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Cultural Adaptations of Motivational Interviewing: A Systematic Review

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Abstract

Motivational interviewing (MI; Miller & Rollnick, 2012) has expanded from treating substance use disorders to other health concerns across a range of racial-ethnic groups and ages. The spirit of MI lends itself well to working with culturally diverse populations by eliciting the client's values and goals in a collaborative and client-centered approach in pursuit of behavior change. Additionally, MI has been further adapted for use with racial-ethnic minority groups to enhance its effectiveness with specific populations. The aim of this review was to investigate existing cultural adaptations of MI (CAMI), their effectiveness, and to provide directions for future cultural adaptations in both research and clinical settings. This systematic review identified studies of CAMI over the past 20 years using MEDLINE/Pubmed and Embase. The final dataset consisted of 25 peer review studies. In the RCT studies that utilized a control condition (17), 10 studies showed that the CAMI condition performed significantly better on at least the primary outcome measure than the control condition. All 10 studies adapted Context, Content, and Concepts — three of the dimensions of cultural adaptation defined by the ecological validity framework used in this study (Bernal, Bonilla, & Bellido, 1995).

Keywords

motivational interviewing; cultural adaptations; systematic review; ecological validity framework

Introduction

Individuals from racial and ethnic minority groups in the United States continue to experience devastating health disparities in several areas. For example, racial-ethnic minorities have more mental illness stigma for common mental disorders when compared to

racial majorities (Eylem et al., 2020); are associated with underutilization of mental health services (Nadeem et al., 2007); and, compared to White individuals, receive worse access to care and poorer quality of healthcare (Agency for Healthcare Research and Quality, 2018). Furthermore, individuals from racial-ethnic minority groups report significantly more perceived discrimination from providers, unsatisfying interactions with providers, (Lee, Ayers, & Kronenfeld, 2009) and have higher dropout rates (Saloner, Carson, & Cook, 2014).

Cultural Adaptations of Evidence-Based Treatments

To reduce health disparities and provide better care to racial-ethnic minority groups, research has focused on the development and implementation of culturally appropriate interventions. Marin (1990) defined culturally appropriate interventions as meeting three criteria: 1) the treatment must be based on cultural values of the group; 2) treatment strategies are consonant with the subjective culture of the group; 3) components of the treatment are based on the expectations and behavioral preferences of the group. Motivational interviewing (MI), a collaborative counseling style that emphasizes identification and mobilization of a client's intrinsic values, has been adapted over the past 30 years by incorporating how a target population perceives the treatment and their perception of the determinate of the target health behavior being studied (Miller & Rollnick, 2012; Resnicow et al., 2000). Culturally adapted MI (CAMI) studies often combine MI with other health behavior treatments relevant to the population of interest (e.g., diet and exercise regimen planning, community events to generate support for change, health education courses, group meetings, or pharmacological therapy). However, to date no summary or synthesis of these attempts to adapt MI to specific racial-ethnic minority groups exist. As a result, it is difficult to systematically evaluate how each study is distinctly adapting MI and what adaptations facilitate significant changes in outcomes.

Background of Motivational Interviewing

Clinicians that use MI create a collaborative and empathic environment with a specific focus on eliciting a client's own argument for change while enhancing the client's self-efficacy (Miller & Rose, 2009). By evoking the client's own reasons for change, an MI clinician reflects and summarizes the client's perspective, including social, cultural, or personal barriers and benefits to behavior change. Although MI was initially developed more than 30 years ago to address substance use (Miller & Rollnick, 1991), MI has subsequently been used to facilitate change in a wide variety of health behaviors including smoking, diet and exercise, and medication adherence. (Britt et al., 2004; Burke et al., 2003; Dunn et al., 2001; Magill et al., 2018; Martins & McNeil, 2009).

MI with Diverse Racial and Ethnic Minority Populations

In addition to its demonstrated effects on motivating health behavior change, MI can be effectively delivered by health professionals from various disciplines and can lead to significant effects in as little as a single session (Lindson-Hawley et al., 2015). MI recommends that clinicians avoid adopting an expert role and instead take a collaborative, client-centered approach. Thus, MI may be particularly effective at reaching racial-ethnic minority populations and addressing common barriers to accessing health services such as discrimination or distrust of health care systems. In fact, some evidence suggests that the

effects of MI are greater in racial-ethnic minority populations (Hettema et al., 2005; Lundahl et al., 2010). To enhance MI's effectiveness, cultural adaptations have been implemented in the past 20 years that have further tailored the treatment to work harmoniously with the shared values, goals, and beliefs of the population being studied. Oh & Lee (2016) identified several limitations of the current CAMI research, including the lack of studies that examine race/ethnicity, the use of broad racial and ethnic categories that can lead to overgeneralization of results, and the lack of data collection on the preferences of those racial-ethnic minority groups who are unwilling to engage with treatment or were screened out of studies.

