Article

Journal of Attention Disorders
1–15

DOI: 10.1177/1087054720959698
journals.sagepub.com/home/jad
SAGE

Can School Mental Health Providers Deliver Psychosocial Treatment Improving Youth Attention and Behavior in Mexico? A Pilot Randomized Controlled Trial of CLS-FUERTE

Lauren Marie Haack[1], Eva Angelina Araujo[2], Jocelyn Meza[1], Lauren M. Friedman[1], Madeline Spiess[1], Dulce Karely Alcaraz Beltrán[2], Kevin Delucchi[1], Ambrocio Mojardín Herladez[2], and Linda Pfiffner[1]

Abstract

Background: Despite well-established Evidence-Based Treatments (EBTs) for Attention-Deficit/Hyperactivity Disorder (ADHD) and Oppositional Defiant Disorder (ODD), many low-resource settings lack EBT access. **Methods:** We conducted a school-clustered randomized controlled pilot of CLS-FUERTE (a multicomponent behavioral EBT adapted for children in Mexico) with 58 students. We randomly assigned four schools to receive CLS-FUERTE and four to receive school services as usual. We compared groups post-treatment on parent- and teacher-rated ADHD/ODD symptoms and impairment. **Results:** CLS-FUERTE fidelity, attendance, engagement, and acceptability was high and students receiving CLS-FUERTE showed greater improvement in teacher-rated ADHD, ODD, and impairment, as well as parent-rated ADHD and impairment, compared to students receiving usual services. **Conclusions:** Pilot results suggest that psychosocial EBTs can be successfully implemented by School Mental Health Providers in Mexico. *(J. of Att. Dis. XXXX; XX(X) XX-XX)*

Keywords

ADHD, ODD, evidence-based treatment, schools, community, culture

Introduction

Far more people experience mental health difficulties than receive treatment worldwide (Substance Abuse and Mental Health Services Administration [SAMHSA], 2018); however, Mexican youth exhibit disproportionately low levels of mental health service utilization (Borges et al., 2008; Espinola-Nadurille et al., 2010). This is particularly troubling given that large-scale epidemiological research suggests youth mental disorders are extremely prevalent in Mexico, perhaps twice as prevalent as in the United States (U.S.) and Canada (Benjet et al., 2009; Espinola-Nadurille et al., 2010). These elevated rates of unmet need for Mexican youth may be explained by a collective burden of risk factors, such as poverty, violence, lack of educational opportunities, marginalization of indigenous populations, and other forms of family adversity (Benjet et al., 2009; Chalita et al., 2012).

Furthermore, Mexico is plagued by an under-developed and under-funded mental health care system in which the uninsured (i.e., 40% of the Mexican population) are served by publicly-funded and managed health care facilities which vary widely in terms of accessibility and quality (Benjet et al., 2009; Espinola-Nadurille et al., 2010). In addition, it may be that unmet need in Mexican youth is exacerbated by the incongruence between available evidence-based treatments (EBTs) and family preferences. For example, the overwhelming majority of Mexican parents/caregivers favor psychosocial therapy over medication for treatment of attention and behavior disorders (Palacios-Cruz et al., 2011); however, there is a marked lack of youth mental health services in Mexico outside of psychiatric hospital settings (Borges et al., 2008).

The extent of untreated psychopathology in Mexican youth is under-researched; however, existing studies suggest that mental health relates to school engagement and

[1]University of California San Francisco, San Francisco, CA, USA
[2]Universidad Autonoma de Sinaloa (UAS), Culiacan, Sinaloa, Mexico

Corresponding Author:
Lauren Marie Haack, University of California San Francisco, 401 Parnassus Ave, G06, San Francisco, CA 94143, USA.
Email: lauren.haack@ucsf.edu

vice versa (Borges et al., 2008, 2011; Chalita et al., 2012; Espinola-Nadurille et al., 2010). School engagement is a pressing priority in Mexico, as less than half of the population achieve a high school education (Borges et al., 2011; Chalita et al., 2012). Importantly, in two distinct studies with Mexican youth, mental health symptoms predicted school drop-out, with impulse control and Attention-Deficit/Hyperactivity Disorder (ADHD) symptoms among the most predictive factors (Borges et al., 2011; Chalita et al., 2012). In addition to various psychosocial consequences associated with school completion failure (e.g., unemployment, poverty, conduct problems, and substance use), the odds of receiving adequate mental health care appear lower for Mexican youth not attending school (Borges et al., 2008). Thus, there appears to be an unfortunate cyclical process occurring between mental health problems, school drop-out, and under-utilization of mental health service in Mexican youth.

Psychosocial School-based ADHD/ODD Interventions May Provide a Solution for Unmet Need

In response, efforts to improve unmet mental health need in Mexican youth are warranted. The school system may be a particularly accessible and sustainable system to employ, especially given the relation between mental health and school engagement. Many mental health services currently offered within Mexican schools are largely non-EBTs (Espinola-Nadurille et al., 2010; Sanchez-Sosa, 2007; Stark et al., 2010) and existing school resources currently allocated to non-EBT services could be reapportioned to those with empirical support (Borges et al., 2008, 2011; Chalita et al., 2012; Espinola-Nadurille et al., 2010).

Attention and behavior problems may be particularly helpful to target, because they are among the factors most associated with school drop-out, and youth appear responsive to EBTs for ADHD and Oppositional Defiant Disorder (ODD; Borges et al., 2008, 2011; Chalita et al., 2012). Futher, ADHD and ODD and are among the most common youth mental health conditions across cultures (American Psychiatric Association, 2013; Canino et al., 2010; Polanczyk et al., 2015) with estimates at 7% for ADHD and 10% for ODD in Mexico (Borges et al., 2010). When untreated, symptoms and impairment persist and can lead to significant near- and long-term adverse outcomes (Agnew-Blais et al., 2016; Caye et al., 2016; Karam et al., 2015). The high prevalence of ADHD and ODD, coupled with the widespread impact of their symptoms and impairment, serve as a strong impetus for developing and disseminating school-based interventions for these disorders on a global scale.

