

# Research on Social Work Practice

<http://rsw.sagepub.com/>

---

## **Motivational Interviewing to Affect Behavioral Change in Older Adults**

Sherry M. Cummings, R. Lyle Cooper and Kim McClure Cassie

*Research on Social Work Practice* 2009 19: 195 originally published online 25 June 2008

DOI: 10.1177/1049731508320216

The online version of this article can be found at:

<http://rsw.sagepub.com/content/19/2/195>

---

Published by:



<http://www.sagepublications.com>

**Additional services and information for *Research on Social Work Practice* can be found at:**

**Email Alerts:** <http://rsw.sagepub.com/cgi/alerts>

**Subscriptions:** <http://rsw.sagepub.com/subscriptions>

**Reprints:** <http://www.sagepub.com/journalsReprints.nav>

**Permissions:** <http://www.sagepub.com/journalsPermissions.nav>

**Citations:** <http://rsw.sagepub.com/content/19/2/195.refs.html>

>> [Version of Record](#) - Feb 9, 2009

[OnlineFirst Version of Record](#) - Jun 25, 2008

[What is This?](#)

# Motivational Interviewing to Affect Behavioral Change in Older Adults

Sherry M. Cummings

R. Lyle Cooper

Kim McClure Cassie

*University of Tennessee*

This article reviews and assesses the existing research literature on the efficacy of motivational interviewing (MI) to promote lifestyle changes and improve functioning among older adults confronting serious health challenges. A comprehensive literature review was conducted of intervention studies that tested the use of MI to achieve behavioral change among older adults with acute and chronic illnesses. Although limited in number, the studies revealed a significant improvement in physical activity, diet, cholesterol, blood pressure and glycemic control, and increased smoking cessation following MI. MI and its derivatives can be useful in dealing with a range of health issues faced by older adults. Further research to extend findings and address methodological issues is recommended. The integration of MI into social work courses focused on practice with older adults should be considered.

**Keywords:** *motivational interviewing; older adults; evidence based interventions*

The inexorable growth of the older population is now common knowledge. At present, there are 37 million persons 65 years of age and older in the United States. By 2030, the number of older adults will more than double to about 80 million (U.S. Census Bureau, 2004). Later life is often accompanied by an increase in acute illnesses and chronic medical conditions, which can result in physical and emotional pain for older individuals and escalating medical costs for society. Medical professionals treat the physical aspects of illness, and the role of the social worker is to address the behavioral aspects and psychosocial dimensions of disease management. Many acute and chronic illnesses experienced in later life can be prevented or managed, at least in part, through lifestyle alterations (Beers, 2004). However, modifying one's behavior often presents overwhelming challenges that many individuals cannot successfully confront on their own. Social workers can play a vital role in promoting health and preventing disability among older adults through the application of evidence-based treatments that target behavioral change and enable clients to effectively deal with health-related conditions. The majority of evidence-based interventions used to treat medical conditions among older adults are pharmaceutical in nature. However, as the number of older adults continues to grow, it is essential that social work practitioners have knowledge of effective psychosocial

strategies that address the behavioral and psychological aspects of disease management.

Motivational interviewing (MI) is an intervention that employs a client-centered counseling style for achieving behavior change by facilitating exploration and resolution of ambivalence (Miller & Rollnick, 2002). Although a substantial body of literature exists affirming the efficacy of this approach, very little of the literature focuses on older adults. The purpose of this article is to review and assess the existing research literature on the efficacy of MI for promoting lifestyle changes and improved functioning among older adults confronting serious health challenges (Table 1).

## Major Illness Among Older Adults and Effect of Behavioral Changes

As individuals age, their risk for developing disease and disability substantially increases. Disease and impairment can significantly restrict independence, increase the need for support, and lead to death. The leading causes of death among persons 65 years of age

---

**Authors' Note:** Correspondence may be addressed to Sherry M. Cummings, University of Tennessee, College of Social Work, 193E Polk Ave., Nashville, TN 37210; e-mail: [scumming@utk.edu](mailto:scumming@utk.edu).

