



*Expedited Article*

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## **Motivational Interviewing Use by Personal Trainers to Promote Behavioral Change**

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### **ABSTRACT**

*Topics in Exercise Science and Kinesiology Volume 2: Issue 1, Article 5, 2021.* This study evaluated one method of behavioral change to promote a healthier way of life. Designed to provide basic motivational interviewing (MI) knowledge and skills to certified personal fitness trainers, the study looked to improve coaching skills to aid in client's ability to adapt to healthier behaviors. As outlined in a study by Kelley et al., (2016), MI is used as a client-centered approach that includes several core principles to express empathy, support the client's self-efficacy, roll with resistance, and develop discrepancy.

**KEY WORDS:** Physical activity, coaching, health, wellness, personal training

### **INTRODUCTION**

Obesity remains on the rise in the United States of America. Many uncontrollable factors play a role in obesity including race, socioeconomic status (SES), and genetics. One controllable factor is physical inactivity.<sup>12</sup> Due to the need for more physical activity as a way of being healthier, individuals are looking to personal trainers for guidance on exercise, nutrition, and a better quality of life.<sup>4</sup> MI is a client-focused way of promoting behavioral change.<sup>5</sup> The method of MI has been used in a wide range of behavioral change studies and proven effective through hundreds of systematic studies.<sup>9</sup> MI may be used by personal trainers as a communication tool in which the personal trainer is a coach who helps clients work through ambivalence toward behaviors and the need for change.<sup>9</sup> As MI has increased in use for behavioral change, more organizations have begun to offer certifications, memberships, and national board licensing validating the importance of this skill. Among them, the National Exercise Training Association (NETA) has a Wellness Coach Certification Specialty while American Council on Exercise (ACE) offers a Health Coach certification. Both NETA and ACE include MI training as part of these certifications. Internationally, the Motivational Interviewing Network of Trainers (MINT) began in 1997, and now represents 35 countries in more than 20 different languages that include MI.<sup>8</sup>

In the area of personal training, MI can be a valuable skill in helping a client change unhealthy behaviors long term.

## METHODS

In the proposed exploratory quantitative intervention, NETA certified personal trainers in Minnesota and Wisconsin were contacted as potential participants. Response to participant criteria further narrowed the participant pool. Personal trainers who qualified ( $n= 15$ ) participated in a pretest and posttest to check knowledge and skills of MI (Table 2). Each question used a 10-point Likert scale to check their understanding of MI based on 0-10, with 0 representing no knowledge at all and 10 representing very knowledgeable. To analyze this collected data, the Chi-squared test was utilized (Table 5 & Table 6). Through the course of three months, personal trainers saw attrition in clients. Due to this attrition, pretest- posttest numbers vary ( $n= 8$ ) (Table 7). Participating personal trainers were provided the International Physical Activity Questionnaire (IPAQ) short form (Table 1) for both the pretest and posttest to assess and complete with their client. The IPAQ assesses physical activity (PA) level prior to personal trainers implementing the basic skills of MI through conversations to create self-efficacy, intrinsic motivation, and autonomy with the client.<sup>2</sup> The IPAQ includes a three-category score ranking, low physical activity (1), moderate physical activity (2), and high physical activity (3). This ranking is based on a psychometric system that uses total physical activity time (e.g., 30 minutes per day on five days a week or the metabolic equivalent of a task) to categorize participants.<sup>2</sup> Personal trainers collected self-reported data for physical activity (PA) and Body Mass Index (BMI) (minimum BMI of 28 pretest). The data changes referenced for BMI were aimed to present another measure of change based on pretest and posttest. In completing this measure, the Wilcoxon  $t$ -test was utilized to show the statistical change (Table 6). Due to the limiting number of participants, it is recommended that replication of this study be completed using a longitudinal approach with a larger group of participants that can show significance in change.

