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A scoping review of cultural adaptations of substance use disorder treatments across Latinx communities: Guidance for future research and practice

Kamilla L. Venner, Ph.D.[a,*], **Alexandra Hernandez-Vallant**[b], **Katherine A. Hirchak**[c], **Jalene L. Herron**[a,b]

[a]University of New Mexico, MSC03 2220, Albuquerque, NM 87131, United States

[b]University of New Mexico, Center on Alcohol, Substance Use, and Addictions, United States

[c]Washington State University, Elson S. Floyd College of Medicine, United States

Abstract

Introduction: Much of the substance use disorder (SUD) treatment efficacy and effectiveness research is lacking consensus on which scientifically rigorous approach to employ for culturally adapting evidence-based treatments (EBTs) and evidence-based preventions (EBPs) for SUDs among Latinx communities. The aim of this paper is to provide a scoping review of the literature on cultural adaptations of SUD treatment for Latinx communities.

Methods: We examined the justifications for cultural adaptations, processes of adaptations, cultural adaptations described, and efficacy and effectiveness of culturally adapted SUD interventions. The study followed Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA). Inclusion criteria consisted of whether the intervention had been culturally adapted based upon an existing EBT or EBP for SUD. Through the search of four databases, expert knowledge and reviewing the reference list of applicable articles, 30 articles met inclusion criteria, which included 14 treatment or prevention outcome articles, one single group pre-post study article, and 15 methods papers on cultural adaptations. Justifications for cultural adaptations centered on SUD health inequities among Latinx populations.

Results: Four research groups employed adaptation models to culturally tailor evidence-based interventions and most often used elements of community-based participatory research (CBPR). Using Bernal, Bellido, & Bonilla's (1995) Ecological Validity Framework of eight dimensions, the most common cultural adaptations centered on language, context, content, and persons. Efficacy

[*]Corresponding author at: Kamilla L. Venner, Ph.D., 1 University of New Mexico, MSC03 2220, Albuquerque, NM 87131. kamilla@unm.edu.

CRediT authorship contribution statement

Kamilla L. Venner: Conceptualization, methodology, validation, formal analysis, investigation, resources, data curation, writing original draft, writing review and editing, supervision, project administration

Alexandra Hernandez-Vallant: Conceptualization, methodology, validation, formal analysis, investigation, data curation, writing original draft, writing review and editing

Katherine Hirchak: Conceptualization, methodology, validation, formal analysis, investigation, data curation, writing original draft, writing review and editing

Jalene Herron: Conceptualization, methodology, validation, formal analysis, investigation, data curation, writing original draft, writing review and editing supportive role

trials with Latinx populations are nascent though growing and reveal: (1) significant time effects for EBTs and most EBPs, (2) superior SUD outcomes for culturally adapted EBTs compared to standard EBTs or other comparison conditions by three research groups, (3) significant prevention intervention effects by three research groups, and (4) significant cultural or social moderators by two groups suggesting Latinx with higher cultural identity, parental familism, or baseline discrimination improve significantly more in the culturally adapted EBTs.

Conclusion: These findings suggest that the science of culturally adapting EBTs is improving in rigor with the use of models to guide the work and the conduct of clinical trials. Measurement of cultural and social variables allows for tests of moderation to understand for whom cultural adaptations are most effective. Future hybrid efficacy/effectiveness trials and implementation research should continue moving the science of cultural adaptation forward.

Keywords

Evidence-based interventions; Latinx; Substance use disorder; Cultural adaptation; Review

1. Introduction

By 2045 the United States is projected to become a “minority-majority” nation with Latinx people representing nearly 50% of the population (Frey, 2018), yet clinical psychology is not keeping pace with this diversification in terms of appropriate psychological treatments. Latinx people represent the largest non-Latinx[1] White ethnocultural group, currently representing about 18% of the U.S. population (U.S. Census Bureau, 2019). Thus, focusing on evaluating the efficacy of psychological interventions for the Latinx population can provide specific guidance for this group and set the foundation for other ethnocultural groups. The American Psychological Association's (APA) (2003, 2017) multicultural guidelines encourage provision of effective treatments for all; however, whether evidence-based treatments (EBTs) and evidence-based preventions (EBPs)[2] are in fact evidence based for ethnocultural groups other than non-Latinx Whites (NLWs) warrants further empirical investigation. Participants in efficacy and effectiveness studies have mostly been NLW (Mak et al., 2007; Schick et al., 2020), suggesting the treatments have not been evaluated sufficiently with other ethnocultural groups to meet real-world external validity of the diversifying public (Bernal & Scharrón-del-Río, 2001; Bernal et al., 2009; Eghaneyan & Murphy, 2020; Eghaneyan et al., 2020; Hall, 2001; Miranda et al., 2005).

Importantly, prevalence of substance use disorders (SUDs) and their consequences differ across ethnocultural group (e.g., Chartier & Caetano, 2010). For example, Latinx women report the lowest prevalence of drinking alcohol while Latinx men often fall in between

[1]The U.S. Latinx population is diverse and intersectional. Latinx people may differ with respect to nation of origin, generational status, language, phenotype, cultural and spiritual practices, and in other ways. Additionally, terminology has shifted over time to be both more inclusive and more reflective of the way people identify. As such, we have selected to use the term Latinx throughout this manuscript with the acknowledgement that Latinx people may identify more strongly with their nation of origin or other panethnic terms. Additionally, in this manuscript we review culturally adapted evidence-based interventions that were adapted for Latinx people whose heritage is rooted in Latin American and not Spain.

[2]While there are many terms for discussing interventions with scientific evidence, we use evidence-based treatment and evidence-based prevention to highlight the strength of the evidence for these treatments based on controlled trials and to be in line with researchers who are interested in integrating prevention and treatment with considerations of culture.

NLW adults and Black men in terms of their drinking (e.g., Chartier & Caetano, 2010.) Although Latinx populations exhibit similar rates of SUDs as NLW populations (U.S. Department of Health and Human Services, 2013), Latinx suffer disproportionate substance use–related negative consequences in health and social outcomes, such as HIV, alcohol-related mortality, social consequences, and intimate partner violence (Eghaneyan & Murphy, 2020; Morales-Alemán et al., 2014; Mejia de Grubb et al., 2016; Ramos et al., 2019). Few studies have examined the effectiveness of interventions in diverse ethnocultural adult groups, with some notable exceptions (Lee et al., 2013; Lee et al., 2016; Venner et al., 2016; Venner et al., 2020). These are outnumbered by studies of secondary analyses of larger randomized controlled trials (RCTs) to test efficacy or effectiveness for Latinx populations of a given intervention. For example, Arroyo et al. (2003) found that two EBTs (i.e., Motivational Enhancement Therapy and Cognitive Behavioral Therapy [CBT]) were similarly effective for Latinx and non-Latinx participants but that Latinx adults fared worse in Twelve-Step Facilitation. Similarly, in a meta-analysis of cognitive behavioral therapy effectiveness, Windsor et al. (2015) found that effect sizes for comparing effectiveness of standardized delivery of CBT to other treatments was similarly effective for NLW, Latinx, and Black participants. However, pre-post effect sizes were larger for the NLW compared to the Latinx/Black samples, indicating that standard CBT may be more effective for individuals identifying as NLW.

The evidence supporting stronger treatment effect sizes for NLW individuals has been mixed. For example, Benuto and O'Donohue (2015) reviewed the literature and concluded that standard SUD EBTs are effective for Latinx individuals with little evidence of need for cultural adaptation. However, the review did not address the potential problem of self-selection bias. Individuals participating in standard EBT RCTs may represent an acculturated group with fluency in English and may not generalize to other subgroups of Latinx individuals. Furthermore, prior to the year 2003, most studies were not designed to test efficacy of SUD interventions with Latinx populations. Thus, focusing on efficacy and effectiveness trials of culturally tailored SUD EBTs and EBPs for Latinx individuals can inform future research in this area and address the needs of the growing U.S. Latinx population.