**Table 1**  
**Description of Studies Examined**

Author(s)	Population	Targeted Behavior	N	Treatment	Frequency/Duration	Treatment Group Outcome
Bennett et al. (2007)	Long-term cancer survivors group mean age, 56 years (standard deviation [SD] = 9)	Physical activity	56	Face to face MI session with master's level physical activity specialist. Follow-up motivational interviewing (MI) by phone.	One face-to-face/24 minutes; three phone calls (2 weeks, 2 months, 4.5 months)/10 minutes	Increased physical activity
Bennett et al. (2005)	Community-dwelling adults aged 60+ years in Oregon with chronic diseases	General health	111	Face-to-face MI with bachelor's level registered nurse, and follow up phone calls	One face-to-face/1 hour; monthly phone calls (over 6–9 months)/3–45 minutes	Less health distress and health interference
Borrelli et al. (2005)	Smokers receiving home health care in Rhode Island. Mean age, 57 years (SD = 14)	Smoking cessation	98	Face-to-face MI and follow-up MI phone calls	Three face-to-face/20–30 minutes; phone calls (number not specified)/5 minutes	Twice as likely to report continued abstinence.
Brodie & Inoue (2005)	Adults aged 65+ years with chronic heart failure in United Kingdom	Physical activity	92	Two treatment groups. One was advised to exercise and received MI. The other only received MI.	Eight sessions for both groups/1 hour	Increased walking distances
Gordon et al. (2003)	Young adults (21–64 years old) compared with older adults (65+ years old) in Pennsylvania	Alcohol consumption	301	MI with bachelor level interventionist at primary care physician's office	One initial session/45–60 minutes; two additional contacts/10–15 minutes; other details lacking	Trend toward decreased alcohol consumption, but no statistically significant differences
Hokanson et al. (2006)	Adults with type 2 diabetes; group mean age, 54 years (SD = 9)	Smoking cessation	114	Face-to-face MI, follow-up phone sessions, and nicotine replacement therapy	One face-to-face/20–30 minutes; three to six phone calls/no duration details	Short-term decrease in smoking in past 7 days and daily smoking patterns
Hyman et al. (2007)	African-American smokers in United Kingdom with hypertension	Smoking cessation, improved diet and exercise	230	Face-to-face MI counseling and follow-up MI phone calls	Three face-to-face every 6 months/duration not specified; seven follow-up phone calls/15 minutes	Decreased sodium intake, increased smoking cessation
Jackson et al. (2007)	Adults with type 2 diabetes, aged 34–75 years, mean age of treatment group, 58 years (SD = 11)	Physical activity	40	Face-to face MI with dietician	One face-to-face session/20–30 minutes	Increased physical activity

(continued)

**Table 1 (continued)**

Author(s)	Population	Targeted Behavior	N	Treatment	Frequency/Duration	Treatment Group Outcome
Kolt et al. (2007)	Adults 65+ years old in New Zealand	Physical activity	186	MI phone calls with exercise counselor	Eight phone calls over 3 months/10–16.5 minutes	Increased physical activity and functioning
Kreman et al. (2006)	Rural Caucasians with high cholesterol. Mean age, 54 years ( <i>SD</i> = 6)	Improved diet and exercise	24	Phone-based MI	One phone session/30–45 minutes	Decreased total cholesterol and high-density lipoproteins
McHugh et al. (2001)	Adults in United Kingdom awaiting coronary artery bypass graft surgery. Mean age, 61 years; range, 35–77 years old	Cardiovascular risk factors	120	Health education and MI from nurse in home	Monthly (other details not available)	Improved smoking cessation, weight, physical activity, total cholesterol, and blood pressure
Sims et al. (1998)	Adults 65+ years old in United Kingdom	Physical activity	20	Initial MI session and follow-up phone calls with primary care nurse	Initial MI session details lacking; follow up calls occurred 2 and 6 weeks after initial session	No statistically significant difference
Smith et al. (1997)	Females over 50 years old with type 2 diabetes	Weight loss	21	MI with psychologist	Three sessions/duration not specified	Improved glucose control, increased program adherence, increased exercise frequency
Wakefield et al. (2004)	Adults with cancer in Australia. Mean age, 53 years ( <i>SD</i> = 14)	Smoking cessation	137	MI with counselor, nicotine replacement therapy, counseled smoking family members to quit	11 sessions/18 minutes	More likely to use nicotine replacement therapy and written materials, no difference in cessation rates
West et al. 2007	Overweight females with diabetes. Mean age, 53 years ( <i>SD</i> = 10)	Weight loss, glycemic control	217	Independent MI with licensed clinical psychologist	Quarterly sessions/45 minutes	Short-term weight loss, improved glycemic control, less effective with African Americans

and older are heart disease, cancer, and stroke, which account for 62% of all fatalities for this population (Federal Interagency Forum on Aging-Related Statistics, 2006). Other chronic conditions among older adults that cause significant levels of impairment and commonly cause death include diabetes and chronic obstructive pulmonary disease (COPD; American Diabetes Association, 2007; American Lung Association, 2006). Research clearly demonstrates the relationship between personal health habits and disease (Beers, 2004). Specific lifestyle factors, such as smoking, diet, exercise, and alcohol consumption, have been consistently associated with disease and disability among older adults.

Smoking is the most common cause of COPD and lung cancers and is a leading risk factor for mouth, neck, and head cancers and for coronary artery disease and stroke (National Cancer Institute, 2007). Smoking cessation is considered a critical treatment for COPD. Experts also suggest that smoking cessation is one of the most important behaviors in which a person can engage to prevent heart attack and stroke (Beers, 2004). Likewise, healthy eating habits are necessary for older individuals to prevent or control diseases/conditions such as high blood pressure, diabetes, heart disease, stroke osteoporosis, and certain cancers (Beers, 2004). Poor diet is related to obesity, which carries an increased risk of cardiovascular and pulmonary conditions and can exacerbate other conditions including diabetes, arthritis, and hypertension (Hooyman & Kiyak, 2008). Last, those who consume alcoholic beverages in greater quantities than suggested for older adults (e.g., more than one or two drinks/day) suffer from increased rates of head, neck, and liver cancer; cardiovascular disease; stroke; falls; and fractures (Fingerhood, 2000; National Institute on Alcohol Abuse and Alcoholism, 2005). In spite of the above evidence, many individuals are unable to surmount the emotional, psychological, and practical challenges related to needed behavioral change and, therefore, suffer severe deleterious consequences of poor health control.

