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Directions for the Advancement of Culturally Adapted Preventive Interventions: Local Adaptations, Engagement, and Sustainability

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Abstract

To advance the implementation and dissemination of culturally adapted interventions to diverse populations, greater attention should be devoted to three underdeveloped topics: (a) local adaptations of interventions when they are implemented in community settings, (b) participant engagement, and (c) the sustainability of adapted interventions. Several typologies have been developed for studying local adaptations, and some research indicates that such adaptations might add to intervention effectiveness. There is suggestive evidence of ethnocultural group disparities in intervention engagement and in the success of efforts to boost engagement. Theory and limited data indicate that interventions' flexibility and fit with organizational culture and resources can be achieved through cultural adaptations. Furthermore, those adaptations should be associated with sustainability, but research has yet to test that hypothesis adequately. Several recommendations are made for advancing culturally adapted interventions through additional research on local adaptations during implementation, the many facets of participant engagement, and sustainability.

Keywords

Cultural adaptation; Local adaptation; Engagement; Sustainability

Calls for expanded access to efficacious preventive interventions (Biglan et al. 2003; Rotheram-Borus et al. 2012) fueled interest in culturally adapting evidence-based interventions for more effective delivery to diverse communities. Work on the cultural adaptations of interventions, both rehabilitative and preventive interventions, has flourished. Discourse on this topic has included trenchant discussions of the role of cultural adaptations in implementation science (Cabassa and Baumann 2013); pros and cons of adaptation (Castro et al. 2004; Dusenbury et al. 2003; Hansen et al. 2013); descriptions of systematic methods for conducting adaptations (Barrera and Castro 2006; Davidson et al. 2013; Kumpfer et al. 2008); and meta-analyses and narrative reviews of exemplary research (Castro et al. 2010; Gonzales et al. 2016; Sundell et al. 2015). The rationale for cultural

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adaptations is well documented (e.g., Bernal et al. 2009; Cardemil 2010; Castro et al. 2004; Lau 2006). In general, the goal is to improve the reach, engagement, effectiveness, and sustainability of interventions by making modifications to fit ethnocultural groups' languages, cultural values, lifestyles, and any unique risk/protective factors (Cabassa and Baumann 2013). Proponents of cultural adaptations do not advocate unjustified changes to original evidence-based interventions (EBIs). Instead, reasoned steps have been proposed for collecting qualitative and quantitative data that could guide changes to EBI methods and content without disturbing core intervention components (Castro et al. 2010; Lau 2006).

In a paper that called for greater integration of efforts to promote cultural adaptation and implementation science, Cabassa and Baumann (2013) observed that despite their great promise, culturally adapted evidence-based interventions are implemented rarely. The purpose of this article is to discuss three topics having special importance for future advancements of culturally adapted preventive interventions and for the issue's theme of implementation and dissemination: (a) local adaptations of evidence-based interventions, (b) intervention engagement of diverse populations, and (c) sustainability of culturally adapted interventions. These topics are only a few of the many factors that can be studied within the framework of implementation and type 2 translational science, which place great importance not only on the interventions themselves but also on the structure and resources of communities and host organizations (Spath et al. 2013). Nevertheless, how interventions are altered during implementation, how well they engage participants, and how they are sustained by systems of care are key questions for implementation science. Because the initial research emphasis on the cultural adaptation of interventions has focused on their development and efficacy, research on other aspects of implementation elements including local adaptation, engagement, and sustainability has lagged.