1.1. Cultural adaptations

Culturally adapting EBTs and EBPs has been the predominant method of increasing engagement, retention, and acceptability among Latinx populations. A cultural adaptation is a “systematic modification of an EBT or intervention protocol to consider language, culture, and context in such a way that it is compatible with the client's cultural patterns, meaning, and values” (Bernal et al., 2009, p. 362). Cultural adaptations better meet the needs of specific populations, address social determinants of health, and address social factors such as structural racism and discrimination (e.g., Helms, 2015). Multiple efforts have sought to provide frameworks outlining systematic modifications to culturally adapt EBTs that range in specificity and depth. Burlew et al. (2013) provided eight reasons to culturally adapt EBTs for SUD: when the EBT is (1) less effective; (2) harmful; (3) unacceptable; or cultural adaptation would (4) increase attractiveness and engagement; (5) improve retention; (6)

improve outcomes; (7) acknowledge the influence of culture on behavior; or (8) demonstrate respect for the cultural group, knowledge, and worldview.

Cultural adaptations of EBTs can be conceptualized on a spectrum from surface level to deep structure adaptations (Resnicow et al., 1999). Surface level adaptations include bilingual materials; use of culturally appropriate pictures and symbols on materials; and inclusion of ethnic lifestyle elements, such as foods, music or culturally familiar activities such as dancing or games in the content of the intervention (Bernal & Domenech Rodríguez, 2013). Deep structure adaptations include changes to core aspects of the intervention, so the intervention may be more congruent with the lived experience of individuals from the target culture (e.g., incorporating cultural strengths, norms, and protective factors; Burlew et al., 2013). To date, consensus is lacking regarding the most scientifically rigorous approach to culturally adapt EBTs.

Evaluating efficacy studies of psychological interventions for specific populations can also address challenges that exist in culturally adapting EBTs and EBPs. A universalist approach argues that an intervention should be delivered as designed regardless of the ethnocultural group (Elliott & Mihalic, 2004). However, the universalist approach is untenable for many communities that differ from the U.S. mainstream in terms of their worldview, cultural traditions, and practices in that they may reject a purely westernized approach to treatment. Additionally, Latinx communities disproportionately experience barriers to accessing and completing treatment, ranging from knowledge about existing interventions to inability to access mental health care due to structural factors (e.g., lack of insurance, lack of reliable transportation; Saloner & Lê Cook, 2013).

Other concerns arise when cultural adaptations are made. Barrera et al. (2017) discuss the tension between maintaining fidelity of the intervention to preserve the evidence-based mechanisms of behavior change that have maintained or improved client outcomes. For example, in a study evaluating the efficacy of an evidence-based parenting intervention with Latinx individuals, the cultural adaptations included translation into Spanish and adding cultural material while omitting session material from the EBT. Findings indicated that those cultural adaptations led to increased completion rates but decreased effectiveness compared to the original EBT's primary outcomes (Kumpfer et al., 2002).

1.2. Models for cultural adaptation

Models for cultural adaptation of EBTs have proliferated since a pivotal article by Bernal et al. (1995) explicated the ecological validity model (EVM). They provide eight dimensions to describe types of cultural adaptations. Additionally, Domenech Rodríguez et al. (2011) are credited with one of the few articles illustrating the process of cultural adaptation for an evidence-based intervention. They described nine models for cultural adaptation, highlighting the growth in this field over the last few decades. However, the actual process for culturally adapting EBTs remains vague. Chu and Leino (2017) developed the Cultural Treatment Adaptation Framework (CTAF), a comprehensive model encompassing efforts to engage clients and core and peripheral adaptations to the treatment and treatment outcomes. However, their model focused on mental health treatments and excluded both addiction treatment and Indigenous interventions.

1.3. Current study

Study goals are to comprehensively scope the body of literature on cultural adaptations of SUD EBTs and EBPsfor Latinx populations; to examine the process or the "how" of cultural adaptation (e.g., models of cultural adaptation); describe specific types or the "what" of cultural adaptations executed (e.g., content, context); and report on efficacy of culturally adapted interventions. Scoping reviews are useful to describe how research is conducted on a specific topic, to clarify key concepts such as cultural adaptations, identify key characteristics of that concept such as cultural adaptations, and identify gaps in the literature to inform future research directions (Munn et al., 2018). Although Latinx cultural groups vary widely (e.g., language, spiritual and cultural practices, and health beliefs), comparing and contrasting cultural adaptations across Latinx groups should lead to specification of cultural adaptations commonly made across subgroups. This review will illuminate the justifications made for cultural adaptations, processes by which cultural adaptations are made, efficacy of culturally adapted interventions, and gaps in the literature to provide recommended best practices in cultural adaptation research in pursuit of improving the science of cultural adaptations, with a focus on Latinx communities.

2. Methods

2.1. Search strategy

We followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA; Liberati et al., 2009; Rathod et al., 2018). The team queried PubMed, PsychInfo, and Google Scholar for relevant articles and completed the literature search in August 2020. To broaden the number of potential articles, we did not specify a publication time period. The team limited the search to articles written in English but included research conducted in South America. Keyword search and search terms included: cultural adaptation, evidence-based treatment, evidence-based practice, alcohol and substance use disorder treatments, Latinx, Latino, Latina. We included only articles that discussed tailoring, re-centering, and culturally adapting evidence-based substance interventions for Latinx communities. Inclusion criteria were whether the intervention had been culturally adapted based on an existing EBT or EBP (Chambless & Hollon, 1998) for SUD or culturally grounded (e.g., Okamoto et al., 2014) and that were developed based upon the values, beliefs, and worldviews of the particular racial/ethnic population interventions and had a substantive evidence base for their efficacy and generalizability. The review broadly defined cultural adaptations for Latinx. For example, if the intervention was initially developed for Latinx, but the intervention was further tailored to other Latinx communities or to enhance the retention of participants, the team included the article in the review (e.g., Marsiglia, Medina-Mora, et al., 2019). Exclusion criteria consisted of papers focused on etiology or epidemiology. Because we were reviewing cultural adaptations of evidence-based interventions that were developed in predominantly NLW samples, interventions that were culturally grounded (e.g. curanderismo and other healing practices) without a substantive evidence base were outside the scope of this paper. Further, we examined the reference lists of articles that matched our initial search criteria in addition to articles that were already identified by the research team due to previous knowledge, expertise, or they were known

to be seminal works or important meta-analyses (Hai et al., 2021; Hall et al., 2016; Huey & Polo, 2008).

2.2. Search results

The Latinx adult SUD treatment literature query resulted in 49 articles. The team narrowed the final number of articles included in our review to 30 articles, inclusive of cultural adaptations and efficacy or effectiveness trials that included results on cultural adaptations. Fifteen articles focused on cultural adaptations. Of these articles on cultural adaptations, 3 articles focused on youth only, 10 articles involved only adults, and 2 articles included both youth and parents. In terms of outcome studies (n = 15), there are 6 RCTs (represented across 8 articles, 5 for adult and 3 for youth), one single treatment group design article (adults), and 6 prevention trials (6 articles; 4 for youth; 1 for parents and youth; 1 for parent only) comparing culturally adapted interventions to either standard intervention or an intervention-as-usual. The team excluded nineteen articles from the review, which included those with no cultural adaptations (n = 5), no evidence-based intervention (n = 3), main outcome not substance related (n = 3), provider focused (n = 3), a systematic review (n = 2), one dissertation, one culturally grounded intervention, and one on retention and engagement.

2.3. Coding categories

We then coded the articles for specific domains. The study team also noted study design and demographic variables, including gender, age, urban or rural. The team also coded the substance of misuse and whether the study reported treatment outcomes. Most of the articles were not outcome papers. We also coded for potential moderators and mediators, although this was also rarely discussed in the articles reviewed. Finally, we coded for whether the adapted intervention had been compared to the original intervention.

Coding also focused on how cultural adaptations were made and which specific adaptations were included. To specify the processes employed to guide cultural adaptations, we coded whether the study used a model and named the model. To achieve our aim of describing the types of cultural adaptations made, we based coding on the Ecological Validity Model (EVM; Bernal et al., 1995), which includes eight dimensions: language, persons, metaphors, content, concepts, goals, methods, and contexts. Out of the cultural adaptation models, the EVM is the most specific about listing various types of cultural adaptations, whereas the other models are broad and categorical. The team coded language if Spanish was in anyway integrated into the intervention. Persons could include community members or elders delivering the intervention or when providers were bilingual. Metaphors referred to the adapted treatment including cultural symbols, storytelling, or allegories. The team identified content when the study delivered traditions, cultural knowledge, or values. We coded concepts when Latinx cultural concepts were integrated into the treatment (e.g., interdependence versus interdependence). The study team identified methods if Community-Based Participatory Research (CBPR) was used, other culturally appropriate processes, or if culturally adapted measures were utilized. We defined goals as when cultural values were intentionally integrated into treatment planning. Finally, we coded context when community history or historical aspects were identified and became a part of the treatment delivered,

including changes to assessments and intervention delivery context (e.g., immigration status or delivering services at a local community organization).