Rationale for Cultural Adaptations

MI is a client-centered approach, and therefore emphasizes the specific considerations or values of the presenting individual. However, there have been efforts to explicitly adapt MI for different racial-ethnic minority populations and to include shared goals, beliefs, and customs into the treatment. Adaptations to MI have been defined previously as any nonmotivational interview techniques that are added to an MI treatment session, such as feedback sessions or phone calls to remind clients of sessions (Burke et al., 2003). Adaptations of MI (AMI) retain MI principles as the core of the treatment but have additional components that may bolster the overall effect of the treatment. Further, cultural adaptation of MI should seek to maintain MI's foundational elements, such as a client-centered treatment, empathy, rolling with resistance, supporting efficacy, and elicitation of change talk, but "deliver these ingredients in a way that is compatible with language, phraseology, attitudes, behaviors, preferences, and social context" (Interian et al., 2010, p. 3). The goals of our current study were to specifically investigate dimensions of cultural adaptations of MI (CAMI) in which cultural sensitivity was incorporated into either the AMIs or into the direct delivery of MI (Lee et al., 2013).

Cultural Adaptation Frameworks

Resnicow and colleagues (1999) provide a structure for conceptualizing the degree of cultural sensitivity for an adapted treatment into two structural categories: surface and deep. The adaptation of a treatment at a surface level involves adapting the delivery and setting of messages and programs and are primarily used to ensure fit with the target population's culture, experience, and behavioral patterns. Adapting a treatment for surface structure is to establish the feasibility of the treatment with a specific population. Examples of ensuring a culturally sensitive fit for a treatment within the surface structure could be ethnically matching clinicians to the target population, utilizing churches, community centers or local congregation spaces for the study activities, or involving music or food that is familiar to the target population (Longshore et al., 1999).

Deep structural adaptation reflects how the cultural background of a population influences health behaviors and how the population then perceives the treatment in relation to the target behavior. The deep structure of a treatment determines program impact; specifically, how the perceptions held by the target group about religion, family, society, economics, and the government influence the target behavior (Resnicow et al., 2000). Deep structure entails how the members of the target population understand the cause, course, and treatment of the

target behavior (Resnicow et al., 1999). Adapting a treatment using deep structural changes may involve consideration of the magnitude of stress that certain events may have on the target population and adapting the treatment to address these issues. For example, adapting MI might include a discussion of how alcohol is used by members of the community to cope with stressful situations and then having clients in the group problem solve for alternative ways that they could relieve stress instead of drinking (Bacio et al., 2014).

While Resnicow and colleagues' framework for dichotomous classification of cultural adaptations have utility, further division among surface and deep classifications for individual groups may ensure that stereotyping or broad generalizations are not influential in treatment development and more specific factors of the populations' culture can be tailored. For example, the framework proposed by Bernal and colleagues (1995) details a more in-depth approach to adaptation of a psychosocial treatment that has eight overlapping dimensions of adaptation in the ecological validity framework: Language, Persons, Metaphors, Content, Concepts, Goals, Methods, and Context. Although the framework proposed by Bernal and colleagues was originally intended for Latinx populations, we believe that it represented the overall importance of ecological validity when designing any treatment and could be used as a measure for understanding how much the MI is being changed as part of the overall treatment. Other models for developing culturally adapted treatment exist; however, the ecological validity framework provided specific dimensions that the reviewers could use to identify themes in adaptations and was generalizable to other populations in ways that other models could not match.

Present Study

Over the past 20 years, perhaps in part due to MI's flexibility and accessibility, several studies have tailored MI to specific racial and ethnic groups. To our knowledge, this is the first systematic review to examine different dimensions of CAMIs, as well as their efficacy in facilitating health behavior change. Previous meta-analyses or systematic reviews of MI have focused on subsample populations (e.g., Latino males, substance use in youths), or AMIs and their effectiveness (Burke et al., 2003; Dunn et al., 2001; Noonan & Moyers, 1997). This review has four main objectives. First, we present the basic characteristics of each of the culturally adapted MI trials and pilot studies (e.g., target population, health behavior, intervention setting). Second, we evaluate the application of different dimensions of the CAMI using Bernal et al.'s (1995) ecological validity framework. Third, we explore whether outcomes are improved when cultural adaptations are made to MI. Fourth, we suggest future directions for clinically implementing and researching CAMI to improve client outcomes and further understand the underlying mechanisms of action within CAMI.

Method

Search Strategy

Our systematic search adhered to the guidelines established by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Moher et al., 2009). All articles included were published between June 1991 (i.e., the month the first edition of Motivational Interviewing was published) and June 2019 and were identified using

searches in MEDLINE, Pubmed and Embase. The first two authors of this study began the systematic review of articles in June 2019 and completed review in January 2020. Cochrane Library was also searched but did not yield results with the descriptor criteria used. The descriptors we searched for (“Motivational Interviewing”, “Motivational Enhancement Therapy”, “Motivational Change”, “Motivational Behavior”, “Motivational Intervention”, “SBIRT”, “CAMI”, “GMI”) were combined with the Boolean search modifier “AND” and a combination of the words “culture” “adaptation” “cross-cultural” “multicultural” and “culturally tailored”. Our search terms are from Resnicow et al.’s (2000) article that described terminology commonly used to describe cultural sensitivity.