Psychosocial treatment may be the preferred modality, as Mexican families favor this type of treatment compared to medication (Palacios-Cruz et al., 2011). Psychosocial interventions incorporating parent training, child skills training, and/or classroom management are EBTs shown to reduce ADHD/ODD symptoms and related impairments (Evans et al., 2018; Pfiffner & Haack, 2014). Despite compelling support for EBTs, uptake has not occurred population-wide and effective treatments often fail to reach those in need (Danielson et al., 2018). Fortunately, psychosocial EBTs show feasibility and efficacy when delivered by school mental health providers (SMHPs) in English (Pfiffner et al., 2016) and Spanish (Haack et al., 2019) within the U.S. Furthermore, once SMHPs are trained in EBTs, they may continue to deliver them at no cost to families, thereby addressing sustainability and equitable access.

Preliminary Studies and Guiding Theoretical Models

A partnership between researchers at two universities in the U.S. and Mexico (The University of California San Francisco (UCSF) in San Francisco, California, U.S., and the Universidad Autonoma de Sinaloa (UAS) in Culiacan, Sinaloa, Mexico **)** was established in 2014 to adapt and evaluate the Collaborative Life Skills (CLS) Program (a comprehensive school-home psychosocial EBT incorporating child skills groups, parent skills groups and classroom management; Pfiffner et al., 2016, 2018) for Spanish-speakers (i.e., CLS-S).

This initial effort occurred in context of the primary Randomized Controlled Trial (RCT) of CLS in 23 U.S. public elementary schools, which demonstrated effectiveness via high provider fidelity and participant engagement, as well as efficacy via significant improvement in symptoms and functioning compared to school services as usual (Pfiffner et al., 2016). CLS is accessible and outcomes demonstrate sustainability, as SMHPs are trained to deliver the program at no charge to families (regardless of insurance coverage) directly within the schools and improvements are maintained into the next school year (Pfiffner et al., 2018).

In order to provide CLS-S to four additional U.S. schools at the time of the original CLS trial at request of the participating public school district, we followed examples of successful cultural adaptations efforts (e.g., Baumann et al., 2014; Matos et al., 2006) featuring (1) ongoing collaboration between the intervention developer and cultural adaptation team, (2) iterative revisions and adaptation efforts based on pilot work, observation, and feedback, and (3) guidance of theoretical models.

One of the first known cultural adaptation model was Bernal and colleagues' (1995) Ecological Validity Model (EVM). Originally developed for the Latinx population, this model examines eight domains of consideration when culturally adapting an evidence-based intervention. It has been utilized in many cultural adaptation efforts to date,

Table 1. Stacked Theoretical Approach to Adapting EBTs for Novel Populations and/or Settings.

Ecological Validity Model Domains[1]			Cultural Adaptation Process Stages[2]		
	Language[+*]	Culturally appropriate and syntonic For example, translate manual and materials into Spanish[+]		**(1) Setting the Stage**[+*]	Develop collaborative relationships
	Persons[+]	Similarities/differences between clients and providers For example, therapist-client cultural matching; additional time for conversation[+]			Select framework and intervention to adapt
	Metaphors	Cultural symbols, concepts, sayings & "dichos" For example, cultural idioms and expressions, such as "He who lives a hurried life will soon die."		**(2) Initial Adaptations**[+*]	Adapt manual and materials for target group
	Content	Cultural knowledge, values, and traditions For example, addition of acculturation session			Select appropriate measures for evaluation
	Concepts*	Treatment concepts consonant with culture For example, name emphasizes family strength*			
	Goals[@]	Transmission of positive and adaptive cultural values For example, values of 'respeto' and 'buena educación' emphasized[@]			Conduct pilot with observation and feedback
	Methods*	Development and/or adaptation of treatment methods For example, Time out strategy removed;[+] augmented outreach/recruitment strategy* and altered group structure to fit Mexican academic calendar*		**(3) Adaptation Iterations**	Iteratively adapt manual/materials based on pilot
	Context	Consideration of changing contexts For example, contextual topics (e.g., acculturation) included			Continue implementation and evaluation efforts

*Addressed in the current CLS-FUERTE adaptation; [+]Addressed in the CLS-S adaptation for Spanish speaking families in the United States; [@]Inherently addressed in the original CLS program.
[1]Bernal et al. (1995); [2]Domenech-Rodriguez and Wieling (2004); Examples are sample adaptations made across domains from cited efforts in the introduction or adaptations from the CLS-S and CLS-FUERTE pilots.

including the translation of Parent-Child Interaction Therapy (PCIT) for Puerto Rico (Matos et al., 2009) and Parent Management Training, Oregon Model (PMTO) for Latinxs in the U.S. and Mexico City (Baumann et al., 2014). Another class of theoretical models involve stages, such as Domenech-Rodriguez and Wieling's (2005) Cultural Adaptation Process (CAP) model. This model draws from the diffusion of innovations framework and emphasizes both top-down and bottom-up approaches (Domenech-Rodriguez & Wieling, 2004). Our process can be conceptualized as a "stacked approach" incorporating the EVM & CAP, as was utilized in the adaptation of PMTO for Mexico City (Baumann et al., 2014). See Table 1 for an overview of the stacked EVM and CAP model approach.

Initial CLS Adaptations for Spanish-speaking families. After our partnership was established, we translated the CLS manual and materials from English to Spanish, which we called CLS-S (Haack et al., 2019). This effort fell under the **LANGUAGE** ecological validity model domain. We made very few other changes to the treatment in order to see how it functioned without adaptation based on recommendations that interventions should first be delivered with minimal adaptation in order to examine the need for and prioritization of adaptation efforts (Kumpfer et al., 2002). However, to align the EVM **PERSONS** domain with the traditional Latinx value of "*personalismo*," the team engaged in friendly conversation with participants before and after group sessions, which we called "*compartiendo viviencias*." Similar to previous cultural adaptations of parent training interventions for Latinx families, we aligned the intervention **CONCEPTS** with "*familismo*" by inviting extended family members to participate in the program. Session content remained identical with one exception: discussion of the "Time Out" discipline strategy of was omitted due to lack of cultural practice and relevancy in the Latinx community.