Local Adaptations

Local Adaptations Are Common and Can Be Effective

When EBIs, and even culturally adapted EBIs (e.g., Miller-Day et al. 2013), are implemented in community settings, they are changed frequently by program implementers (such as community agencies or classroom teachers) in ways that deviate from the intervention's content and procedures. Deviations of those types can be labeled "local adaptations" or "local reinventions," conveying the fact that products (interventions) developed at one setting (e.g., a university-based efficacy trial) are altered when implemented in another setting (Blakely et al. 1987; Leviton 2013). Alternative terms that might be used such as impromptu, in vivo, or in situ adaptations convey the sense that changes are often made spontaneously during intervention sessions, perhaps in reaction to unanticipated conditions (e.g., disruptive classroom events) or perceived needs of participants (e.g., misunderstood session content). Cultural adaptations and local adaptations differ on several dimensions. Cultural adaptations are developed prior to broad-scale implementation, are intended to reach populations (e.g., hypertensive African-Americans in Georgia's community health centers), and focus on cultural fit. Local adaptations are made just prior to or during intervention sessions, are directed at specific intervention sites (e.g., a

community, clinic, or classroom), and could be done to improve cultural fit as well as a number of other idiosyncratic considerations including lack of time or physical resources.

One perspective is that local adaptations are regarded as flaws in implementation fidelity, particularly when attributed to poor preparation, inattention to protocols, or deliberate disregard for fidelity standards. Blakely et al. (1987) quipped that *reinvention* might be regarded as “an unnecessary synonym for low-fidelity implementation” (p. 259). A contrasting perspective is that local adaptations provide windows into understanding (a) the limitations of an intervention’s uniform implementation as well as (b) ways for improving an interventions’ effectiveness and fit to local conditions (Chambers et al. 2013; Leviton 2013).

It is well known that deviations from complete fidelity are extremely common when prevention programs are implemented in community settings (Dusenbury et al. 2005; Hansen et al. 2013; Miller-Day et al. 2013). A study by Miller-Day and colleagues (2013) was particularly compelling because it assessed teachers’ local (classroom level) adaptations of a substance use preventive intervention through self-reports as well as with video recordings of in-class sessions. They found that teachers reported adapting 68 % of program lessons; observers found that 97 % of the lessons were adapted. Their own data and their review of many other studies led them to conclude that “adaptations to program models are the norm rather than the exception” (p. 325). A similar conclusion was reached by Hansen et al. (2013) after their appraisal of the literature. Those who implement interventions with ethnocultural participants might be particularly motivated to make local adaptations to improve cultural fit (Ringwalt et al. 2004). However, cultural characteristics of participants constitute only one of the several prominent reasons why local adaptations are done (Cooper et al. 2016).

There is some evidence that local adaptations can be related to favorable intervention outcomes (Blakely et al. 1987; Durlak and DuPre 2008; McGraw et al. 1996). Research conducted with seven different interventions, each implemented in ten different sites (for a total of 70 implementations) found that fidelity was correlated 0.38 with program effectiveness; degree of reinvention was correlated 0.33 with effectiveness, a nearly comparable relation (Blakely et al. 1987). Controlling for fidelity, additions to the program were correlated 0.26 with program outcomes, indicating that adaptations were associated with improvements in outcomes above and beyond the influence of fidelity. Analyses that drew a distinction between two local adaptation strategies found that additions of program components, but not modifications of standard components, were related to effectiveness. That finding suggests that both fidelity and adaptations could have positive effects on intervention outcomes—core program elements are implemented with fidelity, and adaptation needs are addressed with additions to program material. There are, in fact, systematic approaches for making adaptations while preserving core intervention components (Aarons et al. 2012; Lee et al. 2008).

A study of children’s health found that there was a positive relation between the percentages of teacher modified sessions and students’ dietary self-efficacy (McGraw et al. 1996). The researchers speculated that teachers’ local adaptations reflected their efforts to tailor the

intervention to students' needs and were possible indications of high teacher motivation. Other research suggests that teachers who made local adaptations to intervention content were better teachers than those who delivered the intervention with greater fidelity (Dusenbury et al. 2003). Leviton (2013) noted that experienced teachers and social workers were more effective when they made modifications based on the needs of students and clients. In one of the studies she cited, a modular approach that allowed therapist flexibility in the application of three manualized treatments was more effective than the standard administration of those treatments (Weisz et al. 2012).