Inclusion/Exclusion Criteria

Studies were included if: 1) they reported on an MI intervention as described by (Miller & Rollnick, 1991; Miller & Rollnick, 2002; Miller & Rollnick, 2012b); 2) used a form of MI as a treatment for addressing any target health behavior; 3) provided details on either surface or deep structural adaptations of the MI methodology or delivery that was tailored to the racial-ethnic group in the sample population, as described by (Resnicow et al., 2000); 4) treated a sample population that was comprised of at least 75% of any one racial or ethnic group; and 5) were published in English in a peer-reviewed journal and were not grey literature (i.e., abstracts, white papers, conference presentations, etc.). Two articles met these criteria but did not have sufficient data for our review despite efforts to contact the authors and a search of the U.S. National Library of Medicine Clinical Trials database.

Articles were analyzed for potential inclusion using DistillerSR (Evidence Partners, Ottawa, Canada) in three rounds; first, one author screened articles using abstract and title only. Second, a review of the full-text articles was completed by the first and second author using masked reviewing within the DistillerSR application. The second-round review used forms with predetermined choices that were agreed upon by the first two authors for adaptation depth based on definitions from Resnicow and study design (Resnicow et al., 2000). Once the final dataset of articles was collected, the third masked review was conducted by the first two authors to collect more nuanced characteristics of the MI and the adaptations (e.g., dimensions of adaptation based on Bernal’s 1995 article, MI training format) using predetermined choices for each field (Bernal et al., 1995). Any disagreements on inclusion or specific data were resolved by consensus once all articles had been reviewed on each level by both parties. This process resulted in 25 studies being identified for inclusion (Figure 1).

Data Extraction and Analysis

This review documents pilot studies and randomized controlled trials (RCT), the health behaviors being targeted, description of the outcomes, and a breakdown of adaptation dimensions utilized by study. In Table 1, the data on these studies was arranged by year of publication to orient the reader to possible trends in development of CAMI over time. Although some of the studies referred to themselves as pilot studies, the studies in this review were identified as an RCT if they used randomization of subjects and a control group with comparative between-groups statistics. All other studies were grouped as pilot studies, regardless of sample size.

Data on each element in Table 1 were coded by two authors independently, were discussed once all coding had been completed, and then classified by consensus. The sample size, demographic group, intervention setting, adapted MI sessions, and health behavior were all extracted from included articles as defined by the authors; no grouping or analysis was conducted for these categories.

Tables 2 and 3 use dimensions of a culturally adapted intervention from Bernal et al. (1995) to interpret CAMI in the included studies. These elements of cultural adaptation are not meant to be used as a coding system for adaptation; rather, they were used in the current review as descriptors of each study to discern overall trends in the adaptation literature. Each dimension of adaptation was assessed on a yes/no scale by both lead authors and then answers were compared for each included article. Differences in inclusion or exclusion of dimensions were resolved by consensus.

Results

Study Characteristics and Designs

The final dataset of 25 studies reviewed here include 8 pilot studies and 17 randomized controlled trials, shown in Table 1. Figure 1 shows the PRISMA diagram that displays the process of obtaining the final dataset. Although our review search criteria had a starting point that coincides with the first edition of the MI manual by Miller and Rollnick (1991), the first study that met our search criteria was in 1999. There has been an increase in CAMI studies starting in 2013 (mode=5), with four studies published in 2016 and four in 2017 as well. It is important to note that details on methodology, adaptation measures, or descriptions of CAMI development were collected from ancillary articles that referenced seven of our included studies. We chose articles in our review to represent each of these multi-publication studies because they presented statistics and demographic information of the sample population.

Sample Characteristics

Sample Size.: Sample sizes in the RCT and pilot studies varied widely, with a mean sample size of 41.9 for pilots and 257.2 participants for RCTs. Two studies in the pilot group had a control group that received unadapted MI but they did not publish statistical measures comparing the primary outcomes of the two groups (Field et al., 2019; Hughes et al., 2017).

Racial-ethnic Population Receiving CAMI.: Regarding racial-ethnic minority groups, the authors recognize that African-American as a term is often used to identify Black Americans in scientific studies and is used in the studies in this review interchangeably with Black. In line with recommendations from Chavez and Oetting (1995) regarding cross-cultural research, we make a distinction for demographic groups to not overgeneralize regarding population identity. For the purposes of this study, Black was used in Table 1 for racial-ethnic group purposes to identify studies that were comprised of 75% of Black Americans in the sample. Other racial-ethnic groups, such as American Indian/Alaskan Native, were included as named by the authors of the respective studies. The demographic

groups included were Latinos (L; n=11), Blacks (B; n=6), Asians (A; n=5), and American Indian/Alaskan Natives (AI/AN; n=3).