## POINTS OF APPLICATION

**International Physical Activity Questionnaire (IPAQ):** *The IPAQ short survey supported the study with a baseline to check against MI with clients.*

The study utilized the International Physical Activity Questionnaire (IPAQ) for both the pretest and posttest to assess the client's physical activity level prior to personal trainers implementing the basic skills of MI through conversations to create self-efficacy, intrinsic motivation, and autonomy with the client. The categorical rankings of the IPAQ are low, moderate, and high physical activity. Applying these categories, the Wilcoxon test was used for both IPAQ and BMI. The results from this showed the median of .5000 and there was no significance in the results ( $p = 0.1250$ ) 95% CI with a mean difference of 1.75 to 2.66. The IPAQ comprises a set of 4 questionnaires. Long (5 activity domains asked independently)

and short (4 generic items) versions for use by either telephone or self-administered methods are available (Table 1).<sup>2</sup> The purpose of the questionnaires is to provide common instruments that can be used to obtain internationally comparable data on health-related physical activity.<sup>2</sup> Use of the IPAQ instruments for monitoring and research purposes is encouraged. It is recommended that no changes be made to the order or wording of the questions as this will affect the psychometric properties of the instruments. There were positive results observed from the participants' self-assessment in their ability to use the knowledge and in BMI changes based on the IPAQ short assessment. This study was limiting its potential due to the short- term length and the use of self-reporting. This resulted in shortcomings in significance as well as the ability to see change that could potentially be seen in a longitudinal study.

**Table 1.** International Physical Activity Questionnaire (IPAQ)

<p><i>Purpose Statements and Instructions:</i> We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives. The questions will ask you about the time you spent being physically active in the <b>last 7 days</b>. Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.</p>
<p>Q1: During the <b>last 7 days</b>, on how many days did you do <b>vigorous</b> physical activities like heavy lifting, digging, aerobics, or fast bicycling? _____ <b>days per week</b>                  € No vigorous physical activities. <i>Skip to question 3</i></p>
<p>Q2: How much time did you usually spend doing <b>vigorous</b> physical activities on one of those days?                  _____ <b>hours per day</b> _____ <b>minutes per day</b>                  € Don't know/Not sure</p>
<p>Q3: During the <b>last 7 days</b>, on how many days did you do <b>moderate</b> physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.                  _____ <b>days per week</b>                  € No moderate physical activities. <i>Skip to question 5</i></p>
<p>Q4: How much time did you usually spend doing <b>moderate</b> physical activities on one of those days?                  _____ <b>hours per day</b> _____ <b>minutes per day</b>                  € Don't know/Not sure</p>
<p>Q5: During the <b>last 7 days</b>, on how many days did you <b>walk</b> for at least 10 minutes at a time?                  _____ <b>days per week</b>                  € No walking. <i>Skip to question 7</i></p>
<p>Q6: How much time did you usually spend <b>walking</b> on one of those days?                  _____ <b>hours per day</b> _____ <b>minutes per day</b>                  € Don't know/Not sure</p>
<p>Q7: During the <b>last 7 days</b>, how much time did you spend <b>sitting</b> on a <b>weekday</b>?                  _____ <b>hours per day</b> _____ <b>minutes per day</b>                  € Don't know/Not sure</p>

IPAQ Scoring: Categorical Score Three levels (categories) of physical activity are proposed:

**Category 1: Low** This is the lowest level of physical activity. Those individuals who do not meet criteria for categories 2 or 3 are considered low/inactive.

**Category 2: Moderate** Any one of the following 3 criteria:

- 3 or more days of vigorous activity of at least 20 minutes per day OR
- 5 or more days of moderate-intensity activity or walking of at least 30 minutes per day OR
- 5 or more days of any combination of walking, moderate-intensity or vigorous intensity activities achieving a minimum of at least 600 MET-min/week.

**Category 3: High** Any one of the following 2 criteria:

- Vigorous-intensity activity on at least 3 days and accumulating at least 1500 MET-minutes/ week OR
- 7 or more days of any combination of walking, moderate-intensity or vigorous intensity activities achieving a minimum of at least 3000 MET-minutes/week

**Vigorous** physical activities refer to activities that take hard physical effort and make you breathe much harder than normal.

**Moderate** activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal.

**Walking** this includes at work and at home, walking to travel from place to place, and any other walking that you have done solely for recreation, sport, exercise, or leisure.