Local Adaptation Typologies and Coding Systems

A more nuanced study of local adaptations would benefit from organizing adaptation efforts through typologies and coding schemes (Hansen et al. 2013; Miller-Day et al. 2013; Stirman et al. 2013). Recall that Blakely and colleagues (1987) used a basic tripartite typology that consisted of additions, modifications, and deletions of program components. That typology proved to be useful in determining that additions were associated with positive intervention outcomes, but modifications were not.

Other implementation coding systems are consistent with Blakely et al.'s typology as a starting place to quantify adaptation (Hansen et al. 2013; Hill et al. 2007; Miller-Day et al. 2013; Moore et al. 2013; Ozer et al. 2010; Sandler et al. 2015; Stirman et al. 2013). Several coding systems assessed "valence" or congruence—whether the adaptation was consistent with the intervention's goals—and quality (Hansen et al. 2013; Moore et al. 2013; Ozer et al. 2010; Sandler et al. 2015). For example, an in-depth study of nine middle school teachers (each with three classes) showed that high-quality local adaptations were related to positive drug prevention outcomes (Hansen et al. 2013). Similar to Moore et al.'s (2013) distinction between proactive and reactive adaptations, Berkel and colleagues (2016) also code whether an adaptation was initiated independently by the provider or in response to a participant need or concern, codes that might have special importance for local adaptations conducted with ethnocultural participants. It is worth noting that four papers concerned with local adaptation taxonomies were published in 2013. Thus, adaptation typologies are fairly recent developments (also see Dusenbury et al. 2005), which with few exceptions (Blakely et al. 1987; Hansen et al. 2013), have not been linked sufficiently with outcomes.

When those who implement interventions articulate their reasons for making local adaptations, they deepen our understanding of implementation barriers and limitations of intervention content and procedure. Similar to the work by Ringwalt et al. (2004), some have attended to the reasons why intervention implementers made local adaptations (Cooper et al. 2016; Hill et al. 2007; Miller-Day et al. 2013; Moore et al. 2013). With consistency across many interventions, the most frequently mentioned pragmatic reason for in situ adaptations was "lack of time" (Cooper et al. 2016; Hill et al. 2007; Miller-Day et al. 2013; Moore et al. 2013). Frequent substantive reasons for change were resistance from implementers, participant dissatisfaction, and cultural inappropriateness (Moore et al. 2013); students' attention spans, reading skills, and level of engagement with the intervention (Miller-Day et al. 2013); and participant attributes, which included their cultural characteristics (Cooper et al. 2016).

The analysis by Cooper et al. (2016) was uniquely informative because it examined the intersection between the local adaptation coding systems of Hill et al. (2007) and Moore et al. (2013). Cooper et al. were able to determine the extent to which adaptations coded as additions, changes, and deletions (from Hill et al. categories) were positively or negatively aligned with the intervention's theory (from Miller et al. categories). Results showed that deletions were overwhelmingly negative, i.e., out of alignment; additions and changes were approximately equally categorized as positive or negative. Also, adaptations made because of "not enough time" were almost always reactive (in response to an unexpected event during a session); adaptations made because of participant characteristics (e.g., culture) were predominantly proactive (prior to a session to potentially improve the lesson).

In summary, evidence-based interventions, even those that are culturally adapted, routinely receive local adaptations by intervention implementers. A number of coding systems have been developed, providing essential methods for the systematic study of local adaptation dimensions. There is some indication that local adaptations can improve intervention effects, but there is the need for more research that connects adaptation-coding categories to outcomes of specific interventions implemented in specific contexts. Information gleaned from local adaptation evaluations should inform the further refinement of cultural adaptations by identifying common ways interventions are modified to address the core needs of members of an ethnocultural group and then training implementers to make adjustments that have the greatest chances of improving intervention fit and effectiveness.