## Motivational Interviewing

MI is a client-centered directive form of counseling focused on the resolution of ambivalence to enable client behavior change. According to MI, all persons considering behavior change experience an internal conflict regarding the pros and cons of change. This internal conflict, or ambivalence, must be resolved for a client to make a decision to change his or her behavior. It is the role of the MI therapist to help the client overcome his or her negative perception of change in favor of a positive recognition of the benefits of change. Toward this end of

ambivalence resolution, several practices are employed including developing discrepancy (between stated life goals and current behavior), supporting self-efficacy, expression of empathy, and avoiding argumentation. These strategies are all employed to enable the practitioner to engage the client in change talk. Change talk is the client's verbal expression of the positive effects of engaging in behavioral change. Foundational to all of these skills is working within the "spirit" of MI (Miller & Rollnick, 2002).

The spirit of MI refers to the clinician's way of being with clients. This emphasis sprung originally from Roger's (1961) ideas regarding the importance of relationship in the counseling interaction. Miller and Rollnick (2002) have defined this spirit as a focus on the practitioner's collaboration with clients in an effort to evoke both reasons to change and specific methods of engaging in change, rather than imposing methods on the client. In addition, the spirit of MI focuses on recognizing and honoring client autonomy. Collaboration is expressed by developing a partner-like relationship with clients. The MI therapist seeks to draw out the client's intrinsic motivation to and capacity for change. Of course, this also indicates the therapist's strong belief the clients are motivated and capable of change. Finally, the spirit of MI dictates a belief in client autonomy and further allocation to the client of responsibility for change.

To examine the effect of MI on lifestyle changes and functioning among older adults, a comprehensive literature review was conducted in June 2007. PubMed, PsychINFO, Social Science Abstracts, Social Service Abstracts, and Sociological Abstracts were the databases searched. Search terms included MI or motivational enhancement therapy and elder\*, old\* adult\*, aged, heart disease, chronic illness, diabetes, chronic diseases, smoking, diet, exercise, alcohol, hyperlipidemia, or hypertension. Only articles meeting the following criteria were included in this review: the average age of the sample must exceed 50 years, and the research design must be a randomized controlled study. A total of 15 studies investigating the effect of MI among older adults were identified and included in this review. Studies addressed diet, exercise, and weight control; chronic disease management; smoking; and alcohol consumption.

## Diet, Exercise, and Weight Control

Debilitating conditions among older adults such as diabetes, heart disease, and some forms of cancer are often related to lifestyle choices and behaviors that are associated with inactivity, poor nutrition, and obesity. As such, it is not surprising that the preponderance of research related to the use of MI with older adults has

been focused on the areas of diet, exercise, and weight control.

Three studies examined the use of MI to assist older adults suffering from adult-onset diabetes with weight and glycemic control issues. The most extensive study identified on this topic was conducted by West, DiLillo, Bursac, Gore, and Greened (2007). Researchers randomly assigned 217 overweight women with type 2 diabetes mellitus who were being treated with oral medications into either a treatment group or an attention-only control group. Both groups participated in a weight management program. Participants were recruited from 2000 to 2002 in Alabama. The average age of participants was 53 years (standard deviation [*SD*] = 10). The treatment group also received individual MI sessions lasting about 45 minutes with a licensed clinical psychologist before the first weight management program and then quarterly at 3, 6, 9, and 12 months. The clinical psychologist received weekly supervision of their MI skills, and audiotapes of intervention sessions were randomly reviewed. The attention-only control group met with health educators for the same amount of time to discuss female health issues. Findings revealed that individuals in both groups lost weight and experienced improved glycemic control ( $p < .02$ ), but outcomes among individuals receiving MI were significantly better. Both groups regained weight. The weight regain began to occur at 6 months in the control group but was delayed until 12 months in the treatment group. Of note, in this study, MI appeared to be less effective among African Americans ( $p < .001$ ). Overall, African Americans lost less weight than Caucasians, regardless of the group to which they were assigned.

Two smaller studies examining the use of MI among older adults with adult-onset diabetes yielded similar results. Jackson, Asimakopoulou, and Scammell (2007) randomly assigned 40 adults with type 2 diabetes mellitus, recruited from an outpatient clinic in the United Kingdom, into a treatment or control group to examine the effect of MI on physical activity. Participants' ages ranged from 34 to 75 years, with an average of 58 years in the intervention group and 62 years in the control group. Individuals in both groups received standard care and information, but individuals in the treatment group also received one face-to-face MI session at an outpatient clinic with a dietician who was trained in MI. Specific details regarding interventionist training were not provided. At 6 weeks, both groups reported increased physical activity. Frequency and duration of physical activity were significantly higher in the treatment group ( $p < .01$ ). Weight loss was not reported.