The pilot quasi-controlled trial of CLS in Spanish (i.e., CLS-S) demonstrated comparable effectiveness to the original CLS trial with similar rates of provider fidelity and participant engagement, as well as comparable efficacy with immediate and sustained outcomes significantly greater in CLS-S than usual services (Haack et al., 2019). In addition, meaningful themes emerged from qualitative interviews and focus groups suggesting acceptability via satisfaction and cultural congruence with family expectations and values. Regarding **LANGUAGE**, the theme "*Spanish Materials Appreciated*" emerged, suggesting our translation efforts generally were successful. Regarding **PERSONS**, many parents described a rapport with the staff, supporting our strategy of "*compartiendo viviencias*." Interestingly, regarding **METAPHORS**, it appears that the examples we used were sufficient without modification. Themes also emerged suggesting that CLS-S treatment dimensions of **CONTENT, CONCEPTS, & GOALS** were all in agreement with Latinx parents' expectations and values for child behavior and family functioning. One parent suggested we could highlight alignment with Latinx cultural values in the program name with a title related to "strength." It appeared that many CLS-S **METHODS** aligned with parents' abilities and preferences, as can be seen in the theme "Collaborative Design Appreciated." However, some parents suggested expansion of outreach/recruitment to reach more families. It appears that the CLS-S school-based **CONTEXT** aligns well with parents' abilities and preferences, as could be seen in the emerging theme "Program was Feasible."

Given the overwhelmingly positive results of the CLS-S pilot in the U.S., our team sought to translate CLS-S for implementation and evaluation in Mexico. We kept many aspects of CLS consistent in the initial adaptations for Mexico based on recommendations that interventions should first be delivered with minimal adaptation in order to examine the need for and prioritization of adaptation efforts (Kumpfer et al., 2002). First, regarding **LANGUAGE**, we made minor iterative changes to the translation based on words or phrases that appeared difficult to understand in our observations of the CLS-S pilot. Regarding **CONCEPTS**, as suggested by one of our participants, we changed the name to CLS-FUERTE (*Familias Unidas Emprediendo Retos y Tareas para el Éxito, or Families United in Undertaking Challenges for Success)* to emphasize family strength. All other adaptations fell under the **METHODS** domains. To begin, given that participants in our CLS-S pilot included grandmothers participating in place of parents, we changed the term "parents" to "caregivers" in all manuals and materials. To accommodate the Mexican academic calendar, we modified the structure from ten, 60-minute groups into six, 90-minute groups featuring the aspects most appreciated by Latinx parents/caregivers in our CLS-S pilot (Haack et al., 2019). Finally, given the CLS-S participant and partnering Secretary of Public Education (SEP) suggestions that we extend the program to more families, we expanded the group size from six families to eight families per school. We also augmented the outreach and recruitment strategies by inviting all parents/caregivers and teachers at participating schools to an initial meet-and-greet, which served two purposes. First, it provided the opportunity to collect measures about mental health identification and help-seeking for a needs assessment. Second, it facilitated recruitment, as many CLS-FUERTE families self-referred from this meeting after speaking with teachers about interest in participation. Table 1 presents an overview of theoretical models used and adaptations made for the CLS-S and CLS-FUERTE pilots.

Current Study

Our current study goals were to investigate the fidelity, engagement, acceptability, and outcomes of CLS-FUERTE through implementation of a school-clustered pilot RCT comparing the intervention with Business as Usual (BAU). We predicted that CLS-FUERTE would reveal high rates of fidelity, engagement, acceptability comparable to those reported in the U.S. CLS trials. We also predicted that students receiving CLS-FUERTE would improve significantly across domains (i.e., parent- and teacher-rated ADHD and ODD symptom severity, as well as overall impairment) relative to students in BAU.

Methods

Participants

A total of $N = 58$ Mexican students in grades 1 to 5 across eight public elementary schools in Sinaloa, Mexico participated in the current study ($M = 7.25$ students/school, range = 6–8). For each student, one parent and one teacher were designated as "primary" (meaning they would participate in CLS-FUERTE and implement the strategies) and asked to complete all measures. All data was collected at the students' respective schools. See Table 2 for demographic information and Figure 1 for participant flow.

Recruitment. Recruitment occurred between May and September each year and began with invitations to school principals suggested by the local SEP. As described in the introduction, as part of our augmented outreach/recruitment plan for Mexico, we invited all families and personnel in participating schools to an informational gathering in September in which we showed a silent video depicting a child with attention and impulse-control difficulties (i.e., the Behavioral Impairment Video; Haack et al., 2014). We encouraged families to contact us if interested in a program to help children similar to the child in the video. School personnel also identified candidate children and contacted families about participating. See Figure 1 for recruitment

Table 2. Parent and Child Characteristics.

	CLS-FUERTE	BAU	
	Students	Students	
	(*n* = 28)	(*n* = 30)	*p*[a]
Age *(mean, SD)*	7.3, 1.29	7.6, 1.47	.349
Male *(%)*	74%	72.4%	.889
Grade *(%)*			.826
1–2	30.0%	22.2%	—
3–4	26.7%	18.5%	—
5	30.0%	37.0%	—
On medication *(%)*	31.8%	29.2%	.305
ADHD Presentation *(%)*[+]			.377
Predominantly Inattentive	0.0%	3.3%	—
Predominantly Hyperactive-Impulsive	3.6%	10%	—
Combined	96.4%	86.7%	—
ODD	71.4%	83.3%	.277
	Parents	**Parents**	
	(*n* = 28)	(*n* = 30)	
Education *(%)*			.516
<High school	29.6%	40%	—
High school graduate—some college	25.9%	30%	—
College graduate or advanced degree	44.4%	30%	—
Total Annual Household Income *(%)*			.551
Less than $5,000	28.5%	26.7%	—
$5,001–$20,000	53.6%	46.7%	—
$20,001–$40,000	10.7%	13.3%	—
$40,001 or more	0%	6.7%	—
Other or prefer not to report	7.1%	6.7%	—

Note. *N* = 58. ADHD = Attention-Deficit/Hyperactivity Disorder; BAU = business as usual; CLS-FUERTE = Intervention; ODD = Oppositional Defiant Disorder; SD = standard deviation.

[+]ADHD Presentation and ODD Diagnosis based symptoms endorsed by parents OR teachers.

[a]CLS-FUERTE versus BAU Significance: *t*-test for continuous variables; Pearson chi-square statistic for categorical variables.

flow and number of students deemed ineligible at each step of recruitment.

Screening. Interested parents scheduled an appointment to screen for eligibility. If parents attended the screening appointment, reported willingness/ability to participate in sessions, and described at least six youth symptoms of inattention and/or hyperactivity with at least one area of related impairment (i.e., school, family, or social impairment), we scheduled meetings for baseline assessments.