Engagement

One of the motivations for cultural adaptations of preventive interventions, either planned or local, is to improve participant engagement (responsiveness), which includes attendance, satisfaction, in-session participation, and use of program skills (Berkel et al. 2011). Surface structure (e.g., use of culture congruent images) and deep structure (e.g., content of messages) adaptations (Resnicow et al. 2000) used in program materials are intended to welcome members of ethnocultural groups into a program that is sensitive to their needs, encouraging their full participation in an experience that they perceive as designed for them. Two main questions organize the following section on cultural adaptation and participant responsiveness: (a) is there evidence of poor engagement for members of ethnocultural groups, indicating a need for cultural adaptation? and (b) have cultural adaptations specifically targeted engagement and have these efforts been successful in improving engagement?

Ethnocultural Differences in Multiple Dimensions of Engagement

Attendance—Attendance is a frequently examined indicator of engagement and is generally predictive of intervention outcomes (Durlak and DuPre 2008). It has been measured in multiple ways, and each can add to our understanding of what works in engaging members of ethnocultural minority groups. Low rates of enrollment can illuminate logistical barriers that some groups disproportionately face, and they can also give clues about the effectiveness of the "packaging" of the program, an element of surface structure. Conversely, retention over time can signal logistical barriers and surface structure

appropriateness and also indicate how well the program content meets the needs and values of participants. Consequently, we examined studies reporting comparisons by race and ethnicity for any type of attendance, including enrollment, retention, or overall amount of sessions attended.

Enrollment—One large-scale study examining attendance in school-based programs to prevent mental health problems among six ethnocultural groups in California found that Asian students were less likely to enroll in school-based mental health prevention than other ethnocultural groups (Anyon et al. 2014). Baker et al. (2011) assessed enrollment in the Incredible Years program and found that African-American and Puerto Rican families were less likely to enroll than non-Latino white families. Perrino and colleagues (2001) also found that Latinos were more likely to be initially engaged (attended at least one of the first three sessions) in a parenting program than were African-Americans. These studies demonstrated that evaluations of intervention engagement often show ethnocultural group differences in engagement that indicate the possible need for cultural adaptations to achieve greater engagement equity (c.f., Du Bois et al. 2012).

Global Attendance—A meta-analysis of parent-training programs found that minority group status was associated with a number of different measures of attendance (Reyno and McGrath 2006). On the other hand, some studies have found no effect of ethnocultural group on attendance rates (e.g., Dumas et al. 2007; Smith et al. 2014). Overall, attendance disparities appear lower than in the past two decades when attendance for minority group participants was one third of the rate for the majority (Kumpfer et al. 2002). This might indicate that developers are now paying more attention to cultural context.

Retention—Few studies have focused on participant retention patterns over time. An innovative study examined patterns of retention for Spanish and English-speaking Latino families (Mauricio et al. 2014). Familism values and group cohesiveness, which were higher among Spanish-speaking families, differentiated those families who stayed in the program from those who dropped out. Ethnocultural group differences in retention need greater research scrutiny to determine if cultural adaptation efforts should be devoted to this aspect of engagement.

Satisfaction—The literature that examines participant satisfaction across ethnocultural groups is too limited to draw definite conclusions, but there are a few reports of such differences. In the Parents Who Care (PWC) program, Haggerty and colleagues (2007) found higher levels of satisfaction for this intervention on the whole and intervention materials for African-American relative to white adolescents. Information about the cultural adaptation of this program was not provided other than that groups were usually led by one white and one African-American facilitator. A national evaluation of 12 programs funded by the Center for Substance Abuse Prevention (CSAP) found that African-American youth reported higher satisfaction than Native American, Asian, Latino, white, or other group members (Chipungu et al. 2000). One study compared four ethnocultural groups on satisfaction across a range of intervention components such as program leaders, skills that were taught, and telephone contacts (Reid et al. 2001). Different patterns of group

differences were found for satisfaction with the various components. When ethnocultural group differences in satisfaction are observed for specific preventive interventions and their subparts, they signal the opportunity to initiate cultural adaptations that might result in more comparable satisfaction levels.