Delivery Setting.: When adapting treatment and focusing on effectiveness, finding an existing treatment environment that is accessible and conducted in a comfortable physical space for the clients is one element of adaptation. The setting in which the MI was conducted by the study clinicians was grouped into six categories: Home, Phone, Clinic, Hospital, Church, or Other. One study had multiple MI delivery settings, as denoted by listing of two categories separated by a forward slash (Borrelli et al., 2010). The Home category was defined as a location chosen by the participant that was most comfortable or most convenient for the purposes of the MI treatment. The Clinic category refers to any community health clinic, support center, mental health outreach center, or any community-based location where participants might receive treatment, resources, or services related to the target behavior being investigated. Out of all studies that included intervention location in their published findings (n=20), 10 of the studies conducted the treatment in a community center of some type, four in community church settings, three in the home or another location provided by the client, one in a hospital clinic, one in other (office building), and one study was conducted by phone only.

Health Behaviors.: The studies included in our review spanned a wide variety of health behaviors, focusing on treating nutrition/exercise (n=7), alcohol use (n=5), medication adherence (n=3), smoking (n=2), other substance use such as heroin/cocaine and mixed drug/alcohol/tobacco (n=2), sexual risk behaviors (n=2), self-management behaviors (n=1), breast cancer screening (n=1), and sleep (n=1). Of the studies that targeted nutrition and exercise, there was variation in the goal of the CAMI such as blood pressure reduction (n=2), weight loss, and cardiovascular disease (CVD).

CAMI Session Type.: This data was grouped into three categories: individual sessions with study participants, group sessions with participants and the clinician, and individual/group, when MI was delivered in both individual and group sessions. Most studies utilized individual CAMI sessions only (n=20), three used group sessions (e.g., Sánchez et al., 2013), and two studies used a combination of individual and group sessions (e.g., Choi et al., 2016). However, the approach of the combination studies was varied; Choi et al. (2016) used in-person group CAMI followed by brief, individual phone call booster sessions, while Vlaar and colleagues (2017) conducted 6–8 individual in-person sessions with a dietician, 3–4 booster sessions over the following 18 months, and a group session with the family of the participant.

Additional Elements with MI.: Studies were classified using a yes/no scale based on whether they provided other treatment or supporting elements to the CAMI. Examples of additional elements were hosting communal events for participants, supplementary review of materials such as guides, diet plans, videos, or other literature with the participants, values clarification activities, or pharmacotherapy. Only 10 of the 25 studies (40%) utilized MI as a standalone intervention with the respondent group and did not include other treatment intervention items (e.g., diet and exercise coaching, community support events, educational

videos, case management services). Eight studies (32%) reported on CAMI with additional intervention elements compared to a health education or lifestyle advice condition. Other control treatment conditions include feedback from the clinician after completing baseline measures (Moore et al., 2016), assessment of treatment needs and referrals to other services (Longshore et al., 1999), and a Behavioral Action Model (Borrelli et al., 2010). Three studies compared CAMI to a usual care condition without other elements added to the control group's treatment.

Training format for MI. This category indicated how clinicians were trained to administer MI in the study. Studies were classified into one of four groups: 1) clinicians were trained by attending a workshop that reviewed MI principles and practices; 2) clinicians were coached by the principal investigators or by someone from the Motivational Interviewing Network of Trainers (MINT) through regular phone calls, 3) audio or video tapes of sessions or in-person sessions were reviewed by study (Martino et al., 2007); clinicians were trained in a combination of workshops and coaching; or 4) clinician training was not stated. The amount of MI training provided to clinicians varied, especially for studies that utilized community members or non-mental health personnel as clinicians without prior mental health education (e.g., dieticians in Vlaar et al., 2017). Thirteen studies offered clinicians a combination of workshop trainings and individual coaching; one used coaching only and the other 11 did not provide details on clinician training in MI.

Fidelity. Treatment fidelity is a measure of how consistently the treatment delivery follows the principles and spirit of MI. Fidelity was classified on a yes/no scale depending on whether the studies explicitly mentioned conducting MI treatment fidelity measures as a part of their methods. In our review, 60% of all the studies included used some form of fidelity monitoring to measure the delivery of MI, primarily by using the Motivational Interviewing Treatment Integrity (MITI) scale (Moyers et al., 2016). One study measured MI treatment fidelity with the GROMIT (Moyers, 2004) and another used an Adherence Checklist (Spirito et al., 2004).

Control Group with Unadapted MI. This category indicated whether unadapted MI was used wholly or in part of the control group treatment to explore whether having MI as part of treatment was effective or whether the cultural adaptations proved to increase effects in the primary outcome variable. We defined unadapted MI as studies that did not utilize a cultural adaptation framework to structure their study or those that did not describe the incorporation of any population-specific themes, goals, or factors related to the behavior taken from client feedback in session or pretesting of the intervention

Five studies included a control group that utilized unadapted MI to compare the CAMI treatment effects in the respondent group. Two studies did not report comparison statistics on whether differences existed for primary outcome measure between both groups. Two studies found that the groups did not differ significantly, and one study found the CAMI group performed better on the primary outcome measure than the control group.