Baseline Assessment. After completing informed consent procedures approved by UCSF Committee on Human Research, parents and teachers of successfully screened students completed questionnaires, including the Child Symptom Inventory (CSI-4; Gadow & Sprafkin, 1997), Impairment Rating Scale (IRS; Fabiano et al., 2006), and demographic/history form. Students meeting the following criteria were eligible to participate: (a) at least six CSI-4 inattention symptoms and/or six hyperactive/impulsive symptoms endorsed by parent or teacher as occurring often or very often, (b) at least one area of IRS functioning rated as ≥ 3 by both parent and teacher, thereby indicating cross-setting impairment, (c) a parent available to participate; and (d) a primary teacher agreeing to participate. The assessment and screening algorithm based on at least six symptoms per domain reported by parents or teachers has been used in previous school-based ADHD trials (Haack et al., 2019; Pfiffner et al., 2016) and is associated with strong predictive validity for ADHD (sensitivity = 0.80, specificity = 0.58; Gadow & Sprafkin, 2002) and ODD (sensitivity = 0.70, specificity = 0.90; Gadow & Sprafkin, 2002) diagnoses. Students taking medication were eligible as long as regimens were stable. Students with significant visual or hearing impairments, severe language delay, psychosis, or pervasive developmental disorder or who were in full-day special classrooms were excluded. Eligible students provided assent before participating.

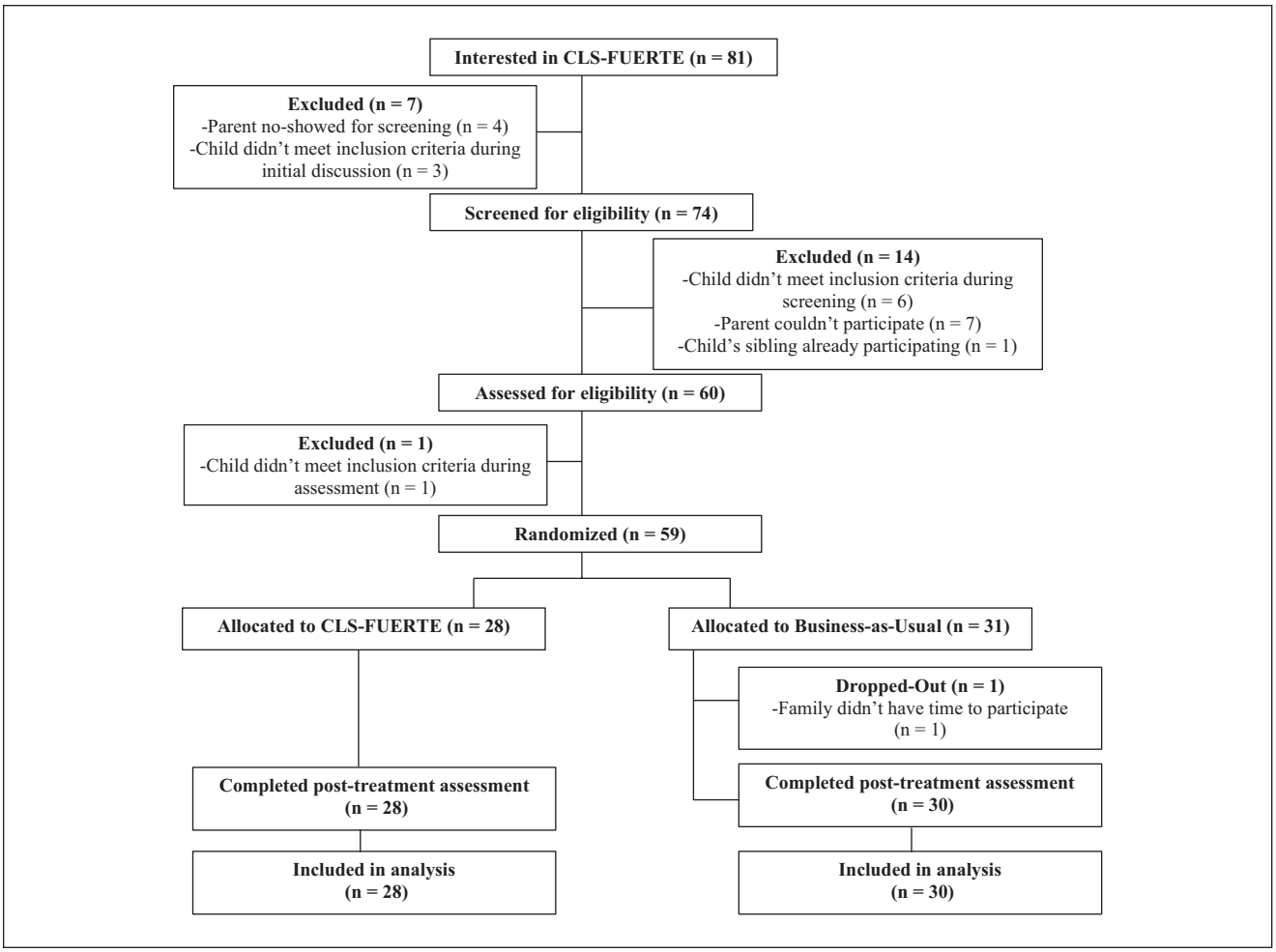

Figure 1. Participant flow and treatment group randomization.

Study Design

A 2-level (students, schools) cluster RCT design (Hayes & Moulton, 2009) accounted for treatment (CLS-FUERTE or BAU) within level 2 (schools); RCT registered at clinicaltrials.gov: NCT02888821; https://clinicaltrials.gov/ct2/show/NCT02888821?term=haack&draw=2&rank=8. We randomized schools to CLS-FUERTE (school $n = 4$, student $n = 28$) or BAU (school $n = 4$, student $n = 31$). We determined our sample size based on practical considerations (i.e., previous CLS trial experience, years of funding). Each year, schools were divided into high or low Socioeconomic Status (SES) categories (determined by the Secretary of Public Education; SEP) after baseline assessments were completed in September. The first author coded schools to conceal their identity until treatment was assigned and a statistician randomized concealed ordered pairs to CLS-FUERTE or BAU using a random number generator. Those randomized to CLS-FUERTE received the intervention between October and December, followed by post assessments for all families in December each year.

Intervention: CLS-FUERTE

The CLS-FUERTE program is a comprehensive psychosocial treatment for school-aged youth (grades 1–5) delivered by Mexican SMHPs directly at the students' school site. The six-week program encompasses weekly parent management training groups led by the SMHP, weekly student skills groups led by the SMHP, and daily classroom management by the teacher supported by the SMHP. The program is designed to teach parents, students, and teachers a common language encouraging skill use to address impairment related to ADHD and ODD. Thus, students in CLS-FUERTE receive around-the-clock prompting and reinforcement for goal behaviors related to school, family, and social functioning.