In-Session Participation—Three studies were identified that assessed differences in active participation within program sessions. In two, white parents scored higher on active participation than members of the ethnocultural minority groups (Nix et al. 2009; Orrell-Valente et al. 1999), whereas in the third, no subgroup differences were found (Dumas et al. 2007). It might be that ethnocultural differences are influenced by SES in multivariate models; the effects of parent education and occupation attenuated the effects of race (Nix et al. 2009). Another explanation is that being a member of an ethnocultural minority group in a program led by majority group facilitators might lead to low levels of trust, which could inhibit active participation and disclosure of personal information (Orrell-Valente et al. 1999).

Home Practice—Many programs assign home practice activities for participants to complete between sessions (e.g., Clarke et al. 2013; Schoenfelder et al. 2012). Use of program skills in daily life is one of the most important indicators of responsiveness to the intervention and constitutes the most proximal indicator of implementation for attaining program outcomes (Berkel et al. 2016). Nix et al.'s (2009) measure of active participation included an item that assessed engaging in home practice. Total participation scores were higher for non-Latino white participants; however, differences on the home practice item were not analyzed separately. One study demonstrated that African-American and Latino adolescents were less likely to complete the home practice assignments in a parent-child communication program for sexual risk behavior (Blake et al. 2001). Thus, there is some limited evidence that African-American and Latino participants were less engaged in home practice for specific interventions compared to white participants.

Have Cultural Adaptations Efforts Been Successful in Increasing Responsiveness?

A randomized controlled trial in which a culturally adapted intervention is tested against the original provides a strong test of the adaptation's ability to increase engagement and program outcomes. A trial examined the relative effectiveness of three intervention conditions: (a) a Parent-Child Interaction Therapy (PCIT), (b) a culturally adapted version designed for Mexican-American families (GANAS), and (c) treatment as usual (TAU) (McCabe and Yeh 2009). It is found that the original PCIT and GANAS were equivalent as assessed on intervention satisfaction, rates of family dropout, and rates of mothers' attendance. Fathers in the GANA condition attended nearly twice as many sessions, although the difference was not statistically significant. Several design and implementation factors may have contributed to the absence of differences in effects across study conditions. These factors include the following: (a) a small overall sample size, (b) ceiling effects for satisfaction in both GANAS and PCIT, and (c) possible in situ cultural adaptation of the PCIT condition due to contagion effects (the same providers delivered both conditions) and due to ethnic matching (all providers were bilingual Mexican-American).

Beyond this experiment, evidence from comparative trials on responsiveness is limited, perhaps because some consider it to be impractical or unethical to randomize members of ethnocultural minority groups to a condition that is not optimized for their group when one is available (Cardemil 2010; Kumpfer et al. 2002). Observational studies, however, can provide some important insight into this question. Kumpfer and colleagues (2002) reported the effects of cultural adaptations of the Strengthening Families Program on attendance based on 27 studies of variations that were adapted for several ethnocultural groups including the following: rural and urban African-Americans, Asian/Pacific Islanders, Latinos, and American Indians. Findings involving the effects of the adapted version relative to the original version suggested the presence of improvements in engagement, with recruitment and retention rates being an average of 41 % better in the adapted version. Rates of engagement decreased in only one study in which program developers were not involved, and where some core content was eliminated.

In the analysis of satisfaction within adapted programs, a national evaluation of CSAP programs demonstrated that African-American youth in programs specifically adapted or designed for African-Americans reported higher levels of satisfaction and were more likely to describe the program as relevant and important for their daily lives, when compared to the unadapted programs (Chipungu et al. 2000). Another research strategy is to compare rates of engagement for the culturally adapted versions to rates in the original effectiveness trials. For example, one study found slightly lower rates of attendance and satisfaction in a culturally adapted version of Triple P for Indigenous Australian families when compared to rates in the original effectiveness trials (Turner et al. 2007). Such comparisons can be problematic if recruitment and retention methods vary across trials. Therefore, results from those comparisons should be interpreted with caution.