CAMI Compared to Control Outcomes. This comparison detailed whether a statistically significant difference was reported on the primary outcome of the study between the CAMI

treatment group and the control group. This comparison was limited to the primary outcome data as defined by each study to simplify the comparison between control and treatment groups and evaluate whether the CAMI group had a significant difference on at least one variable that could provide evidence for the targeted behavioral intervention effectiveness. This review was undertaken partly to investigate whether studies that utilized CAMI as a part of an overall multi-approach treatment achieved significant differences between the control and CAMI groups.

In the RCT studies that utilized a control condition (n=17), 10 studies showed that the CAMI condition performed significantly better on at least the primary outcome measure than the control condition. For these 10 studies, only six studies documented MI treatment fidelity measures. Seven studies found that the CAMI group did not have statistically significant differences on the primary outcome measure compared to the control condition, with four of the studies documenting MI treatment fidelity measures. One study's primary outcome measure was determined by participant self-report through Likert-style questions from six motivational domains with the CAMI group showing significantly higher scores on two of the six domains (Involvement and Motivation) (Longshore et al., 1999). For Hughes et al. (2017), the authors reported that the CAMI group did better in the primary outcome measure than their control group (i.e., second-hand smoke exposure), but the study did not report any measures of statistical significance.

Intervention Content

Table 2 shows the totals of Bernal et al.'s (1995) dimensions of cultural adaptation for pilot studies. Five of the pilot studies adapted all dimensions. Context was the most adapted dimension amongst pilot studies (n=8), followed by Language, Persons, Metaphors, and Content (n=7). The least utilized dimension for pilot studies was Goals (n=5).

Table 3 shows adaptation totals for randomized controlled trials with a breakdown of dimension totals between studies where the CAMI group was significantly different on the primary outcome measure compared to studies where both groups performed equally. The adaptation dimensions of Content, Concepts, and Context were implemented for all 10 of the studies where the CAMI group had a significant difference in primary outcome measure than the control group (represented by the dark gray squares). The least utilized adaptation dimension was Language with only 5 out of 10 studies using it for their CAMI treatment group. No studies included in our review showed that the control group had significantly better primary outcome measures than the CAMI group.

Discussion

The current review identified pilot and RTCs that reported on CAMI for specific racial and ethnic groups across a variety of treatment behaviors. The review shows that there is limited research that compares unadapted MI as a control condition against CAMI (20% of reviewed studies). However, there is evidence that CAMI had significant findings for the primary outcome measure in studies that did have a control group (40%), but the conditions for the control group varied. In the RCT studies that were successful (i.e., CAMI performed better than the control on primary outcome measure), we identified content, context, and concepts

as the Bernal and colleagues' dimensions that were adapted the most (all 10 of the CAMI > MI studies adapted them).

Although we used Resnicow et al.'s (2000) framework for cultural adaptations as a criterion for inclusion or exclusion based on whether the study identified surface, deep, or a combination of cultural adaptations, we then decided to investigate specific dimensions of adaptation to understand the themes in the literature for what has been successful in CAMI as an element of treatment for various target behaviors. The ecological validity framework by Bernal et. al provided us this ability and defined the seven dimensions of adaptation: language, persons, metaphors, content, concepts, goals, methods, and context (1995). When viewing the trends among pilot studies and RCTs in Tables 2 and 3, respectively, the pilot studies were able to incorporate more dimensions of the ecological validity framework into adapted treatment. In many cases, all dimensions were included in pilot studies. One possible explanation for this difference between the two study types could be that pilot studies have a more experimental approach than RCTs and that the broader context of pilot studies could allow for trying all adaptation dimensions to see if CAMI is the right fit for a population in general. Researchers can then return to the participant feedback given during the pilot study on best practices and adaptations to include in a future RCT.

Trends of Cultural Adaptation Dimensions

Focusing on the trends among the RCTs, the three dimensions of content, context, and concepts were most adapted for studies where cultural adaptations of MI were superior to the control conditions (see Table 3).

Content—Bernal et al. (1995) defined Content as the way in which the clinician handles and incorporates cultural information about values, customs and traditions that reflects the uniqueness of the population into the treatment planning. For example, if the importance of the family unit is an important cultural ideal, then using a genogram to help the clients explain their personal history is harmonic to providing treatment that they can understand. Through our coding, we identified examples of how this was adapted in the reviewed studies. For example, the study by Resnicow et al. (2005) reported that clinicians were mindful of religious commitments as a barrier to seeking care or as a concern when making time for the target behavior (exercise). One study addressed the issue of pressure from family and friends for Latino participants to stop taking medication by having clinicians focus on developing the therapeutic alliance or *confianza* so that participants would have a supportive partner in adhering to medication, especially during periods of side-effects or changes in medication efficacy for treating their depression (Interian et al., 2010; Interian et al., 2013). Another study acknowledged the diverse traditional, ritual, and spiritual role that tobacco has for an AI/AN group and how conventional control messages that portray tobacco negatively may be offensive to their relationship to tobacco (Choi et al., 2016; Faseru et al., 2010).