Parent component. Parents attended six 90-minute groups teaching strategies to manage attention/behavior challenges including positive consequences (e.g., rewards, praise), negative consequences (e.g., planned ignoring, removing privileges), and routines. Each group, SMHPs reviewed and

troubleshooted strategies assigned and presented new strategies. Parents also reviewed skills covered in the student group and were taught methods to promote and reinforce skill generalization. Groups were held at school sites and scheduled to accommodate participating families, often after drop-off.

Child component. Students attended six 60-minute groups teaching strategies to compensate for attention/behavioral challenges, including organization (e.g., routines) and social skills (e.g., good sportsmanship, handling teasing). SMHPs targeted skill knowledge and implementation through didactic instruction, modeling, behavioral rehearsal via interactive games, corrective feedback, and in-vivo practice via role plays. Students received reinforcement (i.e., praise, tickets called "stars," small prizes) for following rules, participating in activities, and practicing skills. Self-management of alertness was targeted with group-reinforced attention checks (Pelham & Hoza, 1996). To encourage skill generalization, students brought in "stars" they earned at home and class to exchange for praise and a group-based reward (i.e., celebratory party). Groups occurred during the school day at students' respective schools; groups were scheduled by the SMHPs based on the collective input they received from participating teachers regarding the most suitable day and time for children to attend group, usually during a nonacademic period.

Classroom component. Teachers attended a 60-minute orientation, during which SMHPs provided an overview of attention/behavior concerns and the use of a school–home daily report card (DRC). Teachers selected two or three behavior goals tailored for each student, which were discussed with the parent and student during a 15 to 30-minute meeting. Behavior goals could include academic targets (e.g., gets started on work right away, completes work accurately) or social-emotional targets (e.g., keeps hands/feet to self, asks for help when needed). Teachers rated each behavior up to three times per school day on a 3-point scale (0 = goal not met, 1 = needs improvement, 2 = goal met). Students were prompted to bring their DRC home daily to exchange points for rewards. Skills taught in the student groups were shared with teachers to promote cross-setting reinforcement and generalization.

SMHP Training, consultation, and fidelity monitoring. SMHPs in the Sinaloa school district have bachelor's or master's degrees in education but are not consistently required to receive training or observation in EBTs (Sanchez-Sosa, 2007; Stark et al., 2010). Typically, they are assigned caseloads of students with mental health disorders (approximately 20 students per caseload with a maximum of 25 students). SMHPs are provided a manual which contains information for educating youth with mental health disorders but lacks presentation of any specific strategies (*The New Mexican School*, 2019). We recruited SMHPs in the current study via their school principals. Each SMHP was assigned a member of our team as their primary trainer. To enhance consistency in training and feedback, each SMHP's primary trainer led (or co-led) their initial training and consultation meetings, as well as attended each session.

Each participating SMHP attended an initial 8-hour training with their trainer to learn psychoeducation about attention/behavior challenges and the principles supporting psychosocial ADHD/ODD intervention (such as structuring antecedents and providing reinforcement to encourage goal behaviors), learn and practice behavior management strategies to employ during meetings and groups (e.g., attention checks, differential reinforcement), as well as learn and practice the first meetings of each component (i.e., the first parent group, the first student group, the teacher orientation and the teacher-family-student DRC meeting). Each week during the program, SMHPs attended 60 to 90 min consultation meetings with their trainer to review upcoming manual content, role-play key content, and troubleshoot problems. SMHPs were provided a detailed, scripted manual for each component. In the initial training and weekly consultation meetings, trainers modeled intervention delivery, presented video clips of previous SMHPs delivering the intervention, and guided SMHPs in role-playing the intervention delivery.

Each parent, child, and classroom component session was led by SMHPs with in-vivo observation from their trainer to rate fidelity/engagement and answer questions or provide modeling of the curriculum as needed. Specifically, trainers monitored how much of the scripted manual content SMHPs delivered in each session, as well as the quality of SMHP delivery, including clarity in presenting each skill, effectiveness in responding to questions, use of group management strategies to maintain balance of participant involvement and enhance engagement, and use of time management strategies. Trainers also rated each participant's attendance and engagement in the session. Trainers provided prompting or modeling as needed to ensure accurate delivery of content, improve group implementation quality, and/or enhance participant engagement. Fidelity ratings were reviewed in weekly consultation meetings and strategies were discussed and practiced as needed to improve SMHP fidelity and participant engagement in future meetings.

BAU Condition. Those assigned to BAU received school services as usual. These services typically included tutoring with SMHPs. Of note, those in CLS-FUERTE also continued to receive school services as usual throughout the intervention period. After post assessments were completed (which occurred at the same time in both treatment conditions), BAU

families were invited to receive CLS-FUERTE and BAU SMHPs were trained to implement the program.

Measures

Fidelity, engagement, and acceptability. We rated the SMHP's fidelity to the intervention based on session content (rated 0 = *not at all* to 2 = *fully*) and quality of competence (1 = *low* to 5 = *high*). Teacher fidelity included the number of days the DRC was completed during the intervention period. We recorded parent and student group attendance in-vivo, rated parent and student engagement (1 = *never* to 5 = *very often*), and rated parent implementation of strategies (1 = *not at all* to 5 = *great deal*). Participants rated acceptability after every session and at post treatment.

ADHD and ODD symptoms. Parent and teacher ratings on the CSI-4 (Gadow & Sprafkin, 1994) assessed ADHD and ODD symptoms corresponding to the Diagnostic and Statistical Manual of Mental Disorders (4th ed.; American Psychiatric Association, 2010). Each symptom is rated on a 4-point scale (0= never to 3= very often). The English and Spanish versions have normative data, acceptable test–retest reliability, and acceptable predictive validity for ADHD and ODD diagnosis (Gadow & Sprafkin, 1997). Symptom severity ratings were completed at the same time points (baseline and post-treatment) regardless of treatment assignment and had high internal consistency in our sample (α. s = .87–.95).