In a similar study, Smith, Heckemeyer, Kratt, and Mason (1997) examined the effect of MI on adherence with a weight control program among 21 females with

non-insulin-dependent diabetes mellitus. The average age of participants was 62.4 years ( $SD = 7$  years). Participants were randomly assigned into treatment or control group. Both groups participated in a weekly weight control program. Individuals in the treatment group also received three MI sessions with a psychologist experienced in MI. Training specifics were not provided. The treatment group had a statistically significant improvement in glucose control ( $p < .05$ ), and statistically significant differences were found in attendance ( $p < .01$ ), food dairy completion ( $p < .01$ ), and blood glucose monitoring ( $p < .05$ ), with better outcomes found in the treatment group. However, no difference was noted in weight loss between the two groups.

Diet, exercise, and weight control are especially important among individuals with heart disease. Two studies were identified that examined the use of MI among individuals with, or at risk for, heart disease. Brodie and Inoue (2005) studied the effect of MI on physical activity among 92 adults with chronic heart failure. Participants were recruited from patients receiving care at two hospitals in the United Kingdom. Participants ranged in age from 65 to 94 years (average = 79 years). Participants were randomly assigned into one of three groups: group one received standard care from a heart failure specialist nurse (nursing training in MI was not specified), group two was advised to exercise and participate in a MI program, and group three actually received MI from a researcher. In both groups two and three, the MI program consisted of eight 1-hour sessions. After 5 months, all groups significantly increased walking distances ( $p < .001$ ). However, no significant difference in outcomes was found among the three groups.

A smaller study was conducted by Kreman, Yates, Agrawal, Fiantt, Briner, and Shurmer (2006) among 24 Caucasian rural livestock producers in the United States with high cholesterol—a known risk of heart disease. The average age of participants was 54 years and ranged from 39 to 67 years. The effect of a telephone-based MI intervention to encourage participants to improve their diet and exercise was examined. Participants were equally distributed and randomly assigned to either a treatment group receiving MI or an education- and attention-only control group. Both groups received standard educational material from the American Heart Association. A nurse, trained in MI, placed a phone call lasting 30–45 minutes to participants in both groups. Training specifics were not provided. The nurse used MI to motivate and encourage positive behaviors among the treatment group. When speaking with individuals in the control group, the nurse read a scripted review of the written materials and answered participant questions. Three months later, the treatment group had experienced

a statistically significant decrease in their total cholesterol ( $p = .017$ ), whereas the control group did not experience a significant decrease ( $p = .10$ ).

Among 56 long-term cancer survivors, Bennett, Lyons, Winters-Stone, Nail, and Scherer (2007) examined the effect of MI on increased physical activity. Participants ranged in age from 37 to 85, with an average age of 56 in the intervention group and 60 in the control group. Participants were randomly assigned to either a treatment or a control group. The treatment group received an initial face-to-face MI session with a master's-level physical activity specialist lasting about 24 minutes. The interventionist received 14 hours of training on group and individual MI techniques. Follow-up phone calls lasting about 10 minutes were made to individuals in the treatment group at 2 weeks, 2 months, and 4.5 months. The control group received two calls lasting less than 4 minutes reminding participants to come in for measurement. Although the treatment group was initially more inactive than the control group ( $p = .04$ ), at 6 months they were significantly more active than those in the control group ( $p < .01$ ).

Two additional studies were identified that examined the effect of MI on physical activity among participants with no specified diagnosis. Kolt, Schofield, Kerse, Garrett, and Oliver (2007) examined the effect of a telephone-based MI program on physical activity among 186 older adults. Participants were recruited from the primary care offices in New Zealand in 2003–2004. All participants were over the age of 65 years. The average age of the control group was 74.3 years ( $SD = 5.9$ ), and it was 74.1 years ( $SD = 6.2$ ) in the intervention group. Participants were equally divided and randomly assigned into a treatment and control group. The treatment group received eight scripted MI phone calls, lasting 10–16.5 minutes each, with an exercise counselor over 3 months. The specific training of the MI counselor was not discussed. The control group received no intervention. At the conclusion of the intervention, the treatment group reported a significant increase in physical activity ( $p = .007$ ) and a statistically significant higher level of physical functioning ( $p = .04$ ) than the control group.

Sims, Smith, Duffy, and Hilton (1998) also examined the effect of MI on physical activity among 20 older adults recruited from a suburban practice in the United Kingdom. The average age of participants was 72.2 years ( $SD = 4.26$ ). After randomly assigning participants to a treatment or control group, the treatment group received both one MI session with a primary care nurse who had attended a 2-day MI training and two follow-up phone calls 2 and 6 weeks later, whereas individuals in the control group received usual care. Training specifics were not provided. No significant differences were observed between the two groups at the conclusion of the study.

