, the participants in both the face-to-face and online group favored the face-to-face method.

The current study had several possible biases. Although the trainer facilitated both of the trainings, the trainer could have been more comfortable with the face-to-face trainings, which may have been perceived by the participants. The researcher attended all face-to-face and online training sessions. Through the experience of the researcher, the face-to-face group was more engaged compared to the online group. The first questionnaire was given after the participants were randomly placed into the two groups; therefore, there could have been some bias in responses related to training preferences. It would be better to ask participants their training preference prior to randomization into the two groups to get a better understanding of preferences in future studies. Online training may be a feasible mode of training; however, additional studies investigating the effectiveness of various synchronous online platforms used for MI training are warranted.

Conclusion

Synchronous online training is a plausible modality since participants' MITI scores were similar to that of face-to-face training. Additionally, many participants reported preferences for

training were somewhat open to the concept of online training. Although this is the first study to have participants randomly place into the two training modalities, future studies should ask participants their training preference prior to randomization into training groups. Future research comparing synchronous online training to asynchronous online training is important in order to further build evidence-based training methods. Increasing our understanding regarding effective training is important so that more individuals in the health and human service profession have access to MI training by reducing the barriers of cost, travel time, and time zones. This will allow health and human service professionals to learn the necessary skills to work collaboratively with their clients to change behavior and improve the client's well-being.

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NDSU   North Dakota State University

Health, Nutrition, & Exercise Sciences
NDSU Dept 2620
PO Box
Fargo, ND 58108-6050
701.231.8603

Title of Research Study: Comparison of face-to-face and synchronous web-based training for health and human service professionals: does it matter?

This study is being conducted by: Research will be conducted by Principal Investigator Mary Larson, PhD and Co-Investigators Shannon David, PhD and Amanda Fairweather, BS at North Dakota State University.

Why am I being asked to take part in this research study?
We are recruiting up to 40 participants for this research study.

You are being asked to participate in this research study because you:
- Are 18 years or older
- In the Health and Human Services profession
- Interested in Motivational Interviewing

You should not participate in this study if you are
- Unable to participate in a web-based opportunity
- Unable to physically attend face-to-face trainings

What is the reason for doing the study? The purpose for this study is to compare face-to-face training against web-based training. By better understanding the effectiveness of the two training methods may help improve access to high quality training in remote areas, and therefore increase the number of health and human services professionals training to use Motivational Interviewing with their patients or clients.

What will I be asked to do?
Information will be provided at the first training session. This is a chance to ask questions. You will be asked to complete the following before and during the trainings:
- Questionnaire/Survey
  - You will be asked to provide some information on your background, experience and training in Motivational Interviewing, empathy, and burnout before and after the workshops.
- Face-to-face training
  - Attend training that will be approximately 14 hours total over the course of two days.
  - The workshop will consist of presentations and activities.
- Online training

- o Attend the training workshops online that will last approximately a total of 14 hours over 6 days in 2-3-hour increments.
  - o The workshop will consist of presentations and activities.
- Audio Recording
  - o You will be asked to provide a 30-minute audio recording of yourself with another participant in the workshop.
  - o The recording will then be coded by a trained coder using Motivational Interviewing Treatment Integrity (MITI) 4.2.1
  - o After the study has concluded the recordings will be destroyed.
- Coaching Session
  - o You will be asked to schedule a coaching session with a Motivational Interviewing trainer who will provide feedback to support your use of MI with your patients/clients.

Where is the study going to take place, and how long will it take?
The face-to-face training will take place in a quiet conference room in Clay County Family Services Center in Moorhead, MN. The online training will take place on a computer, which you will access, at a location that facilitates your participation. This location should be quiet and away from any distractions. Each online participant should have his/her own computer to use for the duration of the training. The entire study will take a total of approximately 16 hours to complete over several days. Included in this time is the workshops and filling out all questionnaires. Each participant will work with his/her supervisor to either participate in the training during paid work time or take time away from work for the training.

What are the risks and discomforts? It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known risks to the participant**.** If new findings develop during the course of this research, which may change your willingness to participate, we will tell you about these findings*.*
1) Privacy and/or confidentiality of personal information (email, phone number). (Low risk of occurring)
   a. All documents with personal information will only be seen by the research team and be shredded after the study is complete.
2) Psychological-You will be engaging in discussions around a behavior you would like to change, but haven't been able to change yet. You will want to select a topic that you are comfortable discussing with others. It is rare, but at times these discussions may become emotional. (Low risk of occurring)
   a. The design of the training is one that is based on mutual trust and respect. Time is spent building a comfortable training environment for everyone in order to minimize risks or discomfort.