Concepts—The dimension of Concepts is defined as the reframing and communication of the treatment model to match the target population's cultural importance on specific character traits or the importance of emic (within culture) or etic (outside culture, universal)

values (Bernal et al., 1995). For example, if dependence is a negative trait in a population's culture, reframing or explaining this trait as part of symbiosis, fusion, or enmeshment when discussing social support as a means of refraining from substance misuse. Examples from the reviewed studies included discussion of alcohol intoxication as a conventional disqualifier for participating in traditional AI/AN ceremonies and activities (Gilder et al., 2017) or depicting drug dependence as a community disorder stemming from disparities between Black and White American communities (Longshore et al., 1999).

Context—Adapting the Context dimension of the treatment involves consideration of acculturative stress, availability of social supports, the economic or political situation, and the client's relationship to the country or culture of origin. Lee et al. (2013) specifically targeted this dimension by having clinicians identify and discuss the effects of low-status employment or social isolation on drinking behavior and elicit what mattered to the participant, which helped them understand cultural priorities within the target Latino population. Other examples of the cultural adaptation of context were discussing the importance of family (*familismo*) in a Latino population and their function as a support system for quitting smoking as well as how smoking affected their family (Borrelli et al., 2010).

Limitations of this Review

The current review must be considered in the context of its limitations. First, we chose to limit our analysis of CAMI efficacy to the primary outcome measure. Systematic changes on the inclusion of secondary or tertiary measures as outcome variables may be present in the current and future trials, which ideally could be detected by meta-analytic reviews. Some studies also collected tertiary outcome measures like assessing whether serious legal or physical harm was affected as a treatment interaction for drinking in addition to drinking days per month (Lee et al., 2013). Second, our analysis of the adaptation dimensions may have been overly conservative, as we were limited to what was reported in the published study or other studies in which the authors detailed the intervention. Articles that detailed the methods for culturally adapting MI but did not include results were not included in our review. Except for two studies (Rongkavilit et al., 2014; Vlaar et al., 2017) the reviewed studies were conducted with American populations; as such, the use of CAMI with international populations may have different trends than those identified in this review.

Our strategy for analysis of the included studies was on investigating the efficacy of CAMI in comparison to MI or a control condition. We recognize that MI is only one of the treatments involved in each of these multimodal studies and the goals of the studies may not have been to disentangle the active ingredients of treatment effectiveness. Alternatively, it is also possible that the goal of the interventions may have been to increase health outcomes overall in a specific population. In fact, one study mentioned that their intervention was not designed to identify which aspect of their overall treatment (combination of pharmacotherapy and MI) facilitated retention within the program (Lewis-Fernández et al., 2013). Looking at a prior meta-analysis of MI, 31 out of 41 studies combined MI with other types of interventions including education, skills training, cognitive therapy, and relapse prevention measures (Hettinga et al., 2005).

Future Directions

Individuals from racial and ethnic minority groups have less access to quality mental health care when compared to Whites (U.S. Department of Health and Human Services, 2001) and it is critically important that we continue to examine ways to adapt evidence-based treatments to better serve them. Published findings of CAMI have increased greatly since 2010, signaling increased attention to the development of interventions that are designed to better meet the needs of racially and ethnically diverse populations. As the development, evaluation, and dissemination of CAMI continues, it is important to consider that racial and ethnic minority groups are heterogeneous and there may be widespread individual differences among preferences for treatment components. For example, Venner and colleagues (2016) note that AI/AN tribes have different cultures and customs and as such, a one-size-fits-all approach to adaptation is not recommended. Thus, a community-based participatory research approach could be utilized in deciding how and when to implement CAMI as a part of a larger intervention to foster a more collaborative approach in tailoring to cultural preferences, as noted by some of the studies' approaches in this review (Field et al., 2019; Sanchez et al., 2013).

The studies we included primarily looked at outcome variables that measure the target behavior such as blood pressure reduction or drug/substance levels; we did not find any studies that assessed other patient outcomes to determine if CAMI improves client health in other ways. This review chose primary outcome as the comparison condition to investigate whether CAMI performed significantly better than the control or unadapted MI groups. However, CAMI may affect client behaviors in other ways, such as improving likelihood of seeking treatment in the future, reducing barriers to change health behaviors, or building trust with clinicians to seek further medical or psychological advice.

In the reviewed studies, there were varying levels of training provided to the clinicians, whether they were community members (*promotoras*, lay health advocates, community health workers), master's-level psychology students, or doctoral-level psychologists administering the MI treatment. MI is a complex style for helping the client discover their own values for behavior change, and as such development of style is contingent on practicing MI over memorization of steps or short training workshops. Although the Motivational Interviewing Network of Trainers (MINT) are often utilized to train study clinicians, standardization of training and its effects on treatment efficacy is another area that could be considered for future investigation of culturally adapted MI, as a previous study showed that slight differences in training may limit the abilities of the clinicians to provide proficient MI (Miller et al., 2004). A recent systematic review of reviews conducted by Frost et al. (2018) highlights that there is no formal requirement for MI training or evaluation and that details of fidelity measure data for training was poor. However, the dimensions identified in this review can be utilized in clinical care by any clinician that works with populations identified in the reviewed studies. Adapting treatment for dimensions such as concepts, context, and content are not exclusive to CAMI, and as MI is client-centered, these dimensions can be informally incorporated into clinicians' approach to treatment.