## Chronic Disease Management

Three studies were identified that examined the effect of MI on behaviors associated with the management of chronic diseases. A sample of 230 African-American smokers with hypertension and a high risk of cardiovascular disease from an urban area in the southwestern United States were studied by Hyman, Pavilk, Taylor, Goodrick and Moye (2007) to determine the effect of MI on smoking, diet, and exercise. Participants were recruited from two primary care clinics in 2002–2004. Participants ranged in age from 45 to 64 years, with an average age of about 53 years. Subjects were randomly assigned to one of three groups. The simultaneous-treatment group was encouraged to stop smoking, decrease sodium intake, and increase physical activity altogether. Participants in the sequential treatment group were encouraged to address one problem behavior (smoking, sodium intake, or inactivity) at a time, with focus shifting to a different problem behavior every 6 months. The usual-care control group only received phone calls reminding them of measurement appointments. Both treatment groups received face-to-face counseling every 6 months with a health educator at a health clinic and MI phone calls lasting about 15 minutes at 2, 4, 6, 8, 10, 12, 16, and 20 weeks. Details regarding the training of interventionists are unknown. Researchers concluded that intervention aimed at addressing multiple behavior problems simultaneously was more successful than the sequential introduction of issues or usual care. At 6 months, individuals in the simultaneous treatment group had a greater decrease in sodium than did those in the control group ( $p = .01$ ). At 18 months, smoking cessation was highest among the simultaneous group and approached significance (20% compared with 17% in the sequential group and 10% in the control group;  $p = .08$ ).

McHugh, Lindsay, Hanlon, Hutton, Brown, Morrison, and Wheatley (2001) assessed the effect of MI on smoking, physical activity, weight, cholesterol levels, and blood pressure among 120 persons awaiting coronary artery bypass graft surgery. Participants were recruited from 47 physician's practices in the United Kingdom. The study was conducted in 1997 and 1998. Participant ages ranged from 35 to 77 years, with an average age of 63 in the control group and 61 in the intervention group. Participants were randomly assigned to either a treatment group receiving monthly health education and MI from nurses or a control group receiving usual care. Specific details regarding nurse training in MI were not provided. Significantly better outcomes were observed among the treatment group in the areas of smoking cessation ( $p < .001$ ), weight ( $p = .01$ ), physical activity ( $p < .001$ ), and blood pressure ( $p < .001$ ).

Bennett and colleagues (2005) examined the effect of MI on the health of 111 community-dwelling individuals with chronic diseases, including diabetes, lung disease, heart disease, arthritis, and neuromuscular disease in Oregon. The average age of participants in the intervention group was 71.2 years ( $SD = 7.8$ ), and it was 69.2 years ( $SD = 7.1$ ) in the control group. Participants were randomly assigned to either a control group receiving usual care from their physician or a treatment group receiving MI through a 1-hour face-to-face initial meeting with a bachelor's-level registered nurse and an average of seven phone calls lasting 3–45 minutes each over 6 months. Nurse interventionists received 24 hours of training in MI, which included instruction and role playing. Longer phone calls occurred earlier in the program, and shorter phone calls later. At the conclusion of the study, the intervention group reported significantly less health distress ( $p = .05$ ) and less illness interference ( $p = .04$ ) than the control group.

### Smoking Cessation

Three studies were identified that examined the use of MI on smoking cessation among older adults. Wakefield, Olver, Whitford, and Rosenfeld (2004) examined differences in cessation rates among 137 adults diagnosed with cancer. Participants were recruited from a single Australian hospital in 1999–2000. The average age of participants in the intervention group was 52.6 years ( $SD = 13.8$ ), and it was 51.9 years ( $SD = 11.5$ ) in the control group. Participants were randomly assigned to either a control group receiving standard written information about smoking cessation and referrals to a cessation hotline or a treatment group receiving an average of 11 contacts lasting about 18 minutes each with a counselor trained in MI, along with written materials. Specifics regarding counselor training were not provided. Individuals in the treatment group who smoked 15 cigarettes a day or more were offered nicotine replacement therapy (NRT). Six months postintervention, researchers found that the treatment group was more likely to use NRT ( $p = .04$ ) and the written materials that were provided to them ( $p = .04$ ), but no statistically significant differences in cessation rates were found between the treatment and control groups.

More positive results were reported by Hokanson, Anderson, Hennrikus, Lando, and Kendall (2006) in their evaluation of the effect of MI on smoking cessation among 114 smokers with adult-onset diabetes mellitus. Participants were recruited from a diabetes center in Minneapolis, Minnesota, in 2001–2004. The average age of participants in the treatment group was 54 years ( $SD = 9$ ), and it was 53 years ( $SD = 9$ ) in the control group. Participants

were randomly assigned to either a treatment group or to a usual-care control group. The treatment group received one initial face-to-face session using MI and three to six brief follow-up phone sessions. Interventionists attended 12 hours of training on MI and smoking cessation, and ongoing support was available. If a participant in the treatment group did not express an interest in smoking cessation after two or three follow-up phone calls the counselor stopped calling and instructed them to call as needed. It is unclear whether or not these individuals were included in the follow-up analysis. Those expressing an interest in smoking cessation received more frequent follow-up phone calls. NRT was also offered to interested individuals in the treatment group. The usual-care control group received standard written information and referrals to local smoking cessation programs. Three months postintervention, fewer treatment group participants reported smoking than did those in the usual care group ( $p = .077$ ). Fewer treatment group participants reported smoking daily compared to the usual-care group ( $p = .048$ ). At 6 months, however, no significant differences were noted between the two groups.