What are the benefits to me?
This study will provide you an opportunity to develop yourself professionally by gaining knowledge and skills in Motivational Interviewing. These professional development

benefits include the potential for increased empathy for patients/clients and guiding patients/clients in improving/changing their behavior. Additionally, this study could allow for a better client/professional relationship that would result in better communication and trust. However, you may not receive any benefit from being in this research study.

What are the benefits to other people?
The clients/patients will benefit from working with health and human services professionals who are trained in Motivational Interviewing because it is a respectful and empowering way of being with people. Additionally, we plan on publishing our findings in order to disseminate our findings to a broader audience, which could improve the way Motivational Interviewing training is provided. Our findings could lead to more people being exposed to Motivational Interviewing.

Do I have to take part in the study? Your participation in this research is your choice. If you agree to participate in the study, you may change your mind and stop participating at any time without penalty or loss of benefits to which you are already entitled.

What are the alternatives to being in this research study?
Instead of being in this research study, you can choose not to participate.

Who will see the information that I give?
We will keep private all research records that identify you. Your information will be combined with information from other people taking part in the study. When we write about the study, we will write about the combined information that we have gathered. We may publish the results of the study; however, we will keep your name and other identifying information private. We will make every effort to prevent anyone who is not on the research team from knowing that you participated and any information you have given us. For example, your name will be kept separate from your research records and these two things will be stored in different places under lock and key. If you withdraw before the research is over, your information will be retained in the research record, and we will not collect additional information about you.

Can my taking part in the study end early?
If you fail to attend the workshops the study may end early for you.

Will I receive any compensation for taking part in this study?
If you decide to participate you will be compensated with a certificate of attendance with contact hours that can be used for CEUs. In the event that a participant is only able to attend one day of training, a certificate of attendance will be provided for the number of hours attended. Participants who attend less than one, full day of training will not receive a certificate of attendance for a partial day.

What if I have questions?
Before you decide whether to accept this invitation to take part in the research study, please ask any questions that might come to mind now. Later, if you have any

questions about the study, you can contact the Principal Investigator, Mary Larson at mary.larson2@ndsu.edu or 701-231-8603 or Co-Investigator Amanda Fairweather at Amanda.fairweather@ndsu.edu.

What are my rights as a research participant?
You have rights as a participant in research. If you have questions about your rights, or complaints about this research [may add, "or to report a research-related injury" if applicable], you may talk to the researcher or contact the NDSU Human Research Protection Program by:
- Telephone: 701.231.8995 or toll-free 1.855.800.6717
- Email: ndsu.irb@ndsu.edu
- Mail: NDSU HRPP Office, NDSU Dept. 4000, PO Box 6050, Fargo, ND 58108-6050.

The role of the Human Research Protection Program is to see that your rights are protected in this research; more information about your rights can be found at: www.ndsu.edu/irb .

Documentation of Informed Consent:
You are freely making a decision whether to be in this research study. Signing this form means that
1. You have read and understood this consent form
2. Your questions have been answered, and
3. You have decided to be in the study.

You will be given a copy of this consent form to keep.

_____   _____
Your signature   Date

_____
Your printed name

_____   _____
Signature of researcher explaining study   Date

_____
Printed name of researcher explaining study

Motivational Interviewing Training Recruitment Flyer

North Dakota State University and Scott Nyegaard, Motivational Interviewing expert trainer, are conducting an evaluation to determine if there is a difference in outcomes between individuals who participate in face-to-face Motivational Interviewing Training and those who participate in online Motivational Interviewing training.

We are recruiting health and/or human service professionals who are 18 years or older who are willing to participate in the training and pre/post training questionnaires.

Participation Includes:
1) Completion of pre/post questionnaires on Motivational interviewing, Empathy, and Burnout
2) Completion of face-to-face or online workshops
3) Complete a 30 minute Motivational Interviewing audio recording during the last training session

Compensation:
1) Receive high quality level I Motivational Interviewing training
2) Receive one session of individual feedback and coaching from an experienced Motivational Interviewing coach.
3) Receive certificate of attendance with contact hours

Prior to the training, each registered participant will receive a *Consent to Participate* form to review, sign, and return.

Participants will be randomly placed into either face-to-face workshop or online workshop.