3. Results

From our review of the literature on cultural adaptations of SUD EBTs and EBPs for Latinx populations, we present: (1) justifications used to conduct cultural adaptations; (2) processes used to carry out those cultural adaptations; (3) domains of the EVM addressed by cultural adaptations; and (4) the intervention outcomes in the trials conducted. Overall, justifications centered on substance-related health inequities, processes often involved a model for cultural adaptation or a CBPR approach. The most common EVM domains that studies addressed were language, content, context, and methods. Further, the outcomes involved intervention effects with some evidence of moderation by cultural and structural variables.

3.1. Justification

The justifications for culturally adapting SUD interventions for Latinx youth and adults have typically involved identifying health inequities and areas of risk for Latinx subgroups (e.g., Dietz et al., 2018; Lee et al., 2006; Lee et al., 2016). Other justifications included that most EBTs are developed and tested on predominantly NLW samples, as well as using previous literature to identify ways to improve the cultural relevance of the intervention content and process (e.g., including family, importance of culture, and using technology to improve engagement; Estrada et al., 2019). Research has found Latinx people to be “at-risk” for developing problematic alcohol and/or substance use or to be currently engaging in problematic heavy drinking in high-risk situations. For example, evidence that Latinx middle schoolers used drugs at higher rates in a Miami-area suburb served as a justification for adapting a technology-delivered parenting intervention for Latinx parents to increase engagement and retention in an existing EBT (Estrada et al., 2017). Other studies identified similar rationale for the adaptation of school interventions for Mexican American adolescents (Hecht et al., 2003) and Latinx adolescents (Estrada et al., 2019). Justifications for cultural adaptations of EBTs for adult Latinx men have been made by multiple research teams (Dietz et al., 2018; Lee et al., 2006, 2013; Lee et al., 2016; Lee et al., 2019; Ornelas et al., 2019) that have cited the increased rates of alcohol use disorder (AUD), longer persistence with symptoms of AUD, higher rates of symptom recurrences, and more severe consequences of drinking among Latino males compared to their non-Latino counterparts.

Other justifications for Latinx intervention adaptations reviewed included a need to integrate family members into the intervention and the positive impact of cultural values on prevention of substance misuse in Latinx adolescents. To this end, some interventions specifically engaged parents (Estrada et al., 2019; Vega-López et al., 2020). Evidence also exists that Latinx parents were more likely to seek treatment within primary care settings (Bridges et al., 2012; Mulia et al., 2009; Vega et al., 1999), which is another specific impetus for cultural adaptations of EBTs (e.g., screening and brief intervention; Ornelas et al., 2015). The positive impact of cultural factors (e.g., ethnic identity, familism and acculturation) on substance use outcomes among Latinx youth has also been noted as another reason to culturally adapt EBTs (Burrow-Sanchez et al., 2015).

3.2. Process

The process used to culturally adapt EBTs and EBPs for SUDs for Latinx communities has varied to include language translation, aspects of CBPR, qualitative methods, and models for cultural adaptation. As a whole, these adapted SUD EBTs were often, but not exclusively, available in Spanish (e.g., Lee et al., 2019; Ornelas et al., 2015, 2019; Paris et al., 2018; Serrano et al., 2018; Torres et al., 2020). Additionally, studies used a spectrum of community engaged methodology to adapt interventions. These ranged from community engaged practices (e.g., “community based” recruitment; Hecht et al., 2003; Lee et al., 2006; Martinez & Eddy, 2005; Ornelas et al., 2015) to more formal CBPR (e.g., co-developing the research) such as utilizing a Community Advisory Board (Field et al., 2019).

Some studies employed qualitative methods, such as interviews and focus groups, that yielded guidance for what needed to be adapted or how the intervention should be delivered (Dietz et al., 2018; Torres et al., 2020; Ornelas et al., 2015). Ornelas et al. (2015) utilized a process of adaptation in which they conducted in-depth interviews with Latinx immigrant day laborers and service providers who routinely served this population. Interview questions for the day laborers covered occupational and demographic information as well as queries related to values, coping strategies, and attitudes about the screening and brief intervention. They also included questions related to alcohol use, such as drinking patterns and causes and consequences for drinking (Ornelas et al., 2015). Further, the study asked service providers questions regarding their professional scope, their clinical observations of Latinx substance use, community needs, and their thoughts about the acceptability of the intervention for Latinx immigrant day laborers. That team used these qualitative interviews to improve the acceptability of the screening, brief intervention, aspects of the intervention delivery, and structural level factors that were amenable to adaptations of the intervention.

Other studies reviewed also included increasing the cultural and social relevance of psychometric tools or qualitative interviews. For example, studies included measures in the design to better address the cultural values of Latinx people and families. Additionally, some studies also included an assessment of structural factors at the individual level, such as including measures of experiences with discrimination. Research has found cultural values and structural factors to interfere with treatment seeking behavior, access to treatment, and engagement and retention in treatment (Lee et al., 2013; Whaley & Davis, 2007). Four research groups included in this review reported using a model for cultural adaptation. Lee et al. (2006, 2013; Lee et al., 2016, 2019; Lee et al., 2020) used Whaley and Davis' (2007) model as a guiding framework to adapt (1) elements of service delivery, (2) the nature of the therapeutic relationship, and (3) make changes to intervention content. In an international adaptation, Marsiglia, Ayers, et al. (2019) used the EVM and cultural sensitivity model (CSM; Resnicow et al., 2000) to adapt language, content, concepts, metaphors, and context dimensions of the Keeping it Real (KiR) school-based intervention in Mexico. Ornelas et al. (2019) implemented the Barrera et al. (2013) model of cultural adaptations. Burrow-Sánchez and Hops (2019) reported using the Cultural Accommodation Model for Substance Abuse Treatment (CAM-SAT; Burrow-Sanchez et al., 2011). Other studies did not report whether they used a specific model or no model to adapt the intervention (e.g., Muroff et al., 2017, 2019).

Estrada et al. (2017; Estrada et al., 2019) adapted a previously existing family-based preventative intervention, Familias Unidas, that targets adolescent risk and problem behaviors in Spanish-speaking families. Although the initial intervention was primarily justified and developed by a review of the relevant literature and theory, the 2017 adaptation aimed to assess the feasibility and acceptance of an Internet-based version of the intervention to address barriers to engagement with the original intervention for Latinx families. Much of the tailoring to the intervention involved adapting the methods used to deliver the intervention online in a manner that was culturally congruent and engaging.

3.3. Describing eight types of cultural adaptations using the ecological validity model

The EVM (Bernal et al., 1995) coding of this literature revealed that the types of cultural adaptations made to SUD interventions for Latinx populations most commonly included adaptations in the following four domains: language, context, content, persons. See Table 1 for an overview of the eight dimensions utilized in the studies reviewed. Additionally, Table 2 offers definitions of the eight dimensions and examples from the literature reviewed.

Language was a domain that was adapted universally in the interventions reviewed (see Table 1) as the target populations consisted of monolingual and bilingual Spanish speakers. However, some studies provided the option to receive the intervention in English or Spanish (e.g., Burrow-Sánchez et al., 2015; Hecht et al., 2003; Lee et al., 2016; Marsiglia, Ayers, et al., 2019). While the details of the exact process for translation to Spanish were limited, the literature reviewed highlights the importance of offering SUD interventions that are not only linguistically appropriate but also culturally congruent. Importantly, not only were simple translation and back translation utilized but studies also communicated and honored cultural values in the interventions. The translation of interventions to Spanish also at times appeared to overlap with dimensions of context, content, and persons, as utilizing bicultural, bilingual staff and providing services at local community organizations were common adaptation that studies made. Per Ornelas et al. (2015), findings from qualitative interviews revealed that participants perceived the intervention as more “safe and familiar” in community settings where they already received services in Spanish.