Functional impairment. Parent- and teacher-ratings on the IRS (Fabiano et al., 2006) assessed impairment (i.e., academics and peer relations) on a seven-point scale (1 = no problem; does not need treatment/services to 7 = extreme impairment; definitely needs treatment/services). The IRS has excellent psychometric properties including strong temporal stability, correlations with other impairment ratings, discriminant validity, and predictive validity for an ADHD diagnosis (Fabiano et al., 2006). In the CLS-S trial, students demonstrated improvement in the Spanish IRS concurrent with improvements on the CSI-4, providing initial support for the Spanish version's psychometric properties (Haack et al., 2019). Mean severity for all IRS items served as our outcome measure and showed moderate to high internal consistency in the present sample (αs = .72–.85).

Data Analytic Approach

We performed all statistical analyses using SPSS (Version 26; IBM Corp, 2019). We analyzed outcomes in three domains (i.e., ADHD and ODD symptoms, and overall impairment) separately for each rater (i.e., parent and teacher). Primary analyses involved generalized estimating equations (GEE) using the SPSS GENLIN procedure with unstructured correlation matrices to examine within (baseline; post-treatment) and between (CLS-FUERTE vs BAU) group comparisons, adjusting for school clustering. GEE was chosen over alternative methods due to relaxed distribution requirements. Analyses were completed initially without covariates. We then performed follow-up analyses adjusting for parental level of education and child age, gender, and ADHD medication status; however, inclusion did not change the pattern or interpretation of results. Therefore, simple analyses without covariates are presented. To control for Type 1 Error, a Benjamini-Hochberg false discovery rate (FDR; Benjamini & Hochberg, 1995) was applied within domain. The FDR exerts a more powerful control over wrongly rejecting the null compared to other procedures that control for family-wise error (e.g., Bonferroni correction). For all pairwise comparisons, Hedges' *g* effect size metrics are provided. Hedges' *g* estimates are Cohen's *d* estimates corrected for the upward bias associated with smaller sample sizes. Interpretation of Hedges' *g* estimates are consistent with traditional effect size conventions (i.e., 0.2 = small; 0.5 = moderate; 0.8 = large).

Results

Fidelity, Engagement, and Acceptability

CLS-FUERTE fidelity and engagement ratings were high and comparable to findings from the CLS trial and CLS-S pilot (see Table 3). SMHPs covered 97% of parent session elements and 93% of child session elements with high levels of competence (M = 4.53 for parent group and 4.36 for student group out of 5). Clinician observer ratings of parent adherence to the program averaged 4.3 out of 5. Parent group attendance averaged above 76% and student attendance averaged above 94%. All students had at least one teacher/family meeting to establish the DRC. Teachers used the DRC an average of nearly 4 days out of 5 (M = 3.81).[1]

Parent, teacher, and student acceptability was high and similar to U.S. CLS findings (Pfiffner et al., 2016). Most parents and teachers (over 98%) rated CLS-FUERTE as appropriate or very appropriate for treating attention/academic/social skills problems, were satisfied or very satisfied with CLS-FUERTE, and would recommend or strongly recommend CLS-FUERTE to others (representing the two most favorable options on a 5-point scale). Most students reported they liked the group a lot (93%) and learned a lot (73%).

Outcomes

Treatment-related effects on parent- and teacher-rated ADHD Symptom Severity, ODD Symptom Severity, and Overall Impairment were analyzed in 2 (Group Status: CLS-FUERTE, BAU) X 2 (Time: Baseline, Post-Treatment)

Table 3. Fidelity and Engagement for Treatment Condition (BAU Excluded).

		Parent group		
		CLS-FUERTE	CLS-S	CLS
Measurement	Rater	($n = 28$)[a]	($n = 12$)	($n = 72$)
Provider fidelity	**C**	97%, high competence (4.53 of 5)	91%, high competence (4.94 of 5)	94%, high competence (4.40 of 5)
Participant attendance	**O**	76% (range = 0%–100%)	88% (range = 40%–100%)	79% (range = 0%–100%)
		Child group		
		CLS-FUERTE	CLS-S	CLS
Measurement	Rater	($n = 28$)[a]	($n = 12$)	($n = 72$)
Provider fidelity	**C**	93%, high competence (4.36 of 5)	99%, high competence (4.95 of 5)	97%, high competence (4.80 of 5)
Participant attendance	**O**	94% (range = 83%–100%)	90% (range = 67%–100%)	92% (range = 67%–100%)
		Classroom		
		CLS-FUERTE	CLS-S	CLS
Measurement	Rater	($n = 12$)[a]	($n = 12$)	($n = 72$)
Parent adherence	**C**	4.3 of 5 days	4.3 of 5 days	4.1 of 5 days
DRC use	**O**	3.8 of 5 days	3.2 of 5 days	4.1 of 5 days
Parent-child-teacher DRC meeting	**O**	100% at least 1	100% at least 1	100% at least 1

Note. CLS = Collaborative Life Skills program; CLS-S = CLS in Spanish; DRC = Daily Report Card; C = Clinician Observer; O = Objective Frequency.
[a]DRC use only available for first 2 of 4 schools.

GEE models adjusting for school clustering. As seen in Table 4, a similar pattern emerged across all outcomes, with one exception (i.e., parent-rated ODD). Specifically, significant main effects of Group, Time, and Group x Time interactions were observed. Follow-up pairwise comparisons using the Benjamini-Hochberg FDR indicate that there were no significant differences at baseline between CLS-FUERTE and BAU. Moderate- to large-magnitude between group differences were evident following the intervention. Further inspection indicates that students in both groups improved from baseline to post-treatment; however, those receiving CLS-FUERTE improved significantly more than those in BAU. For parent-rated ODD, a main effect of Time was observed, but the Group X Time interaction failed to reach significance, suggesting that all students improved similarly in parent-rated ODD regardless of group assignment.

Discussion

The current study is the first known RCT of a psychosocial school-home EBT in Latin America. Results suggest that CLS can be successfully implemented by SMHPs in Mexico, as evidenced by high feasibility, engagement, acceptability, and fidelity of CLS-FUERTE implementation. Our adaptation success likely is due to (1) ongoing collaboration between the CLS developers and the cultural adaptation team, (2) iterative revisions and adaptation efforts, and (3) guidance of theoretical models, as outlined in previous adaptation efforts (Baumann et al., 2014; Matos et al., 2006). This process may be a useful model for adapting EBT's for novel populations and/or settings. Our team included investigators with longstanding relationships in the school district, which likely aided our successful recruitment of schools. Our augmented outreach/recruitment protocol featuring school-wide meet-and-greets presenting silent videos may have contributed to our successful recruitment of families. These tactics may be advantageous for EBT recruitment in underserved global settings where families are unfamiliar with mental health terminology and treatment.