Face-To-Face Training:
- Two days
- Location to be determined
- Schedule
    - June 8th and 9th 8:30am to 4:30pm

Online Training:
- Six sessions
- Location determined by participant
- Each individual must have a computer and excellent internet connection
- Schedule:
    - Session 1: April 3rd 1-4pm (this is a 3 hour session)
    - Session 2: April 5th 1-3pm
    - Session 3: April 7th 1-3pm

    - Session 4: April 17th 1-3pm
    - Session 5: April 19th 1-3pm
    - Session 6: April 21st 1-4pm (this is a 3 hour session)

For more information or questions please contact any of the following:
- Kristin Erickson, *PartnerSHIP 4 Health* at KErickso@co.ottertail.mn.us
- Principal Investigator Dr. Mary Larson at mary.larson2@ndsu.edu
- Co-Investigator Amanda Fairweather at amanda.fairweather@ndsu.edu

To register please click on the link: https://ndstate.co1.qualtrics.com/SE/?SID=SV_7UGEj55tL0BoK8d

APPENDIX C. MITI CODING FORM

Practitioner:
Target
Behavior:
Session #

Start time & sentence:
End time & sentence:

Global Ratings

Technical Components					
Cultivating Change Talk	1	2	3	4	5
Softening Sustain Talk	1	2	3	4	5
Relational Components					
Partnership	1	2	3	4	5
Empathy 4	1	2	3	4	5

Behavioral Counts

	Previous	**Current**
GIVING INFORMATION (GI)		
PERSUADE (P)		
PERSUADE WITH PERMISSION		
QUESTION (Q)		
SIMPLE REFLECTION (SR)		
COMPLEX REFLECTION (CR)		
AFFIRM (AF)		
SEEKING COLLABORATION (SEEK)		
EMPHASIZING AUTONOMY (EMPHASIZE)		
CONFRONT		

Specific Feedback:

Coaching Points:

Below are suggested MITI basic competence and proficiency thresholds for clinicians. Please note that these are based upon *expert opinion*, and currently lack normative or other validity data to support them. Until those data become available, these thresholds should be used in conjunction with other data to arrive at an assessment of clinician basic competence and proficiency in using MI.

MITI thresholds for competency	FAIR	GOOD	Previous Score	**YOUR SCORE**
RELATIONAL	3.5	4		
TECHNICAL	3	4		
% CR	40%	50%		
R:Q	1:1	2:1		
TOTAL MIA				
TOTAL MINA				

Thank you for the opportunity to continue developing our MI skills. If you have any questions, please let me know how I can assist.

Scott Nyegaard, CEO

Legacy Group, LLC

www.legacygroupmn.com

scottessin71@gmail.com

(218) 556-0984

APPENDIX D. IRB APPROVAL FORM

NDSU NORTH DAKOTA STATE UNIVERSITY

December 13, 2016

Dr. Mary Larson
Department of Health, Nutrition & Exercise Sciences

IRB Approval of Protocol #HE17103, "Comparison of face-to-face and synchronous web-based training of Motivational Interviewing for health and human service professionals: Does it matter?"
Co-investigator(s) and research team: Amanda Fairweather, Shannon David, Kristin Erickson

Approval period: 12/13/2016 to 12/12/2017
Continuing Review Report Due: 11/1/2017

Research site(s): various   Funding Agency: n/a
Review Type: Expedited category # 6, 7
IRB approval is based on the revised protocol materials (received 12/8/2016).

Additional approval from the IRB is required:
o Prior to implementation of any changes to the protocol (Protocol Amendment Request Form).
o For continuation of the project beyond the approval period (Continuing Review/Completion Report Form). A reminder is typically sent approximately 4 weeks prior to the expiration date; timely submission of the report the responsibility of the PI. To avoid a lapse in approval, suspension of recruitment, and/or data collection, a report must be received, and the protocol reviewed and approved prior to the expiration date.

Other institutional approvals:
• Research projects may be subject to further review and approval/disapproval.

A report is required for:
o Any research-related injuries, adverse events, or other unanticipated problems involving risks to participants or others within 72 hours of known occurrence (Report of Unanticipated Problem or Serious Adverse Event Form).
o Any significant new findings that may affect risks to participants.
o Closure of the project (Continuing Review/Completion Report Form).

Research records are subject to random or directed audits at any time to verify compliance with human subjects protection regulations and NDSU policies.

Thank you for cooperating with NDSU IRB procedures, and best wishes for a successful study.

Sincerely,

Kristy Shirley

Kristy Shirley, CIP, Research Compliance Administrator

For more information regarding IRB Office submissions and guidelines, please consult www.ndsu.edu/irb. This Institution has an approved FederalWide Assurance with the Department of Health and Human Services: FWA00002439.

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