The approach to performing adaptations to *context* ranged from adapting the implementation structure and delivery of the intervention (e.g., providing sessions at a local and accessible community center; (Burrow-Sánchez and Hops, 2019; Estrada et al., 2017; Ornelas et al., 2015) to adaptations to the process of the intervention (e.g., adding more rapport building into the sessions, specifically addressing risk factors and barriers to treatment relevant to Latinx people; Lee et al., 2013; Lee et al., 2019). For example, discussion of real-life stressors such as immigration-related stress and Latinx cultural drinking norms reflected context changes to interventions reviewed (Burrow-Sanchez et al., 2019; Field et al., 2019; Lee et al., 2019). In terms of *content* adaptations, using Latinx names in examples provided and addressing levels of acculturation, gender roles, and cultural values, such as *familismo* and *respeto*, were common adaptations. These studies then incorporated these values into both the spirit and delivery of the interventions reviewed (Lee et al., 2019; Paris et al., 2018).

Additionally, to better address barriers to access and retention of their pilot study, Estrada et al. (2017) created an online pilot of a previously developed in-person intervention (Familias

Unidas). They created a telenovela series and incorporated it into the online sessions to enhance participant engagement with the session content. Thus, instead of using facilitated group meetings alone, participants logged into the web interface where they accessed pre-recorded group sessions. In addition, a facilitator engaged the families in discussion around the session content (e.g., “For those of you watching at home, what are your thoughts?”; Estrada et al., 2017).

As previously mentioned, cultural adaptations frequently focused on the *persons* involved in the delivery of the intervention. Notably, Lee et al. (2006, 2013; Lee et al., 2016, 2019; Lee et al., 2020) trained Spanish-speaking and culturally fluent clinicians to deliver their culturally adapted motivational interviewing intervention for Latinx individuals who were engaging in heavy drinking. Ornelas et al. (2015, 2019) used *promotores de salud* (e.g., community health workers) who were linguistically and culturally fluent in their delivery of a screening and brief psychoeducational intervention for Latinx immigrant day laborers (Vida PURA). The study trained providers to attend to the social context of their Latinx clients (Lee et al., 2013).

3.4. Outcome studies

A growing number of SUD outcome studies exist from culturally adapted EBT research with Latinx populations but limited studies exist that examine moderators and mediators, which are necessary to learn for whom the cultural adaptations are most effective (Kazdin, 2007). As an overview of Table 3, 10 research groups conducted 12 outcome studies of which 6 were treatment RCTs, 6 were prevention trials, and one study used a non-controlled, single group design to prevent relapse after treatment. The 6 treatment RCTs yielded the following broad findings: (1) all found time effects such that participants demonstrated significant decreases in substance use outcomes over time; (2) two found significant, though small, treatment effects such that the culturally tailored treatment outperformed the control condition (Burrow-Sanchez et al., 2019; Paris et al., 2018); and (3) two research groups found evidence for moderation of treatment outcomes (Burrow-Sanchez & Wrona, 2012; Burrow-Sánchez et al., 2015; Burrow-Sanchez et al., 2019; Lee et al., 2019; see Table 3). All 6 prevention RCTs found time effects and 5 found treatment effects. All prevention trials reported on multiple outcomes. None of the prevention trials reported mediation or moderation effects, or measurement of cultural variables.

3.4.1. Treatment trials—Specifically, only two of the RCTs found culturally adapted interventions outperformed less active comparisons but not at all followup time points. Lee and colleagues conducted two RCTs and found treatment effects in the pilot study (2013) but not in the larger trial (2019). In the pilot trial, they found greater reductions in drinking days per month, heavy drinking days per month, and drinking consequences (2013); and a steeper decrease in number of heavy drinking days in the culturally adapted MI (CAMI) versus unadapted MI (2013). In a secondary analysis of the 2019 data, Lee et al. (2020) found that CAMI also outperformed the unadapted MI in terms of anxiety and depression outcomes. In addition, an RCT of culturally adapted, web-based CBT in addition to treatment-as-usual resulted in greater reductions in substance use compared to treatment as usual (Paris et al., 2018). The majority of RCTs reviewed did not yield significant

treatment effects (e.g., Burrow-Sanchez and Wrona, 2012; Burrow-Sánchez et al., 2015; Lee et al., 2013; Lee et al., 2019). A possible explanation for the lack of observed effects is that the comparison groups were active or the unadapted version of the intervention. Of the two RCTs with a less active comparison group, one found a significant treatment effect (Paris et al., 2018) and one did not (Ornelas et al., 2019). Significant treatment effects appear to be rare in RCTs examining culturally adapted treatments.

Next, two research groups found cultural and social variables, such as cultural identity, familism, and discrimination, significantly moderated the substance use–related outcomes. Participants who were more traditional (e.g., higher cultural identity and lower acculturation) evidenced superior outcomes in the culturally adapted interventions compared to standard interventions at the 3-month follow-up (Burrow-Sánchez et al., 2015; Lee et al., 2019) but not at the 6- or 12-month follow-ups (Burrow-Sánchez et al., 2015; Lee et al., 2019). Similarly, those high in parental familism had the best substance use outcomes in the adapted CBT intervention compared to the unadapted version at the 3-month follow-up (Burrow-Sánchez et al., 2015) and interestingly, at the 12-month follow-up, participants with high or low parental familism exhibited better outcomes in the culturally adapted CBT compared to their counterparts in the standard version. Using a social variable, Lee et al. (2019) found that participants who reported higher levels of baseline discrimination had significantly fewer alcohol-related consequences post-intervention when they were randomized to the culturally adapted condition of the study (e.g., CAMI). Modest effect sizes (ranging from 0.20 to 0.22) were reported. Notably, these treatment differences in outcome were no longer present at the 6- or 12-month follow-ups, suggesting differential impact of social variables across time (Lee et al., 2019). In a recent follow-up, Lee et al. (2020) found that only discrimination (not acculturation) moderated anxiety outcomes at 6 months and depression outcomes at 12 months with better outcomes in CAMI. For substance-related outcomes, the cultural and social variables yielded significant moderation outcomes at early timepoints, such as 3- month follow-up, but not at later time points. Only discrimination was a significant moderator of later outcomes for mental health outcomes such as anxiety and depression.

Finally, one study found that cultural variables predicted treatment engagement and retention. Perrino et al. (2018) found that higher family stress at baseline was predictive of less initial engagement and lower levels of session participation in the eHealth adaptation of Familias Unidas. The study measured family stress by the five-item subscale from the Hispanic Stress Inventory (Cervantes et al., 1991). Measuring cultural and social variables may aid in improving engagement and participation.

3.4.2. Prevention trials—For prevention trial outcomes, the culturally adapted intervention outperformed prevention as usual comparison groups in 5 of the 6 intervention trials. Only Komro et al. (2006) did not find significant treatment effects when the comparison group was prevention as usual. Interestingly, only one prevention trial compared a culturally adapted intervention to active, non-Latinx focused interventions, which revealed nonsignificant treatment effects (Kulis et al., 2005). However, when they compared adapted versions to less active control conditions, they did find treatment effects, such as the Latinx

version and the multicultural version each yielded superior substance-related outcomes compared to the control condition.

In terms of substances targeted, 4 trials focused on only alcohol, cigarettes, and marijuana (Hecht et al., 2003; Komro et al., 2008; Kulis et al., 2005; Marsiglia, Ayers, et al., 2019), whereas Estrada et al. (2019) also included prescription drugs and Martinez and Eddy (2005) also included other drugs. Other behavioral targets included intentions to use (Martinez & Eddy, 2005) or refuse (Kulis et al., 2005), condomless sex (Estrada et al., 2017), and parenting (Martinez & Eddy, 2005). Most often, when comparing culturally adapted prevention interventions to control groups, substance-related outcomes were not uniformly better across all timepoints and, when a study measured more than one outcome, not all outcomes were superior. Nonetheless, these culturally adapted prevention trials demonstrated significant treatment effects at some time points on some variables.

3.5. Subpopulations included in this literature

The small body of existing literature for culturally adapting SUD ESTs for Latinx people has focused on specific subgroups to deliver interventions that are both feasible and acceptable to the needs of the identified target group for intervention adaptation. For instance, the literature reviewed primarily includes Latinx youth, immigrant day workers, and families as subpopulations of interest. While significant contributions have been made to the field adapting elements of Motivational Interviewing (Miller & Rollnick, 2013) for Latinx people (Field et al., 2019; Lee et al., 2013; Lee et al., 2016; Lee et al., 2019; Serrano et al., 2018; Torres et al., 2020), the literature spans a range of orientations from prevention-focused interventions for parents and Latinx adolescents (e.g., Coatsworth et al., 2002; Estrada et al., 2017), school-based interventions (e.g., Hecht et al., 2003; Marsiglia, Ayers, et al., 2019; Marsiglia, Medina-Mora, et al., 2019) to smart phone app-based relapse prevention (Muroff et al., 2019).