**Sitting** this includes time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

**Check for Understanding of Motivational Interviewing:** *Participants were asked self-assessing questions based on knowledge of MI and confidence in skill to apply.*

The potential participants contacted included NCCA accredited certified personal trainers throughout Minnesota and Wisconsin. Email invitations were sent to an estimated 200 currently active certified personal trainers, with questions included to assess participation (Table 4). From this list, the goal was to retain twenty currently certified personal trainers for the study in Minnesota and Wisconsin who would be interested in furthering their knowledge and skills of MI. Those who had wellness coaching certifications or those who had expired personal training certifications were excluded. To be considered for inclusion, a trainer had to have at least one client with a BMI of 28 or higher who currently had training sessions with him/her at least one time per week. The study began with a sample of ( $n = 23$ ) participants. At the time of the data pretest, the participant total dropped by eight personal trainers, leaving the data of fifteen personal training clients to show the current state prior to implementation. The personal trainers completed a self- assessment to check for change pretest and posttest. Each question used a 10-

point Likert scale to check their understanding of MI based on a 0-10, with 0 representing no knowledge at all and 10 representing very knowledgeable. The question asked for self-assessment on skills and confidence also used the Likert scale, where 0 represented no confidence in skill and 10 representing very skilled. To complete an analysis of this measure there was a Chi-squared test utilized. One of the major limitations within the project implementation was the loss of participants. This could have been due to client attrition or poor follow through by personal trainers; perhaps this is another area for future research consideration that could be addressed.

**Table 2.** Check for understanding of MI.

MI Questions Asked to Personal Trainer	Results: Likert Scale 0 (No Knowledge) – (Very Knowledgeable) 10
How knowledgeable are you with motivational interviewing	Pretest mean – (n=2.66) Posttest mean – (n=7.37)
How confident are you in applying basic motivational interviewing techniques	Pretest mean – (n=4.53) Posttest mean – (n=7.5)

**Online Motivational Interviewing Module from National Exercise Training Association (NETA):** *This MI module had several sections that both added information to improve the understanding of MI and further their skill to implement with clients.*

**Table 3.** Motivational Interviewing for the Exercise Professional, Data.

Motivational Interviewing for the Exercise Professional Online Module Data from July 1 <sup>st</sup> , 2018 – March 1 <sup>st</sup> , 2021 Data includes, (but not limited) participating personal trainers in this study	
<i>Participants</i> n= 64	<i>Passing score</i> = 70
<i>Overall average score</i> = 83.2	<i>Standard Deviation</i> = 8.9

Exercise professionals utilizing MI may facilitate increased adoption and adherence to regular physical activity resulting in better health and fitness outcomes among their clientele. NETA’s online module (i.e., e-learning course) titled, *Motivational Interviewing for the Exercise Professional*, is administered via the Articulate Online learning management system. It introduces exercise professionals (e.g., personal trainers) to this coaching and communication style. The course provides an overview of the MI framework including the core principles, key processes, and interviewing skills. The module also highlights several research studies investigating the effect of MI to promote physical activity among various populations, thereby providing evidence-based support for the use of MI. The module concludes with a 20 question multiple-choice quiz to assess the user's understanding of key concepts and information. A minimum score of 70% was required to complete the course. At the time of this study, the average score for all personal trainers who were elected to take was 61%. Each participant (n = 11) did complete the online MI

module, although one participant had to retake the test, passing on a second try. There was no specific data used in this study except the participant passing or failing. From July 1<sup>st</sup>, 2018 – March 1<sup>st</sup>, 2021  $n= 64$  fitness professionals have completed the e-learning course. This number includes the personal trainers who participated in this study. Of the  $n=64$  participants in the e-learning course from NETA, the average score has been 83.2%. It is recommended that individuals seek MI programs to further their knowledge and applicable skills of motivational interviewing techniques.