Borrelli, Novak, Hecht, Emmons, Papandonatos, and Abrams (2005) reported similar results. Ninety-eight nurses from the Visiting Nurse Association in Rhode Island were randomly assigned to deliver either an MI intervention or standard care to 273 adult smokers receiving home case services from the association. Recruitment and intervention occurred from 1998 to 2003. The average of participants was 57.2 years ( $SD = 14.3$ ). Smokers in both groups received written materials especially designed for older and medically ill smokers. In addition, the treatment group received three in-person home visits lasting 20–30 minutes and follow-up phone calls employing MI from nurses trained in MI. Training involved role playing and was delivered in small groups by a licensed clinical psychologist and a nurse educator. Individuals in the standard-care control group received only one visit lasting 5–10 minutes from the home health nurse, who focused on providing participants with standardized cessation guidelines. The treatment group reported significantly more attempts to stop smoking ( $p < .05$ ) and a significant decrease in the number of cigarettes smoked daily ( $p < .05$ ) when compared with the control group. Participants in the treatment group were twice as likely to report continuous abstinence compared with the control group as well. Unlike the study conducted by Hokanson and colleagues (2006), the effects of this MI-enhanced smoking cessation intervention were more long lasting. Borrelli and colleagues reported that at 2 months, 6 months, and 12 months postintervention, the statistically significant differences remained between the treatment and control group ( $p < .05$ ).



## Alcohol Consumption

Only one study was identified that examined the effect of MI on alcohol consumption among older adults. Gordon and colleagues (2003) examined the effect of brief interventions on hazardous drinking behavior among older adults aged 65 years or more ( $n = 45$ ). Participants were recruited from 12 physicians' waiting rooms in western Pennsylvania from 1995 to 1997. Men who reported drinking 16 or more alcoholic beverages a week, women who reported drinking 12 or more alcoholic beverages a week, and individuals scoring eight or higher on the Alcohol Use Disorders Identification Test were considered hazardous drinkers.

Participants were randomly assigned to one of three groups: MI, brief advice, or usual care. Individuals receiving MI met with a bachelor's-level interventionist at their primary care physician's office for 45–60 minutes, where an interventionist used MI techniques to assist participants in creating goals to decrease alcohol consumption. The interventionist received a technique manual with training, supervision, and feedback. Participants were contacted on two additional occasions to encourage continued progress toward their stated goals. Individuals receiving brief advice also met with an interventionist at their physician's office, where participants were told of the consequences of hazardous drinking behavior and advised to reduce their drinking. The initial session lasted only 10–15 minutes with no follow-up sessions. The usual-care group received standard care from their physician and had no contact with interventionists. Among the older adults, researchers found a trend toward decreased alcohol consumption, but one intervention did not appear to be more affective than the other, and neither intervention was statistically different from the standard care group.

## Summary

MI has been used to address a number of behavior problems associated with lifestyle choices among older adults. In the area of diet, exercise, and weight control, MI has been found to produce significant changes among older adults including short-term weight loss, increased frequency and duration of physical activity, decreased health distress, decreased sodium intake, improved glucose control, decreased blood pressure, and improved adherence to weight control programs. With regard to smoking cessation, all but one study found MI to be effective at increasing smoking cessation rates. Although racial and ethnic diversity was limited, at least one study reported that MI was less effective among African Americans. The studies reviewed produced conflicting results concerning the

effectiveness of MI in helping clients achieve long-term sustained improvements in lifestyle and health behaviors. These variations in findings may be related to differences in the treatment dosage (amount of treatment) applied and the specific model of MI employed.

## Discussion and Applications to Social Work

Although limited in number, MI studies conducted with older adults do highlight the potential of this approach for achieving important behavioral changes in older clients. Given the serious negative effects that problematic behaviors exert on the health and well-being of older adults, such evidence should be seriously considered. These studies suggest that MI techniques are both acceptable to older adults and capable of producing change in a variety of health behaviors in a relatively brief period of time. Further, the studies conducted by Kolt and colleagues (2007) and Kreman et al. (2006) indicate that the effectiveness of MI treatment can be extended to telephone-based approaches. Several of the other studies reviewed above also used telephone contact as part of their intervention approach. Because of the functional impairments experienced by many adults as they age, interventions that can be conducted either partially or completely in the home environment are especially important to note.

The findings of this review indicate that MI and its derivatives can be useful in dealing with a range of issues faced by older adults. Given this, the integration of MI into social work courses focused on practice with older adults should be considered. Aging-related textbooks and course syllabi often discuss the usefulness of cognitive behavioral, problem-solving, reminiscence, and remote therapies with older adults (Hooymann & Kiyak, 2008; Kropf & Tompkins, 2002). Few, however, make mention of MI. One of the most significant features of MI is the brief time period within which documented changes have occurred in clients' lives. Considering that gerontological social workers operate in a variety of setting (e.g., hospitals, medical clinics, senior centers, etc.) that often necessitate brief interventions, equipping students to provide promising brief treatments, such as MI, in fast passed environments is warranted. In addition, making training available for current practitioners working with older clients is also indicated.