Findings also establish preliminary efficacy of CLS-FUERTE, as evidenced by significantly greater improvement in ADHD/ODD symptoms and impairment for treated students compared to students receiving school services as usual. Given accessibility and sustainability challenges associated with EBTs globally, it is encouraging that positive findings resulted from services delivered by existing

Table 4. Descriptives and Treatment Outcomes Controlling for School Cluster.

	CLS-FUERTE ($n = 28$)	BAU ($n = 30$)	Main effect time	Main effect group	Time X group interaction	Pairwise comparisons ES[a]		
Outcome	*M (SD)*	*M (SD)*	*B (SE)*	*B (SE)*	*B (SE)*	CLS-FUERTE versus BAU	CLS-FUERTE: Baseline versus Post	BAU: Baseline versus Post
Parent-rated ADHD symptom severity[b]							1.45†	0.70†
Baseline	2.00 (0.63)	2.06 (0.44)	0.88***	0.54**	−0.49**	0.11		
Post-Treatment	1.12 (0.53)	1.66 (0.66)	(0.12)	(0.16)	(0.15)	0.89†		
Teacher-rated ADHD symptom severity[b]							1.38†	0.63†
Baseline	2.15 (0.53)	2.37 (0.49)	0.85***	0.71***	−0.49**	0.43		
Post-Treatment	1.29 (0.69)	2.00 (0.66)	(0.16)	(0.18)	(0.18)	1.04†		
Parent-rated ODD symptom severity[b]							0.71	0.47
Baseline	1.52 (0.74)	1.69 (0.60)	0.51***	0.34	−0.17	0.25		
Post-Treatment	1.02 (0.63)	1.36 (0.77)	(0.11)	(0.19)	(0.17)	0.48		
Teacher-rated ODD symptom severity							0.89†	0.44†
Baseline	1.61 (0.85)	1.81 (0.66)	0.73***	0.60**	−0.41*	0.26		
Post-Treatment	0.89 (0.74)	1.49 (0.77)	(0.17)	(0.20)	(0.20)	0.78†		
Parent-rated Impairment [b]							1.17†	0.56†
Baseline	4.35 (1.32)	4.88 (1.15)	1.58***	1.32**	−0.80*	0.42		
Post-Treatment	2.78 (1.32)	4.10 (1.59)	(0.29)	(0.39)	(0.38)	0.89†		
Teacher-rated Impairment [b]							1.28†	0.07
Baseline	5.23 (1.27)	4.87 (1.04)	1.90***	1.47***	−1.83***	-0.30		
Post-Treatment	3.33 (1.64)	4.79 (1.15)	(0.40)	(0.38)	(0.50)	1.02†		

Note. ADHD = Attention Deficit/Hyperactivity Disorder; BAU = business-as-usual group; CLS-FUERTE = treatment group; ES = Effect Size; ODD = Oppositional Defiant Disorder; all analysis by original assigned groups.

*$p < .05$. **$p < .01$. ***$p < .001$. †Significant after within-domain Benjamini-Hochberg false discovery rate correction following significant Group X Time interaction.

[a]Standardized mean differences corrected for sample size bias (Hedges' *g*).

[b]Significant in original CLS trial.

SMHPs rather than external providers. Our success was likely to due to our training protocol incorporating active learning strategies and continued consultation, both of which are recommended strategies for effective clinical training (Beidas & Kendall, 2010; Nadeem et al., 2013).

Findings are compelling given the vulnerable population of interest, who traditionally experience high levels of unmet mental health need (Benjet et al., 2009). Indeed, less than a third of participating students were receiving medication and none had received behavioral treatment. Further, our sample represents one with lower SES levels than typically found in U.S. trials, suggesting the CLS approach generalizes across groups with diverse family factors.

Limitations and Future Directions

Results should be interpreted in light of several limitations. First, although our pilot sample size met proposed guidelines (Teare et al., 2014), it is too small to make generalized conclusions about schools across Mexico. This consideration is key, as schools are uniquely impacted by local sociopolitical and economic factors (Esposito & Villaseñor, 2018). Our schools were fairly representative of urban Sinaloa but were greater resourced than more rural districts, suggesting geographic expansion, particularly for more rural and economically disadvantaged districts (i.e., serving indigenous families) is warranted. Expansion may be supported by developing novel training methods to increase EBT scalability, such as "train-the-trainer" models (e.g., having trained SMHPs train new SMHPs) and/or remote training platforms. Future research should prioritize the examination of EBTs delivered via telehealth, as this delivery mechanism can overcome access barriers in more disadvantaged communities. Recent work provides supportive evidence that U.S. based clinicians can effectively deliver parent training via telehealth to rural and urban areas across the world (Tsami et al., 2019).

Our outcomes rely on parent and teacher reports, which could be subject to expectancy effects and bias. Additionally, our main outcome measure (the CSI-4) has adequate psychometric properties in English and Spanish (Gadow & Sprafkin, 2002) and our secondary outcome measure (the IRS) has initial support for adequate psychometric properties in Spanish from the CLS-S program trial in which students demonstrated improvement in the Spanish IRS concurrent with improvements on the CSI-4 (Haack et al., 2019). To date, there are no known studies to have examined the psychometric properties of these measures specifically in Mexico. Future studies should culturally adapt and validate widely used measures across diverse populations. In addition to validating measures across diverse samples, future studies should also incorporate more ecologically-relevant measures, such as report cards and disciplinary records or masked observations, to further support meaningful treatment outcomes of CLS-FUERTE in Mexico.

Further, logistical issues prevented us from collecting DRC data from half of our schools, which impacted our ability to make conclusions about DRC adherence. This is an important area of consideration for future research, given that research suggests that DRC adherence predicts improvements in classroom disruptive behavior (Fabiano et al., 2010; Pyle & Fabiano, 2017) and overall parent-rated organizational skills (Meza et al., 2020). One possible strategy that can facilitate the collection of DRC data is making the DRC electronic (Owens et al., 2019); an electronic DRC tool employed in context of a comprehensive program involving parents and teachers (such as the CLS program) could give teachers and parents easy access without relying on the child to bring the DRC home and to school every day. Electronic DRCs can also help parents and teachers graph progress across time, which can help teachers modify the target behaviors accordingly. That said, available data presented in this study are consistent with those presented in the original CLS trial (Pfiffner et al., 2016) and CLS-S pilot (Haack et al., 2019).