**Table 4.** Qualification questions.

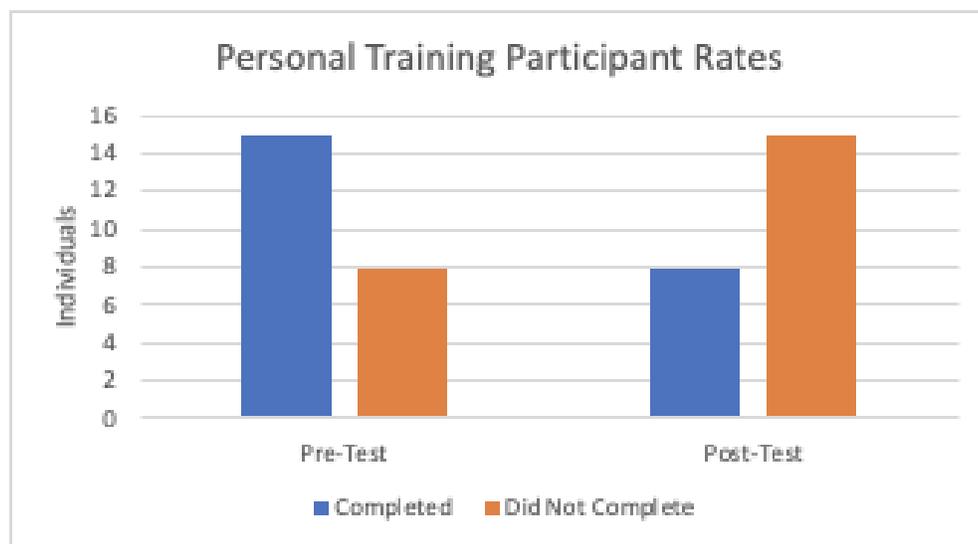
Do you currently have an active personal training certification
Do you have any formal training or certifications in Motivational Interviewing

**Table 5.** Question one of knowledge self-assessment.

Chi-square test	Knowledge Self-Assessment
Chi-square, df	13.38, 1
P value	0.0003
Statistically significant	( $P < 0.05$ )? Yes

**Table 6.** Question two skill self-assessment.

Chi-square test	Skill Self-Assessment
Chi-square, df	17.00, 1
P value	<0.0001
Statistically significant	( $P < 0.05$ )? Yes



**Figure 1.** Personal training participants.

**Table 7.** Pretest and posttest analysis of IPAQ scores and BMI.

	<b>Pretest</b>	<b>Posttest</b>
Median IPAQ Score (IQR)	1	2
Mean BMI (sd)	31.90 (sd= 6.81)	28.75 (sd= 4.26)

**Table 8.** Video training tools for personal trainers.

Video 1: Motivational Interviewing: M.I. A Learning Process Clip (2013). Retrieved from <a href="https://vimeo.com/56949751">https://vimeo.com/56949751</a> .
Video 2: Matulich, B. (Director). (2013). An Introduction to Motivational Interviewing. Retrieved from <a href="https://www.youtube.com/watch?v=s3MCJZ7OGRk">https://www.youtube.com/watch?v=s3MCJZ7OGRk</a>

**Table 9.** Motivational Interviewing for the Exercise Professional Table of Contents.

<b>Slide Number</b>	<b>Slide Title</b>
1	Home Page/Title Slide
2	Viewing this Online Module
3	Welcome
4	Course Objectives
5	Section One Overview
6	Introduction to Motivational Interviewing
7	What is Ambivalence to Change?
8	Motivational Interviewing is NOT...
9	Beware of the Righting Reflex
10	The Spirit of Motivational Interviewing
11	Core Principles of Motivational Interviewing
12	Key Processes of Motivational Interviewing
13	Strategies to Evoke Change Talk
14	What Does Change Talk Sound Like?
15	Additional Strategies for Change Talk
16	Section Two Overview: Core Interviewing Skills of MI - OARS
17	OARS: Open-Ended Questions
18	OARS: Affirmations
19	OARS: Reflective Listening
20	OARS: Reflective Listening (cont')
21	OARS: Summarizing
22	OARS: Summarizing (cont')
23	OARS: Summarizing (cont')
24	Rating or Scaling Questions
25	Information Exchange: Elicit-Provide-Elicit
26	Section Three Overview: MI Research
27	Brodie & Inoue (2005). <i>MI to promote physical activity for people with chronic heart failure</i>
28	Bennett et al. (2007). <i>MI to increase physical activity in long-term cancer survivors</i>
29	Hardcastle et al. (2012). <i>The effectiveness of a MI primary-care based intervention....</i>
30	Bean et al. (2015). <i>MI targeting diet and physical activity improves adherence...</i>