4. Discussion

This scoping review examined cultural adaptations of EBTs and EBPs targeting substance misuse or disorder for Latinx populations to better understand justifications provided, processes employed, actual cultural adaptations made to interventions, and efficacy results to provide more rigorous guidance for future research. The current state of adapted EBTs and EBPs for Latinx populations shows adaptations have both depth and breadth with the inclusion of various cultural dimensions including language, persons, content, and context, and the use of models to guide the process of cultural adaptation. The RCTs of EBTs and EBPs demonstrate effectiveness of culturally adapted interventions targeting substance misuse with superior outcomes in prevention trials and in two of the treatment trials. In moving this area of the literature forward, key strengths must be included in future Latinx adaptation and treatment development research and some gaps exist in where adaptations should be better documented and developed.

The first aim of this paper was to discover how researchers justify the need to make cultural adaptations to evidence-based interventions for Latinx people. These justifications often included high rates of substance-related consequences, along with considerations of nation

of origin, language, gender, and structural factors such as acculturation and experiences of discrimination. For Latinx communities, cultural adaptations may be required to help ensure that the intervention is appropriate and to increase provider buy-in to effectively implement those interventions into practice. For researchers, substance use–related health inequities are often cited as the main reason to culturally adapt interventions as one solution for improving engagement, retention, and outcomes for marginalized communities.

Improving the science of cultural adaptations requires increasing the dissemination of research findings related to the process and methodologies employed in cultural adaptations. While the reasons that the process of adaptations has not always been described in detail remain unclear, potential explanations include that both academic journals and academicians are less apt to publish detailed methods over outcome research. This limits the progression of cultural adaptation science by impeding replicability of the research conducted (Bahafzallah et al., 2020; Ramos & Alegría, 2014). Alternatively, efforts exist to publish the methodology and process of adaptation separately from outcomes of cultural adaptation research, making it difficult at times to clearly identify the adaptations or connect process to outcomes. Community providers are left with questions of how to approach culturally tailoring an intervention for specific individuals. Future research reviewing treatment manuals may provide more details about cultural adaptations. Furthermore, examining cultural, social, and demographic moderators and mediators may help to guide idiographic adaptations for Latinx individuals with those characteristics.

The current study examined the literature on culturally adapted SUD interventions by applying the Ecological Validity Model and found that the most commonly adapted dimensions were language, context, content, and persons. Fewer studies included adaptation for methods, metaphors, goals, and concepts. Language adaptations were nearly universal in order to make these interventions accessible to monolingual Spanish speakers and those who prefer therapy in Spanish. Translation that goes beyond the word level and includes the use of bilingual and bicultural research staff and clinicians enhances the cultural relevance of interventions and is an important step in diversifying service delivery. In addition to delivering interventions at community organizations and schools, the most common context-related adaptations centered on location of services and topics of immigration and acculturative stress. Content-related adaptations varied and included using Latinx names for actors in videos, Latinx specific data, discussion topics that were more culturally consistent for people from Latinx backgrounds, and other cultural factors and values such as *familismo* and ethnic identity. However, more research should replicate these factors and others as moderators or mediators of outcomes. Finally, more work in the field will help us to better understand how helpful adapting each of the eight dimensions are in improving engagement, retention, and outcomes among various Latinx subgroups.

More RCTs designed to test culturally adapted EBTs with Latinx populations are urgently needed to better understand efficacy, effectiveness, mechanisms of behavior change, and for whom the interventions work best. The growing number of RCTs of culturally adapted SUD EBTs with Latinx samples shows promising preliminary evidence about the effectiveness of adaptations. All six treatment RCTs improved treatment outcomes from baseline to follow-up (see Table 3). Importantly, two RCTs yielded a significant treatment effect in

favor of the culturally adapted EBT (Burrow-Sanchez et al., 2019; Paris et al., 2018), one even had an active comparison group of the unadapted version (Burrow-Sanchez et al., 2019). Similarly promising findings were that four of the prevention RCTs had intervention effects. These significant intervention effects are in line with several meta-analytic reviews demonstrating superior outcomes for culturally tailored interventions compared to unadapted EBTs (Griner & Smith, 2006; Hall et al., 2016; Smith et al., 2011) and one review (Barrera et al., 2013). Some RCTs may not have found significant treatment effects due to active control conditions, and due to having participants choose between English and Spanish intervention delivery for both adapted and nonadapted treatment arms (e.g., Lee et al., 2019). This may be in line with other reviews that did not find significant treatment effects between culturally adapted interventions and comparison groups (Benuto & O'Donohue, 2015; Huey & Polo, 2008; Huey et al., 2014).

In RCTs, the research questions should not be limited to which treatment or prevention intervention is better, but studies should ask more nuanced questions in terms of moderators and mediators to better understand which treatments (e.g., culturally adapted or not) work best and for whom (e.g., acculturated versus enculturated; Paul, 1967; Kazdin, 2007). Two research groups identified significant moderators (e.g., cultural identity, familism, discrimination) of treatment outcome such that those higher in cultural identity or discrimination had better outcomes with the adapted intervention and those who were acculturated had poorer outcomes in the adapted EBT (Burrow-Sánchez et al., 2015; 2019; Lee et al., 2019, 2020). Further, one research group found higher levels of cultural identity predicted treatment retention (Perrino et al., 2018). Identifying these moderators and mediators move the science of cultural adaptation forward by further specifying for whom these treatments work best and under what conditions and which cultural strengths. As we discover significant moderators, recommendations for cultural adaptations based on those moderators will help to guide research and practice to identify what adaptations work for whom. Researchers can then focus on these variables for measurement and make and test specific cultural adaptations; clinicians can then better identify clients who need those specific cultural adaptations. This level of analysis adds to the complexity of cultural adaptations, informing the wide diversity in Latinx groups and pointing to which groups are being left out of culturally adapted treatment options.

4.1. Future directions

While the majority of culturally adapted EBTs for Latinx people have been subpopulation specific, additional groups exist that warrant future empirical attention. Notably, Latinx women and other marginalized subgroups within the Latinx population have often been omitted from the treatment RCTs or represent a small proportion of the sample, but are not without need. For example, while Latinx women report lower prevalence of drinking, recent work suggests that this trend is changing and that young Latinx women are drinking more than young Latinx males (SAMHSA, 2013). This trend is further compounded by intersectionality such that sexual minority Latinas are more likely to use alcohol and experience detrimental mental and physical alcohol-related health consequences (Cerezo & Ramirez, 2020). While a substantial evidence base exists with respect to culturally adapted interventions that address problematic substance use for Latinx adolescents and families,

less variety exists in terms of the interventions available for Latinx adults. Further work should address the SUD treatment needs of Latinx adults, women and other marginalized populations, and include interventions that are indicated for more than a few sessions.

Studies took different approaches to adaptation. The field needs more detail about the process of culturally adapting interventions. For example, while five research groups described using cultural adaptation models, other researchers either involved the community or used the literature and experts to help tailor the interventions. Several studies used community-based participatory research (CBPR) methods, which is also consistent with many existing cultural adaptation models (e.g., Ecological Validity Model: Bernal et al., 1995; and Cultural Adaptation Process Model: CAP, Domenech-Rodriguez & Wieling, 2004), that advocate for community member involvement as one of the first steps to adaptation. For cultural adaptation science to move forward, using CBPR methods would help to ensure considerations of more comprehensive or deep level cultural adaptations (Belone et al., 2020). Chu and Leino (2017) proposed a comprehensive model called Cultural Treatment Adaptation Framework (CTAF) in the hopes of standardizing the process of cultural adaptations. An improved science of cultural adaptation may also require the integration of some aspects of CBPR methodology and a dissemination and implementation framework, like the Interactive Systems Framework (ISF; Wandersman et al., 2008), to better address health disparities by examining contextual factors that can influence intervention outcomes. While some have done work in this area, with non-Latinx populations (e.g., Hirchak et al., 2020), more work is needed to understand how these three impactful areas of science (CBPR, CTAF, ISF) can inform one another to have more of an impact on the health and well-being of Latinx people specifically.