Although MI approaches with older adults do hold promise, continued investigation is required. Beyond the need for a greater base of evidence concerning the efficacy of MI conducted with older adults, several of the findings noted raise issues that deserve further attention in future MI research studies. These include discussion of

the half-life and dosing effects of MI, the fidelity of MI interventions, the utility of addressing multiple damaging health behaviors simultaneously, and racial differences in health outcomes. Several of the studies mentioned here indicate that treatment groups receiving MI experienced significant differences in behavior change at early follow-up points but that these changes dissipated over time (short half-life). However, among two of the most comparable studies (Borrelli et al., 2005; Hokanson, et al., 2006) the MI “dose” (amount of treatment) delivered seemed to affect the half-life of the intervention. MI has long been touted for its brevity. However, this review suggests that there may be a minimum dose that is needed to enhance long-term efficacy with older adults. The studies reviewed here do not provide sufficient information to determine what dosage is needed to provide a sufficient behavior-change half-life. Further investigation is needed to determine the amount of treatment time needed to secure long-term behavioral change.

Although the majority of the studies reviewed here reported positive outcomes, conflicting findings do exist. One issue likely explaining some of the outcome differences noted in this review is the variation in the MI modalities employed. MI has been adapted to fit many different settings and to address a wide variety of problems. In their discussion of MI adaptations, Miller and Rollnick (2002) described two common interventions that, similar to MI, focus on motivation and behavioral change but differ in the nature of the client–worker relationship and in the type of change targeted. Behavior change counseling is a brief (5–30 minute) intervention that has a goal of building motivation to change and uses a more collaborative worker/client relationship. Brief advice is described as a very brief (5–15 minute) intervention in which the interventionist is in the role of an expert advice giver and the client is a passive receiver. The goal of MI is to not only initiate or establish motivation to change but also to develop the commitment to change. Without clear descriptions of the interventions employed in MI research studies, it is not possible to determine their adherence to the basic MI model or to effectively compare the findings. To enhance knowledge concerning MI effectiveness, it is critical that future studies provide a clear description of the intervention employed.

Hyman and colleagues (2007) compared a MI approach that addressed multiple symptoms contributing to chronic illness simultaneously to an approach that addressed these symptoms sequentially. As noted above, the simultaneous approach was superior across all measures. In social work practice, it is the exception rather than the rule that clients served are struggling to overcome one isolated issue. Typically, the problems people deal with are multicausal and comorbid. As discussed earlier,

an essential change mechanism is enabling clients to develop a discrepancy between stated life goals and current behavior. In theory, then, addressing multiple problems that all impinge on the respondent’s life goals would be the most expedient and effective course of action. The findings of Hyman and colleagues (2007) provide beginning support for this.

Finally, one study indicated disparities in outcomes for older African-American and Caucasian adults (West et al., 2007). Although this disparity was found in only one study, it is not clear whether demographic variables, such as race, were considered in other studies. Little information exists concerning the differential effect of MI by race or gender. This, however, is certainly an important issue. Given that social workers frequently serve low-income individuals and that racial/ethnic minorities and women are overrepresented in this population, studies that examine the effectiveness of MI with these groups are needed.

The studies contained in this review possessed several limitations such as small sample size, unspecified participant motivation to change, reliance on self-reported measures, and lack of participant diversity. Likewise, it should be noted that assessing the efficacy of a specific therapeutic approach by means of narrative review of the intervention literature does have its limitations. Metaanalysis, which provides a statistical amalgamation, summarization, and review of quantitative studies, can provide more objective evaluation of the evidence and a more precise estimate of treatment effect than can traditional narrative reviews (Egger & Davey Smith, 1997). However, to conduct a meaningful metaanalysis, a sizable number of primary research studies must first exist. Research on MI to promote behavioral change in older adults is still in the early stages.

In sum, existing studies of MI with older adults do provide beginning evidence of the effectiveness of this approach for affecting needed behavioral change among older adults with acute and chronic illnesses. The narrative review provided here suggests that MI with older adults can provide beneficial outcomes in terms of weight loss, smoking cessation, and improved diet and that continued MI intervention studies—and future statistical reviews of these studies—is warranted. Given the emerging body of evidence concerning MI and the serious negative consequences that problematic behaviors can have on the health and functioning of older adults, efforts should be made to introduce social work students and professionals to MI principles and techniques. Ongoing research is needed, however, to confirm and extend research findings. Because of the tremendous health, quality-of-life, and medical cost benefits that can be achieved through needed behavioral and lifestyle changes, ongoing research and the

education of social work students and professionals on the use of MI with older adults is recommended.