31	Motivational Interviewing: Additional Research
32	Eight Strategies to Learning MI – (Miller & Moyers, 2006)
33	Recommending Reading on MI
34	References
35	Final Quiz
36-56	Multiple-Choice Questions
57	Final Results

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## TOPICS IN EXERCISE SCIENCE AND KINESIOLOGY

### **Motivational Interviewing Use by Personal Trainers to Promote Behavioral Change**

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Obesity has been labeled as a chronic disease and is of high concern in the USA. Even with heightened awareness approximately 34% of adults are obese and 15-20% of children and adolescents are considered obese.<sup>7</sup> There are many factors that can play a role in obesity; factors include sociocultural, biological, and psychological.<sup>1</sup> Due to the multifactorial role in obesity, the solution should include changing behaviors for long term sustainability. This study evaluated one method of behavioral change to promote a healthier way of life. Designed to provide basic motivational interviewing (MI) knowledge and skills to certified personal fitness trainers, the study looked to improve coaching skills to aid in client's ability to adapt healthier behaviors. As outlined in a study by Kelley, et al., (2016)<sup>1</sup> MI is used as a client centered approach that includes several core principles to express empathy, support client's self-efficacy, roll with resistance, and develop discrepancy.

People seek help from personal trainers to change unhealthy behaviors or to begin healthy behaviors. Personal trainers are often hired to help with weight-loss in addition to creation of healthy habits such as physical activity, exercise and basic nutrition. Approximately 50% of people who begin to exercise drop the healthy habit in the first three to six months.<sup>3</sup> There are many techniques used to aid in behavioral change; MI is a form of having effective conversations to encourage change based on an individual's own values and interest.<sup>6</sup>

The use of MI was originally developed by William R. Miller and Stephen Rollnick to motivate behavioral change and promote health in clients.<sup>10</sup> MI aims to increase intrinsic motivation by engaging patients with reflective listening, focusing clients through discussion, evoking clients' motivations for change, and planning collaborative actions to reduce health-risk behaviors.<sup>10</sup> MI has been incorporated into professional fields and continues to grow as a client centered style to elicit behavioral change and remove ambivalence.<sup>11</sup> MI is not a technique; it is a communication tool to build interpersonal relationships and create autonomy in clients.

This study had two aims. 1. Examine knowledge of MI for personal trainers and provide resources to gain basic skills to apply with clients. 2. Examine the physical activity changes for the clients of the personal trainers using the International Physical Activity Questionnaire (IPAQ) short form. In the proposed exploratory intervention, the potential participants from the National Exercise Training Association (NETA) were required to have current personal training certification. The personal trainers for this study were located in Minnesota and Wisconsin and had at least one training session per week with a client who had a minimum BMI of 28.

To educate the personal trainers on the basic skills in MI, two videos from Motivational Interviewing Network Trainers (MINT) were provided (Table 9). Personal trainers ( $n=15$ ) also received access to a e-learning course titled, *Motivational Interviewing for the Exercise Professional* from NETA that provides an overview of the MI framework including core principles, key processes, and interviewing skills (Table 10). NETA's MI course is available online to certified fitness professionals to receive continuing education credits (CEC). Quantitative self-reporting data was

collected both pretest and posttest for personal trainers. The results showed a significant change from pretest – posttest in knowledge of MI and the skill set to apply MI (Table 2).

Through this three month preliminary study, personal trainers showed changes in knowledge and skills pretest – posttest (Table 5). Clients of the personal trainers showed a slight decrease in BMI and their physical activity level improved based on the IPAQ assessment (Table 8). The limiting factors for this study include the low number of participants at posttest and the short study duration. A longitudinal study and data collection can provide further insight into the use of MI by personal trainers and the positive effect it can have on the client’s ability to have lasting behavioral change.