Also missing from the literature is a better cultural understanding of how primary language spoken and/or language preference influence the uptake and acceptability of existing SUD EBTs for Latinx people. For example, the majority of the interventions that the team reviewed were delivered in Spanish or offered in either Spanish or English, and yet they made little mention of language preference or proficiency in English or Spanish. English language proficiency is a social determinant of health that research has linked to health outcomes such that limited English proficiency is associated with poorer health and lower mental health care utilization rates (Schachter et al., 2012; Sentell et al., 2007). Further, language may influence the perception of therapists, intervention content, and other variables that potentially impact important factors that influence outcomes (e.g., therapist empathy). To our knowledge, the studies reviewed did not ask participants about Indigenous heritage and Indigenous languages spoken. Indigenous individuals from Central and South America whose primary language is not Spanish may have limited fluency in both Spanish and English, and therefore face challenges in treatment settings that do not (and likely cannot) deliver linguistically appropriate services. This may also be a missed opportunity to incorporate Indigenous ways of knowing and healing into interventions adapted for Latinx people.

The area of cultural adaptation and addiction research needs a paradigmatic shift to expand the focus on the individual to include social determinants of health (e.g., Lee et al., 2011; Lee et al., 2016). Existing EBTs and EBPs often narrowly focus on individual-level

factors such as age and coping skills. This suggests an underlying (and stigmatizing) assumption that addiction is only caused by individual factors. However, addiction has multifactorial causes, including social determinants such as gender, trauma, immigration status, English language proficiency, experiences of discrimination, access to resources and neighborhood-level factors that need to be more explicitly included in design, development, and adaptation of EBTs and EBPs (e.g., Sue et al., 2019). Relatedly, the overreliance on substance use reduction as a primary outcome at the expense of measuring change in or moderation by other psychological, cultural, social, and spiritual domains also warrants further empirical attention. Lee et al. (2019; Lee et al., 2020; Lee et al., 2021) have made great strides in addressing social determinants of health that include stressors and exclusions around immigration status and stigma and how they may impact substance use. Furthermore, individuals who are less acculturated might more strongly rely on traditional beliefs and healing practices that are distinct from the assumptions of the Western medical worldview. Thus, future research should assess efficacy and effectiveness of culturally grounded interventions for Latinxs (e.g., Hall et al., 2016). SUD prevention and treatment interventions need to continue developing explicit guidance on including social determinants of health to address health inequities and aid marginalized populations to achieve health equity.

4.2. Strengths and limitations

This scoping review has several limitations that are important to consider. For one, our search criteria consisted of articles that were written only in English. The review excluded any articles written in Spanish from the search, and this may limit our understanding of cultural adaptations made in other countries that were not published in English. Often studies did not fully explain the specific cultural adaptations, so future reviews of treatment manuals would provide such details. We also limited our review to SUD EBTs and EBPs and those culturally grounded interventions with evidence of efficacy. Due to funding mandates to use evidence-based interventions, researchers have found it difficult to conduct efficacy and effectiveness trials of culturally based interventions. Future research focusing on culturally grounded interventions developed for Latinx populations (e.g., Santisteban et al., 2011; Santisteban & Mena, 2009) would further inform specific cultural adaptations of EBTs and EBPs. Finally, limiting this review to Latinx populations does not illuminate ways that certain cultural adaptations may benefit more than one ethnoracial population and does not provide a template where categories of adaptations may be common but how they are manifested for a particular ethnoracial group or individual may differ. For instance, exploring values such as spirituality and religion may be common across ethnoracial groups, but the particular beliefs and practices may vary among groups and within groups. EBPs and EBTs do not explicitly address spirituality and religion, although the vast majority of the U.S. population believes in God or a spiritual being or realm (Pew Research Center, 2018). Thus, cultural adaptations for one ethnocultural group may improve intervention engagement, retention, and outcomes for other ethnocultural groups, including non-Latinx White populations.

Despite these limitations, the current scoping review has many strengths. Our focus on process analysis in terms of identifying models for cultural adaptations used demonstrates

increasing scientific rigor and may point researchers to use a meta-model (e.g., Chu & Leino, 2017) to standardize procedures and help to propel advances in this field. Using the Ecological Validity Model (Bernal et al., 1995) to specify types of cultural adaptations addressed or not addressed may encourage researchers to include all eight dimensions in their cultural adaptations as appropriate and test which adaptations may be most related to outcomes. The identification of gaps in the literature related to subpopulations among the Latinx community (e.g., the lack of research around SUD treatment for women) and opportunities for additional SUD treatment research and interventions tailored to older adults are also strengths. Our search was meant to be exhaustive, with many databases searched and keywords used. In addition, we had multiple individuals coding each article, which increased confidence in findings. Our focus on outcomes and moderators also points to future directions for nuanced areas of research that can inform practice. Finally, our focus on one ethnocultural group allowed us to drill down on specific justifications, processes, and efficacy of cultural adaptions along with specific adaptations to help the field move forward.

5. Conclusion

This scoping review highlighted the justifications for, processes of, specific cultural adaptations of, and efficacy of culturally adapted SUD EBTs and EBPs for Latinx populations. Results indicated that the adapted interventions were effective and promising in part due to consistent time effects and periodic intervention effects. More efficacy and effectiveness trials can help us to better understand culturally adapted intervention outcomes for Latinx populations and to test moderators to learn for whom the cultural adaptations are most useful as well as to test mediators to inform active mechanisms of change. Future research on cultural adaptations of SUD EBTs and EBPs with Latinx populations will benefit from using and adopting a standardized cultural adaptation model (e.g., Chu & Leino, 2017) and from considering multiple domains for adaptation by using the EVM and its eight dimensions as a tool to identify cultural adaptations across studies. In addition, future studies should expand recruitment to include more women, Latinx with multiple intersecting identities, and measurement of cultural and social variables to improve the field's understanding of what will improve engagement, retention, and outcomes among Latinx populations.

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Table 1

Eight dimensions of cultural adaptations.

Intervention	Dimensions							
	Language	Persons	Metaphors	Content	Concepts	Goals	Methods	Context
Youth								
A-CBT[a]	X	X		X	X	X		X
KiR[b]	X		X	X	X	X		X
KiR[c]	X	X						
KiR[d]	X	X	X	X	X		X	X
KiR[e]	X	X		X			X	X
Slick Tracey Home Team Program[f]	X		X	X	X		X	
Nuestras Familias[g]	X		X	X	X	X		X
FPNG Plus[h]	X						X	X
FPNG + KiR[i]	X	X		X	X	X	X	X
Adult								
Familias Unidas[j]	X							X
eHealth Familias Unidas[k]	X						X	
CAMI[l]	X	X		X	X		X	X
Vida PURA[m]	X	X		X				X
CASA-CHESS[n]	X							
CBT4CBT[o]	X		X	X			X	
NRT[p]	X							X
BMI[q]	X	X		X				X

[a] A-CBT = Accommodated-Cognitive Behavioral Therapy (Burrow-Sanchez et al., 2011; Burrow-Sánchez et al., 2015; 2019; Burrow-Sanchez & Wrona, 2012).

[b] KiR = Keepin' it REAL (Hecht et al., 2003).

[c] KiR (Marsiglia, Ayers, et al., 2019).

[d] KiR (Marsiglia, Medina-Mora, et al., 2019).

[e] KiR (Kulis et al., 2005).

[f] Slick Tracey Home Team Program (Komro et al., 2006; 2008).

[g] Nuestras Familias (Martinez & Eddy, 2005).

[h] FPNG Plus = Families Preparing the New Generation Plus (Vega-López et al., 2020).

[i] FPNG + KiR (Williams et al., 2016).

[j] Familias Unidas was an intervention developed specifically for Latinx adolescents and families (Coatsworth et al., 2002).

[k] eHealth Familias Unidas (Estrada et al., 2017; Estrada et al., 2019).

[l] CAMI = Culturally Adapted Motivational Interviewing (Lee et al., 2006, 2013; Lee et al., 2016; Lee et al., 2019; Lee et al., 2020).

[m] Vida PURA (Ornelas et al., 2015, 2019; Torres et al., 2020).

[n] CASA-CHESS = CASA-Comprehensive Health Enhancement Support System (Muroff et al., 2017, 2019).

[o] CBT4CBT = Computer Based Training for Cognitive Behavioral Therapy-Spanish (Paris et al., 2018).

[p] NRT = Nicotine Replacement Therapy (Dietz et al., 2018).

[q] BMI = Brief Motivational Interviewing (Field et al., 2019).

Table 2

Definitions of eight dimensions and example adaptations reviewed.