MI, judged by its foundational principles, is inherently adaptable to various cultures and populations without specific changes made to the treatment modality. However, the current

systematic review shows that there are various ways to incorporate dimensions of culture into MI treatment and that the field has yet to decide on a specific framework or systematic method for cultural adaptation of MI. Based on current studies, the context, content, and concepts are the most utilized dimensions for adaptation and can be incorporated into clinical work, provided that the clinician assesses for the appropriateness of the adaptations for each of these dimensions with the specific population. Future research is still needed to understand whether CAMI has farther-reaching effects beyond a primary behavioral outcome measure.

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Impact Statement:

This systematic review summarizes approaches for incorporating cultural sensitivity into motivational interviewing treatment for various behaviors. Current studies indicate that cultural context, content, and concepts are the most common approaches to achieving behavior change through culturally adapting treatment for targeted racial or ethnic populations.

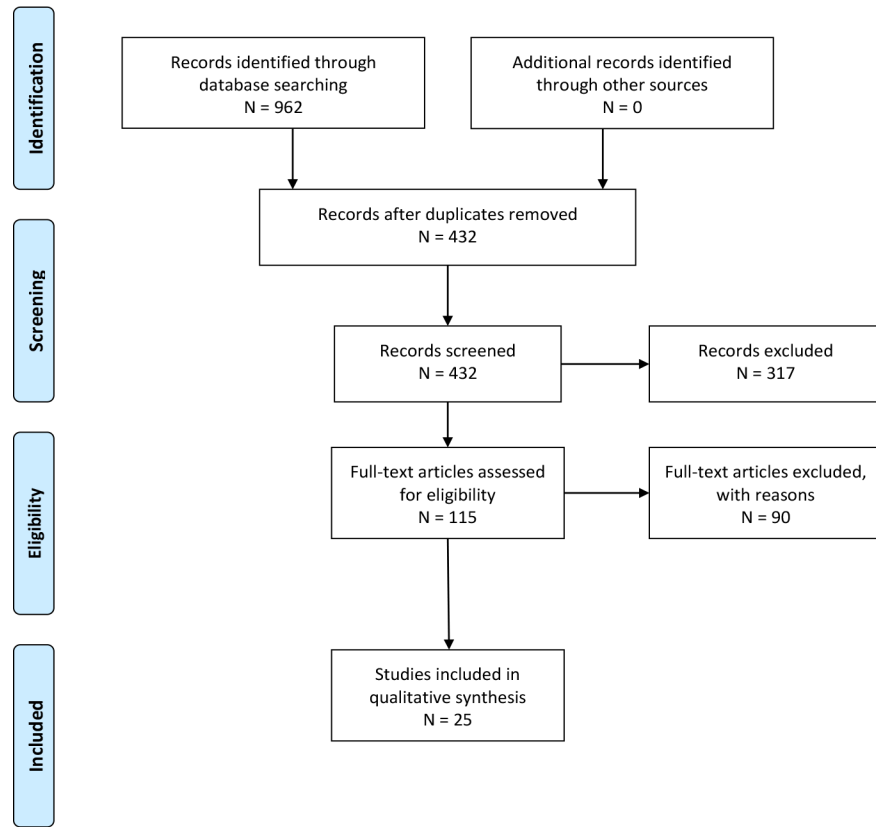


Figure 1.
PRISMA Flow Diagram

Table 1

Study Characteristics

Study	N	Group	Setting	Health Behavior	CAMI Session Type	CAMI Sessions	Additional elements with MI	Training format for MI	Fidelity	Control Group with MI	CAMI compared to control (<, >, =)
Longshore, 1999	222	B	Clinic	Substance use	I	1	Y	—	Y	N	CAMI > C
Resnicow, 2005	906	B	Church	Nutrition/Exercise	I	4	Y	W+C	—	N	CAMI > C
Borrelli, 2010	133	L	Home/phone	Smoking	I	3	Y	W+C	Y	N	CAMI = C
Rocha Goldberg, 2010	17	L	Clinic	Nutrition/Exercise (Blood Pressure)	G	6	Y	—	—	—	—
Corsino, 2012	56	L	Clinic	Nutrition/Exercise (Weight Loss)	G	20	Y	—	—	—	—
Interian, 2013 [†]	50	L	Clinic	Med adherence (Depression)	I	3	N	—	Y	N	CAMI > C
Lee, 2013 [†]	57	L	—	Alcohol use	I	1	N	W+C	Y	Y	CAMI > C
Lewis Fernandez, 2013	50	L	—	Med adherence (Depression)	I	12	N	W+C	Y	—	—
Nicolaidis, 2013 [†]	32	B	Clinic	Self-management (Depression)	I	—	Y	W+C	Y	—	—
Sánchez, 2013 [†]	290	L	Other	Sexual Risk	G	4	N	W+C	Y	N	CAMI > C
Rongkavilit, 2014	10	A	Clinic	Sexual Risk	I	4	N	W+C	Y	—	—
Kandula, 2014 [†]	63	A	Clinic	Nutrition/Exercise (CVD)	I	10	Y	C	Y	N	CAMI = C
Gwadz, 2015	95	B	Hospital	Med adherence (HIV)	I	3	Y	—	—	N	CAMI > C
Choi, 2016 [†]	463	AI/AN	—	Smoking	I/G	4	Y	—	—	N	CAMI > C
Coronado, 2016	536	L	Home	Breast Cancer screening	I	1	N	W+C	Y	N	CAMI > C
Moore, 2016	29	L	Home	Alcohol use	I	3	N	W+C	Y	N	CAMI = C
Venner, 2016	8	AI/AN	Clinic	Substance use	I	16–20	Y	W+C	Y	N	—
Gilder, 2017	60	AI/AN	Clinic	Alcohol use	I	1	Y	W	Y	N	CAMI > C
Hughes, 2017	75	A	Church	Smoking	I	5	Y	—	—	Y	—
Hughes & Obayashi, 2017	71	A	Church	Nutrition	I	5	Y	—	—	Y	CAMI = C
Vlaar, 2017 [†]	536	A	Clinic	Nutrition	I/G	9–12	Y	—	—	N	CAMI = C
Cukor, 2018	192	B	Phone	Sleep	I	5	N	—	—	N	CAMI > C