## References

- American Diabetes Association (2007). *Total prevalence of diabetes & pre-diabetes*. Retrieved April 27, 2007, from <http://diabetes.org/diabetes-statistics/prevalence.jsp>
- American Lung Association (2006). *Chronic obstructive pulmonary disease fact sheet*. Retrieved August 24, 2007, from <http://www.lungusa.org/site/pp.asp?c=dvLUK9O0E&b=35020>.
- Beers, M. H. (2004). *The Merck manual of health & aging*. Whitehouse Station, NJ: Merck.
- Bennett, J. A., Lyons, K. S., Winters-Stone, K., Nail, L. M., & Scherer, J. (2007). Motivational interviewing to increase physical activity in long-term care cancer survivors. *Nursing Research, 56*, 18-27.
- Bennett, J. A., Perrin, N. A., Hanson, G., Bennett, D., Gaynor, W., Flaherty-Robb, M., et al. (2005). Healthy aging demonstration project: Nurse coaching for behavior change in older adults. *Research in Nursing & Health, 28*, 187-197.
- Borrelli, B., Novak, S., Hecht, J., Emmons, K., Papandonatos, G., & Abrams, D. (2005). Home health care nurses as a new channel for smoking cessation treatment: Outcomes from project CARES (community-nurse assisted research and education on smoking). *Preventive Medicine, 41*, 815-821.
- Brodie, D. A., & Inoue, A. (2005). Motivational interviewing to promote physical activity for people with chronic heart failure. *Journal of Advanced Nursing, 50*, 518-527.
- Egger, M., & Davey Smith G. (1997). Meta-analysis: Potentials and promise. *British Medical Journal, 315*, 1371-1374.
- Federal Interagency Forum on Aging-Related Statistics (2006). *Older Americans update 2006: Key indicators of Well-being*. Hyattsville, MD: Author, 2006.
- Fingerhood, M. (2000). Substance abuse in older people. *Journal of the American Geriatrics Society, 48*, 985-995.
- Gordon, A. J., Consigliere, J., Maisto, S. A., McNeil, M., Kraemer, K. L., & Kelley, M. E. (2003). Comparison of consumption effects of brief interventions for hazardous drinking elderly. *Substance Use & Misuse, 38*, 1017-1035.
- Hokanson, J. M., Anderson, R. L., Hennrikus, D. J., Landon, H. A., & Kendall, D. M. (2006). *The Diabetes Educator, 32*, 562-570.
- Hooyman, N., & Kiyak, H.A. (2008). *Social Gerontology* (8th ed.). Needham Heights, MA: Allyn & Bacon
- Hyman, D. J., Pavlik, V. N., Taylor, W. C., Goodrick, G. K., & Moye, Lemuel. (2007). Simultaneous vs. sequential counseling for multiple behavior change. *Archives of Internal Medicine, 167*, 1152-1158.
- Jackson, R., Asimakopoulou, K., & Scammell, A. (2007). Assessment of the transtheoretical model as used by dietitians in promoting physical activity in people with type 2 diabetes. *Journal of Human Nutrition & Dietetics, 20*, 27-36.
- Kolt, G. S., Schofield, G. M., Kerse, N., Garrett, N., & Oliver, M. (2007). Effect of telephone counseling on physical activity for low-active older people in primary care: A randomized, controlled trial. *Journal of the American Geriatrics Society, 55*, 986-992.
- Kreman, R., Yates, B. C., Agrawal, S., Fiandt, K., Briner, W., & Shurmer, S. (2006). The effects of motivational interviewing on physiological outcomes. *Applied Nursing Research, 19*, 167-170.
- Kropf, N. P., & Tompkins, C. J. (2002). Teaching aging: Syllabi, resources, & infusion materials for the social work curriculum. Alexandria, VA: Council on Social Work Education.
- Miller, W. R., & Rollnick, S. (2002). *Motivation interviewing: Preparing people for change* (2nd ed.). New York: Guilford Press.
- McHugh, F., Lindsay, G. M., Hanlon, P., Hutton, I., Brown, M. R., Morrison, C., et al. (2001). Nurse led shared care for patients on the waiting list for coronary artery bypass surgery: A randomized controlled trial. *Heart, 86*, 317-323.
- National Cancer Institute (2007). *What you need to know about lung cancer*. National Cancer Institute (NCI) booklet [NIH Publication No. 07-1553]. Retrieved July 26, 2007, from <http://www.cancer.gov/cancertopics/wyntk/lung>
- National Institute on Alcohol Abuse and Alcoholism (2005). Social work education for the prevention and treatment of alcohol use disorders. Retrieved May 22, 2008, from <http://pubs.niaaa.nih.gov/publications/Social/Module10COlder-Adults/Module%2010%20C%20Older%20Adults.ppt>.
- Rogers, C. (1961). *On becoming a person: A therapist's view of psychotherapy*. New York: Houghton Mifflin.
- Sims, J., Smith, F., Duffy, A., & Hilton, S. (1998). Can practice nurses increase physical activity in the over 65s? Methodological considerations from a pilot study. *British Journal of General Practice, 48*, 1249-1250.
- Smith, D. E., Heckemeyer, C. M., Kratt, P. P., & Mason, D. A. (1997). Motivational interviewing to improve adherence to a behavioral weight-control program for older obese women with NIDDM. *Diabetes Care, 20*, 52-54.
- U.S. Census Bureau, *U.S. Census Bureau, Statistical Abstract of the United States: 2004-2005*. Retrieved May 22, 2008, from <http://www.census.gov/prod/2004pubs/04statab/pop.pdf>
- Wakefield, M., Olver, I., Whitford, H., & Rosenfeld, E. (2004). Motivational interviewing as a smoking cessation intervention for patients with cancer. *Nursing Research, 53*, 396-405.
- West, D. S., DiLillo, V., Bursac, Z., Gore, S. A., & Greene, P. G. (2007). Motivational interviewing improves weight loss in women with type 2 diabetes. *Diabetes Care, 30*, 1081-1087.