Dimension	Definition	Example adaptations	Example quotes
Language	Use of culturally appropriate, syntonic language	• Translation to Spanish by native speakers • Involves an element of *persons* as people who are both linguistically and culturally bilingual are considered more culturally relevant	"Both the men and the providers we interviewed felt strongly that alcohol screening and brief intervention should be provided by someone the men could relate to and spoke their language, such as a community health worker. Language was cited as a common barrier to care, and men preferred to discuss their alcohol use in Spanish." (Ornelas et al., 2015)
Persons	Acknowledgement of the role of ethnic/ racial similarities and differences between client and therapist	• Use of bilingual and bicultural therapists • Bilingual research staff, promotores, community health workers or entrenadores (coaches)	"All facilitators were fluent in Spanish and English. Facilitators consisted of three males and five females; all were of Latinx descent." (Estrada et al., 2017) "Promotores were Spanish-speaking Latino immigrants selected based on their previous experience with health education, research, and working with Latino communities." (Ornelas et al., 2019)
Metaphors	Symbols and concepts shared with the group's sayings or "dichos" in treatment	• Telenovelas • Interactive exercises	"The e-parent group sessions consisted of three components: simulated parent group discussions, a culturally syntonic telenovela series (i.e., soap opera), and interactive exercises. The simulated parent group discussions featured a group of Latinx parents who in real life were also the parents of adolescents. During the simulated discussions, parents discussed personal struggles associated with their adolescent, offered support, and provided suggestions on how to prevent adolescent risk behaviors." (Estrada et al., 2019)
Content	Cultural knowledge, values, customs, and traditions; Uniqueness of groups (social, economic, historical, political)	• Taking steps to build rapport • Asking about cultural context and experiences • Providing examples, e.g. culturally relevant norms on drinking behavior	"First, a MI element, establishing rapport, was augmented by inviting participants to discuss their social contexts, including reasons for U.S. immigration. Second, culturally relevant content, including ethnic-specific drinking norms, that is, information on how the participant's weekly alcohol consumption compared with Latinxs of the same gender and age. Feedback on consequences specific to heavy drinking for Latinxs, that is, higher rates of cirrhosis mortality and of motor vehicle crashes, was also provided." (Lee et al., 2019)
Concepts	Utilization of treatment concepts that resonate with the culture and context of the group (e.g., individualistic versus collectivistic)	• Adapting concepts and strategies to better reflect gender and interpersonal norms • Using scenarios that are more culturally appropriate	"Data from the students' focus groups revealed the salience of changing gender norms around substance use and substance use offers. Both boys and girls reported finding it challenging to resist peer pressure from a friend of the same gender. In addition, the students (particularly boys) wanted depictions and scenarios where girls were offering to use a substance."Marsiglia, Ayers, et al., 2019) "Study therapists were trained to use a MI-based approach, Elicit-Provide Information–Elicit (Rollnick, Heather, & Bell, 1992), to elicit and then to discuss stressful events, such as feeling discriminated against, feeling misunderstood by close family members as a result of different values, or hassles attributable to the language barrier, that prompted thoughts about drinking."(Lee et al., 2019)
Goals	Supporting values within the intervention that are from the culture of origin and are adaptive/positive	• Creating a module specifically aimed at increasing awareness and development of cultural values (e.g., ethnic identity)	"A new module was created for the A-CBT titled Ethnic Identity and Adjustment that was consistent with the principles of cognitive–behavioral therapy it focused on identity awareness and development for Latina/o adolescents. (Burrow-Sanchez et al., 2019)
Methods	Implementing culturally adapted treatment methods that are consistent with traditions from the group	• Use of CBPR • Culturally related measures • Modeling, cultural reframing, cultural hypothesis testing • Parental involvement	"The CAB also reviewed the thematic analysis of individual interviews, which confirmed the need to address particular risk and protective factors endorsed by men of Mexican-origin who engaged in at risk drinking prior to medical treatment for a serious injury. In addition, the CAB supported the translation of 'Alcohol and the Latinx Community,' (National Institute on Alcohol Abuse and Alcoholism 2015) and inclusion of information pertaining to relevant cultural risk (e.g., acculturative stress) and protective factors (e.g., familism)."(Field et al., 2019)
Context[a]	Integrating changing contexts in assessment	• Community history or historical aspects mentioned are integrated into the	"These modifications included the use of Spanish names in examples implementation of culturally relevant role-plays (e.g., problem solving a situation that involved racism or

Dimension	Definition	Example adaptations	Example quotes
	and treatment to the intervention	intervention • Acculturative stress migration phases developmental interconnectedness and family separation • Economic and social context of the intervention • Delivery of intervention at local community center or schools	discrimination) and providing opportunities to discuss real-life stressors (e.g., translating for a parent).”(Burrow-Sanchez et al. 2019) “The CAMI also introduced a new treatment module that emphasized unique social risk factors for heavy drinking such as isolation marginalization discrimination acculturation stress economic disadvantage and lack of access to job opportunities.”(Lee et al. 2019) “Providing brief MI interventions for alcohol misuse in medical and community settings for Latinxs can also increase access to treatment by removing stigma related to seeking care for substance use issues a known barrier to care among Latinxs.”(Lee et al. 2019)

[a]For the purpose of this scoping review, context was broadened to include the physical setting in which the intervention was delivered as this was viewed to be inextricably linked to accounting for community context.

Table 3

Outcome trials of culturally adapted interventions.

Authors (year)	Sex/ gender	Age	Sample n (% Mexican)	% monolingual	Target/diagnosis	Control condition	Cultural construct measured	Outcome measure	Outcome
Treatment RCTs									
Burrow-Sanchez and Wrona (2012)	94% male	M = 15.49	*N* = 35; majority parents Mexican born (74% mothers; 88% fathers)	72–73 Spanish spoken at home; eligibility had to be bilingual; excluded if monolingual adolescent	Diagnosis of drug abuse or dependence DSM-IV-TR	Standard cognitive-behavioral treatment	Acculturation; ethnic identity; average familism of parent and adolescent	Percentage days used any substance (excluding tobacco)	Time effects significant; treatment effect nonsignificant; moderators significant at 3-month outcome (ethnic identity and familism significant moderators)
Burrow-Sánchez et al. (2015) *	90% male	M = 15.2	*N* = 70	Excluded monolingual; parents mostly born in Mexico (74.3% mothers; 81.4% fathers)	Diagnosis alcohol or drug abuse or dependence DSM-IV-TR	Group-based cognitive-behavioral treatment	Acculturation; ethnic identity; parental familism	Number of days substances including alcohol but excluding tobacco were used in past 90 days	Time effects significant; Treatment effect nonsignificant; Ethnic identity and familism significant moderators at 3 months. Low ethnic identity predicted best outcomes in standard CBT and worst outcomes in A-CBT. High ethnic identity did better in A-CBT. For low parental familism, youth did best in S-CBT; for high parental familism, youth did best in A-CBT
Burrow-Sánchez et al. (2019) *	90% male	M = 15.2	N = 70	Excluded monolingual; parents mostly born in Mexico (74.3% mothers; 81.4% fathers)	Diagnosis alcohol or drug abuse or dependence DSM-IV-TR	Group-based cognitive-behavioral treatment	Acculturation; ethnic identity; parental familism	Number of days substances including alcohol but excluding tobacco were used in past 90 days	Time effects significant; Treatment effect significant at 12-month timepoint; Moderator (parental familism) significant at 12-month timepoint. Those in the A-CBT had the lowest use of substances with no differences between those with parents high or low in familism. Those with low parental familism in A-CBT did better than those with low parental familism in S-CBT. Similarly, those with high parental familism did better in A-CBT than those with high familism in S-CBT, who had the worst outcomes.
Lee et al. (2013)	56% male	M = 34.9	*N* = 58	Had to be English proficient (conversationally)	Hazardous drinking	Unadapted MI	Acculturation	Drinking days/ month; heaving drinking days/ month; drinking consequences at 2-	Time effects significant for all 3 outcomes; treatment effect significant for negative consequences (Impulse subscale).