Sustainability

Sustainability can be defined as the capacity of an intervention to be continued by systems of care such as schools, medical practices, or community agencies, particularly after the withdrawal of initial outside funding (Glasgow et al. 1999; Rabin et al. 2008). At least 11 different terms such as “maintenance,” “continuation,” “durability,” “institutionalization,” and “routinization” also have been used, but “sustainability” has been the most prominent (Johnson et al. 2004; Wiltsey Stirman et al. 2012). Sustainability is thought to be influenced by characteristics of the institution, program implementers, community support, as well as the intervention itself (Cooper et al. 2015).

A conceptual paper that introduced the dynamic sustainability framework explained the somewhat paradoxical connection between adaptations (change) and sustainability (stability) following implementation (Chambers et al. 2013). The paper’s authors argued that post-implementation adaptations should strive to boost sustainability by improving program quality and fit with an institution and its community context. They challenged the conventional program development process: establish efficacy under optimal conditions, freeze program content and methods, and implement the program in diverse settings with procedures that aim for complete fidelity to the pre-implementation product. Such

conventional practices lack adaptation procedures for continuous intervention improvement, which are viewed as critical for sustainment within dynamic (changing) conditions.

It is understandable that serious attention to sustainability followed periods when research on the development and efficacy of preventive interventions were the priorities. However, there has been sufficient published research and conceptual work to support substantive literature reviews (Scheirer 2005; Wiltsey Stirman et al. 2012). A review of 125 qualitative and quantitative studies of sustainability of health, mental health, and educational interventions found that parts of interventions were more likely to be sustained than complete interventions, and studies that assessed sustainability with observer ratings showed that less than 50 % of providers sustained interventions at high levels of fidelity (Wiltsey Stirman et al. 2012). In their summary of factors associated with sustainability, Wiltsey Stirman et al. (2012) wrote, “Not surprisingly, among the innovation characteristics that were identified, the fit of the program or intervention with the system or organization and the degree to which the intervention or program could be modified were most common” (p. 9). That statement was consistent with the contention that intervention modifications, including cultural adaptations, can increase the probability that programs are sustained, but that contention has not been tested adequately.

One study sought to identify predictors of sustainability for 77 delinquency and violence prevention programs that had received seed grant funding (Cooper et al. 2015). Programs completed several waves of assessments that spanned implementation and the period following the cessation of funding. Assessments of predictors covered four domains: (a) organizational support for program implementation (such as support from community coalitions), (b) program fit with the organization (including the program’s cultural appropriateness), (c) implementer characteristics (including knowledge of the program’s logic model), and (d) sustainability planning. Sustainment, defined as the continuation of program implementation at least 2 years following the termination of the start-up funding, was determined in the final assessment. Results showed that 69 % of organizations sustained programs, but 58 % of those sustained were continued at reduced levels. The authors concluded that “Overall, we found that organizational support for program implementation (connection to a high functioning coalition, outreach to community stakeholders); better program fit (i.e., lack of reasons for changing the program model); knowledgeable, well-trained program implementers; and sustainability planning are key predictors of sustainability across program type” (p. 9). The item on cultural appropriateness was not related to sustainability in any of the analyses, but there was limited statistical power and only brief assessment of cultural fit.

Future research should be directed specifically at the possible role of culturally adapted interventions in boosting sustainability and, more generally, on the characteristics of interventions, institutions, and implementers that influence sustainability. Hypothetically, if cultural adaptations increase perceived fit and effectiveness, organizations should be motivated to sustain intervention efforts, particularly if they can be adapted further to fit organizations’ resources of money, time, and people. That hypothesis has not been tested sufficiently. Evaluation approaches described by Cooper et al. (2015) and by Mancini and Marek’s (2004) Program Sustainability Index (PSI) are valuable resources for this future

research, yet both approaches would benefit from greater coverage of culturally adapted interventions.