Study	N	Group	Setting	Health Behavior	CAMI Session Type	CAMI Sessions	Additional elements with MI	Training format for MI	Fidelity	Control Group with MI	CAMI compared to control (<, >, =)
Schoenthaler, 2018	373	B	Church	Nutrition/Exercise (Blood Pressure)	I	3	Y	W+C	Y	N	CAMI = C
Field, 2019	87	L	—	Alcohol use	I	—	N	W+C	Y	Y	—
Lee, 2019 [‡]	296	L	—	Alcohol use	I	1	N	W+C	Y	Y	CAMI = C

Note. L = Latino/a; AI/NA = American Indian/Alaskan Native; B = Black; A=Asian; CVD = Cardiovascular Disease; HIV = Human Immunodeficiency Virus; I = Individual, G = Group, I/G = Both Individual and Group; W = Workshop; C = Coaching; W+C = Both Workshop and Coaching; CAMI >, <, or = C signifies whether the culturally adapted motivational interviewing (CAMI) group performed significantly better on the primary outcome measure than the control group. “—” indicates that data was not available or not applicable for the referenced study; N = control group was included in the study, but that the control group either received CAMI as well as the treatment group or that they did not have unadapted MI administered as part of the control treatment conditions

[‡]Data collected in our table came from multiple articles that described the referenced study

Note. One study is referenced in two separate articles (Hughes et al., 2017; Hughes & Obayashi, 2017). These studies had overlapping respondent groups as their control group, with each of their respondent groups receiving CAMI for different behaviors (smoking and nutrition, respectively).

Table 2

Pilot Study Adaptation Dimensions

Pilot Studies	Language	Persons	Metaphors	Content	Concepts	Goals	Methods	Context
Rocha Goldberg, 2010								
Corsino, 2012								
Lewis Fernandez, 2013								
Nicolaidis, 2013								
Rongkavilit, 2014								
Venner, 2016								
Hughes, 2017								
Field, 2019								
% Utilized	87.5%	87.5%	87.5%	87.5%	75%	62.5%	75%	100%

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Table 3

Randomized Controlled Trials Adaptation Dimensions

RCT Studies	Language	Persons	Metaphors	Content	Concepts	Goals	Methods	Context
Longshore, 1999								
Resnicow, 2005								
Borrelli, 2010								
Interian, 2013								
Lee, 2013								
Sanchez, 2013								
Kandula, 2014								
Gwadz, 2015								
Choi, 2016								
Coronado, 2016								
Moore, 2016								
Hughes & Obayashi, 2017								
Gilder, 2017								
Vlaar, 2017								
Cukor, 2018								
Schoenthaler, 2018								
Lee, 2019								
CAMI > C	60%	50%	70%	100%	100%	70%	80%	100%
Totals	(6/10)	(5/10)	(7/10)	(10/10)	(10/10)	(7/10)	(8/10)	(10/10)
CAMI = C	100%	85.7%	71.4%	85.7%	71.4%	57.1%	100%	100%
Totals	(7/7)	(6/7)	(5/7)	(6/7)	(5/7)	(4/7)	(7/7)	(7/7)

Note. Darker shaded squares are used to denote the studies with a CAMI group that showed statistically significant primary outcome finding versus the control group. The lighter shaded squares denote the CAMI group not performing significantly different on the primary outcome measure versus the control group.