Authors (year)	Sex/ gender	Age	Sample n (% Mexican)	% monolingual	Target/diagnosis	Control condition	Cultural construct measured	Outcome measure	Outcome
								and 6-month follow up	
Lee et al. (2019)	63% male	M = 41	*N* = 296; 1.4% Mexican-Am; 45% Puerto Rican	32% received intervention in Spanish	2 or more heavy drinking episodes in past month and not in SUD treatment	Unadapted MI	Acculturation; discrimination	Percent heavy drinking days and negative consequences; moderators acculturation and discrimination	Time effects significant: percent heavy drinking days and for negative consequences. Treatment effects not significant. Acculturation and discrimination each significant moderators
Lee et al. (2020) **	63% male	M = 41	N = 296; 1.4% Mexican-Am; 45% Puerto Rican	32% received intervention in Spanish	2 or more heavy drinking episodes in past month and not in SUD treatment	Unadapted MI	Acculturation; discrimination	Secondary outcome measures: depression symptoms; anxiety symptoms	Time effects significant for both depression and anxiety; treatment effect not significant, Discrimination moderated depression outcome but not anxiety; acculturation not a significant mediator
Muroff et al. (2019)	88.6% male	M = 41.1	*N* = 79	100% (all Spanish Speaking-fluent, not sure if monolingual)	Substance use after successful completion of residential treatment	Not an RCT; single group	None	ASI substance use; “rates of use” alcohol use, illegal drugs, same day alcohol and drug use, cocaine, marijuana, heroin.	Rates of use for each substance remained stable and did not differ significantly from baseline to 6 months (prevention of “relapse” focused, so good). “Treatment completers” did significantly better than those who discontinued treatment (use of illegal drugs, cocaine & heroin)..
Ornelas et al. (2019)	100% male	M = 47.8	*N* = 121 (65.3% Mexico country of origin)	28.9% (only Spanish for reading and speaking)	At risk drinking (AUDIT 6+)	Referral to services	None	Total AUDIT score and AUDIT Q3 (frequency of heavy episodic drinking); number of drinks per drinking day (from TLFB past 2 weeks)	Time effect significant; treatment effect nonsignificant. Effect sizes between intervention groups at baseline, 2- and 8-week follow-ups for drinks per drinking day ranged from 0.35–0.67 (at 8 week); number of drinking days in past 14 days.
Paris et al. (2018)	32.6% female	Mean = 42.9 (11.5)	*N* = 92 (9% Mexican origin) (72% Puerto Rican – majority)	100% Spanish “primary language”	Any substance use – 36 reported their primary substance was marijuana, 35% reported alcohol, and 25% reported cocaine; the remainder reported opioids (3%) or benzodiazepines (1%)”	Standard outpatient treatment	Level of acculturation	Substance use calendar (“similar to TLFB”); self-reported, days of substance use by week	Significant time effects, significant treatment effect CBT4CBT yielded greater reductions in primary substance used.
Prevention trials									

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Authors (year)	Sex/ gender	Age	Sample n (% Mexican)	% monolingual	Target/diagnosis	Control condition	Cultural construct measured	Outcome measure	Outcome
Estrada et al. (2019)	63% male	8th grade M = 13.6 yrs	*N* = 230; 56.6% born in the U.S. (no % of Mexican Am given)	Unclear	Sample exhibiting behavioral problems	Prevention as usual	None	Frequency of drug use; prescription drug use; alcohol use; cigarette use; condomless sex	Intervention effects significant; EFamilias superior to PAU for drug use, prescription drug use, cigarette use; no significant mediation. Regarding drug use, post hoc tests showed EFamilias youth decreased use of marijuana, prescription drugs, and cigarette use and had stable inhalant use and alcohol use while PAU increased on all 4. Secondary outcome: EFamilias resulted in improved family function at 3 months but did not significantly mediate outcomes.
Hecht et al. (2003)	47% female	7th grade at Wave 1 with a 2 year follow-up	*N* = 6035 reported on (*N* = 4234 Wave 1), *n* = 3318 Mexican or Mexican-American	"Substantial proportion of Spanish speaking students, so teachers delivered in English and Spanish: 10% chose to complete questionnaires in Spanish 10% said they spoke mostly or only Spanish and 13% said they spoke mostly Spanish with their families"	Prevent alcohol, cigarettes, and marijuana	Substance use prevention programs provided by their school district/ personnel	None	Quantity and frequency of alcohol, cigarettes, and marijuana in past 30 days (Likert scales)	Comparing control to combined intervention arms: both time and treatment effects significant, increase in alcohol use significantly less than in control group; Mexican American and Multicultural versions more effective than the Black/White version. Each intervention arm evidenced significantly less increase in alcohol than control group at Wave 2 and less alcohol and all substances at Wave 4. Students in Mex-American and Multicultural arm had less increase in marijuana than in control group; the Mexican American group had smaller increases in overall substance use at Wave 2 and 3 and less cigarette use at Wave 3.
Komro et al. (2008)	50% male	6th graders wave 1, 7th graders wave 2, 8th graders wave 3	*N* = 61 schools; 4259 students at baseline	74% said English primary language spoken at home	Universal prevention of alcohol, cigarette, and cannabis use	Prevention as usual	None	Alcohol use (summed 5 items about alcohol use), intention to use alcohol (summed 4 items), and multiple drug use - alcohol, cigarette, and marijuana (alcohol measured by Monitoring the Future questions)	ITT analyses: no treatment effects at any time point; Project Northland; secondary analyses revealed superior outcomes for home-based delivery
Kulis et al (2005)	48.5% female	12.52 yrs. at baseline	*N* = 3402 (100% Mexican	8% completed in Spanish, 14% spoke mostly or only	Delaying or reducing substance use and promoting	Substance use prevention	None	Quantity and frequency of alcohol, cigarettes, and	Time effects significant with increases in substance use. No treatment effects compared

Authors (year)	Sex/ gender	Age	Sample n (% Mexican)	% monolingual	Target/diagnosis	Control condition	Cultural construct measured	Outcome measure	Outcome
			heritage with 63% of those endorsing only Mexican heritage)	Spanish with friends 31% spoke only or mostly Spanish with family	antidrug attitudes and norms	programs provided by their school district/ personnel		marijuana in past 30 days (Likert scales) and averaged these for measure of overall substance use	to non-Latino version; Latinx version group vs controls had less overall substance use, less marijuana use, stronger intentions to refuse; greater confidence they could refuse drugs, and lower estimates of their peers' drug use; in multicultural version vs controls, they had less overall substance use, less marijuana substance use, and less alcohol use;
Marsiglia, Ayers, et al. (2019)	46.7% youth female; 91% parents female	M = 12.6	*N* = 532 dyads (parents and youth); 19.9% youth foreign born; 97% parents foreign born; 98% parents Latino	Majority of parent groups conducted in Spanish only (no number)	Use of alcohol, cigarettes, and Marijuana	Curriculum designed by the community partner without an alcohol and other drug prevention focus	None	Dichotomized use vs no use of alcohol, cigarettes, and marijuana in past 30 days	Time effect: control significantly increased use wave 1 to wave 4; PO (parent only, and this is Families Preparing the New Generation - not KiR) sig increased W 1–2 but then significant decrease W2-W4; no significant difference PY (parent and youth) over time (use stable). Treatment effect significant at W4 PO youth used significantly less than control youth. Alcohol and Inhalants seemed to drive the “any substance use” findings. For alcohol only, there was a treatment effect between PO and PY at Wave 4 such that PO outperformed PY. But for inhalants, inhalant use was higher in the PO vs PY at Wave 2
Martinez and Eddy (2005)	56% male youth; 44% female youth	M = 12.74; mothers M = 36.38; fathers M = 39.29	*N* = 73 families; 90% of families of Mexican heritage	Recruited Spanish Speakers, so 100% Spanish-speaking Latino parents	Universal prevention of alcohol, cigarette, and cannabis use, and other drugs	No project related services	None	3 or 4 questions on how likely youth was to use alcohol, tobacco, marijuana, and other drugs in next year if offered by a best friend. (also: decrease internalizing behaviors and improvement academics). Also interested in feasibility and parenting practices	Youth outcomes: treatment effect for tobacco intentions to use also treatment effects for youth aggression and externalizing behaviors with better outcomes for intervention; parental outcomes evidenced a treatment effect on 3 outcomes in favor of the intervention

Note:

* indicates that both articles (Burrow-Sánchez et al., 2015; 2019) are from the same RCT.

** indicates that both articles (Lee et al., 2019, 2020) contain data from the same RCT; CBT = cognitive behavioral therapy; A-CBT = culturally accommodated CBT; S-CBT = standard CBT; ASI = Addiction Severity Index; PAU = prevention as usual; W = wave.