Recommendations

Culturally adapted interventions have the potential to increase participant engagement, intervention efficacy, adoption by community systems of care, and sustainment. In a quote attributed to Rogers (1993), Swisher (2000, p. 970) noted that “programs must be ‘adaptable’ in order to be ‘adopted.’” Furthermore, Swisher asserted that interventions are more likely to be sustained when they are adapted to fit an agency’s usual pattern of functioning. Because of the numerous ways cultural adaptations can influence implementation and dissemination, it is imperative to advance their study. Within the context of efforts at scaling up by promoting the *adoption* of evidence-based prevention interventions (Spoth et al. 2013), the process of *adaptation* should not be conceptualized as an inherent detriment to fidelity. It is an effort to promote greater participant engagement and more effective intervention implementation within each unique community and its residents. From our assessment of the recent literature, several recommendations are proposed.

For Conducting Local Adaptations

Recommendation: Cultural adaptation stage models (see Castro et al. 2010) should be expanded to include a late-stage implementation phase when local adaptations are assessed. After interventions are culturally adapted, they should be evaluated continuously as they are implemented and locally adapted.

Recommendation: Existing systems for coding local adaptations should be used to evaluate key categories, especially adaptation strategies (additions, changes, deletions), timing (reactive or proactive), and intervention theory congruence (see Cooper et al. 2016).

Recommendation: Connecting categories of local adaptations to intervention outcomes should be a priority research topic. That information would promote data-driven decisions in teaching intervention implementers about the types of local adaptations that appear to boost intervention effectiveness.

Recommendation: There is a need for program developers to offer strong evidence- or theory-based recommendations that identify core components of their interventions. Because studies show that intervention elements are often deleted during local adaptations, implementers should know which components should not be dropped and those that are more discretionary.

For Promoting Engagement

Recommendation: To understand if a program is equitably engaging the population, efforts should be made to test engagement across as many relevant subgroups as possible. These studies should report multiple dimensions of engagement including enrollment, attrition, program exercises completed, and total sessions attended to foster an understanding of the unique mechanisms that affect these various indicators of consumer involvement.

Recommendation: Both planned and local cultural adaptation strategies should be categorized (coded) to determine what types of adaptations are effective in increasing engagement, and whether certain strategies are more effective in enrolling participants and encouraging them to remain in the intervention.

Recommendation: Because ethnocultural groups are not homogeneous, measures related to culture, such as cultural values might help explain within-group variation in engagement (Dillman Carpentier et al. 2007; Mauricio et al. 2014).

Recommendation: When possible, trials should be conducted to empirically test the effects of cultural adaptations on engagement. A variety of study designs may be used to address the ethics of randomizing individuals to versions that are not optimized for their groups, such as designs that compare finding to previous trials (making sure to hold recruitment methods as constant as possible) or designs that test individual components of the program (Collins et al. 2016).

Recommendation: Mediation and moderation analyses should be conducted to assess the pathways from cultural adaptation to outcomes as potentially influenced by dimensions of participant responsiveness, and whether these differ across ethnocultural groups.

For Increasing Sustainability

Recommendation: Research is needed to determine if cultural adaptations result in greater sustainability. Some but not all cultural adaptations include initial steps in which agency personnel and community stakeholders provide input into the design of interventions and modes of delivery to ethnocultural communities. Coding to capture degree of collaboration with agency and community stakeholders during cultural adaptation stages should be included in studies of the relations between sustainability and cultural adaptations.

Recommendation: Institutions are more likely to sustain portions of interventions (Wiltsey Stirman et al. 2012) and reduced intensity interventions (Cooper et al. 2015) than they are to sustain the original, full intervention. The admonition of preserving core components while adding components to increase cultural fit runs counter to the push for briefer interventions. One of the many challenges will be creating cultural adaptations that are efficient, optimizing reach and sustainability, yet still affecting meaningful prevention outcomes. More attention should be given to cultural adaptations of adaptive intervention designs (Collins et al. 2004), which selectively provide just those intervention components indicated by need-based decision rules and technology-mediated interventions (Bennett and Glasgow 2009).

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