In addition, although students needed to have at least six inattention and/or hyperactivity symptoms and at least one area of impairment as rated by a parent or teacher to be included in the study, participants did not receive a formal assessment for ADHD/ODD diagnosis. This approach was chosen to increase ecological validity of the present investigation and maximize the likelihood of implementation and dissemination of CLS-FUERTE, given that provision of school services often does not require a formal diagnosis but rather evidence of symptoms and impairment. That stated, it is unclear if our results would generalize to clinic-based samples of diagnosed ADHD cases. However, given that parent and teacher reported symptom ratings are highly predictive of ADHD diagnosis, it seems promising that our results could be replicated in samples of formally diagnosed youth. Our assessments also did not capture other conditions that could impact results (e.g., trauma-related disorders, learning disorders). Having a better understanding of the neurodiversity in our samples as confirmed by formal assessments may afford nuanced analyses shedding light into why CLS-FUERTE works best and for whom (i.e., exploring mediators and moderators of outcomes). This may be helpful toward future efforts to adapt services for youth with multiple mental health comorbidities, particularly in context of the current sociopolitical climate in which many Mexican youth may be at an elevated risk for trauma.

Conclusions and Implications

Current pilot results suggest that school-home psychosocial EBTs delivered by Mexican SMHPs (such as CLS-FUERTE) not only maintain fidelity to the original intervention, but also improve youth attention and behavior relative to typical school services. These findings highlight

that SMHPs can effectively deliver EBTs in school settings at no cost to families, which can increase the accessibility of treatments in settings that typically are underserved and undertreated. Our work in Mexico has been well-received by the local participating schools and greater community, as evidenced by subsequent bottom-up efforts by the SEP to employ CLS-FUERTE in every school within the district. Expanding CLS-FUERTE across schools in Mexico has the potential to decrease the unmet need of mental health services in school-aged children, and can also serve as a viable alternative to medication treatment, which is not well accepted by the majority of families in Mexico. Novel approaches to increasing accessibility and sustainability of school-based EBTs may encourage the re-allocation of existing school resources to the application of empirically-supported services to serve our increasingly diverse global communities.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This project was supported by National Institutes of Health (NIH) Research Training Grant (# R25 TW009343) obtained by Dr.Haack funded by the Fogarty International Center (FIC) and the National Institute of Mental Health (NIMH), as well as the University of California Global Health Institute (UCGHI). This project also was supported by funding from a Health Initiative of The Americas- Berkeley School of Public Health Research Program on Migration and Health (PIMSA) grant awarded to Drs. Haack and Araujo. Drs. Meza and Friedman are supported by award number (T32MH018261)from the NIMH. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH.

ORCID iDs

Lauren Marie Haack https://orcid.org/0000-0002-3117-1166
Eva Angelina Araujo https://orcid.org/0000-0003-1984-4804

Note

1. DRC fidelity data only was available for the initial n = 4 out of total N = 8 schools due to logistical difficulty.

References

Agnew-Blais, J. C., Polanczyk, G. V., Danese, A., Wertz, J., Moffitt, T. E., & Arseneault, L. (2016). Evaluation of the persistence, remission, and emergence of attention-deficit/hyperactivity disorder in young adulthood. *JAMA Psychiatry*, *73*(7), 713. https://doi.org/10.1001/jamapsychiatry.2016.0465

American Psychiatric Association. (2010). *Diagnostic and statistical manual of mental disorders* (4th ed.). American Psychiatric Publishing.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Publishing.

Baumann, A. A., Domenech Rodríguez, M. M., Amador, N. G., Forgatch, M. S., & Parra-Cardona, J. R. (2014). Parent management training-oregon model (PMTO-TM) in Mexico City: Integrating cultural adaptation activities in an implementation model. *Clinical Psychology: Science and Practice*, *21*(1), 32–47. https://doi.org/10.1111/cpsp.12059

Beidas, R. S., & Kendall, P. C. (2010). Training therapists in evidence-based practice: A critical review of studies from a systems-contextual perspective. *Clinical Psychology: A Publication of the Division of Clinical Psychology of the American Psychological Association*, *17*(1), 1–30. https://doi.org/10.1111/j.1468-2850.2009.01187.x

Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: A practical and powerful approach to multiple testing. *Journal of the Royal statistical society: Series B (Methodological)*, *57*(1), 289–300.

Benjet, C., Borges, G., Medina-Mora, M. E., Zambrano, J., & Aguilar-Gaxiola, S. (2009). Youth mental health in a populous city of the developing world: Results from the Mexican adolescent mental health survey. *Journal of Child Psychology and Psychiatry*, *50*(4), 386–395. https://doi.org/10.1111/j.1469-7610.2008.01962.x

Bernal, G., Bonilla, J., & Bellido, C. (1995). Ecological validity and cultural sensitivity for outcome research: Issues for the cultural adaptation and development of psychosocial treatments with Hispanics. *Journal of Abnormal Child Psychology*, *23*(1), 67–82.

Borges, G., Benjet, C., Medina-Mora, M. E., Orozco, R., & Wang, P. S. (2008). Treatment of mental disorders for adolescents in Mexico City. *Bulletin of the World Health Organization*, *86*(10), 757–764. https://doi.org/10.1590/S0042-96862008001000011

Borges, G., Mora-Icaza, M. E. M., Benjet, C., Lee, S., Lane, M., & Breslau, J. (2011). Influence of mental disorders on school dropout in Mexico. *Revista Panamericana de Salud Pública*, *30*(5), 477–483. https://doi.org/10.1590/S1020-49892011001100011

Borges, G., Nock, M. K., Medina-Mora, M. E., Hwang, I., & Kessler, R. C. (2010). Psychiatric disorders, comorbidity, and suicidality in Mexico. *Journal of Affective Disorders*, *124* (1–2), 98–107, https://doi.org/10.1016/j.jad.2009.10.022.

Canino, G., Polanczyk, G., Bauermeister, J. J., Rohde, L. A., & Frick, P. J. (2010). Does the prevalence of CD and ODD vary across cultures? *Social Psychiatry and Psychiatric Epidemiology*, *45*(7), 695–704. https://doi.org/10.1007/s00127-010-0242-y

Caye, A., Spadini, A. V., Karam, R. G., Grevet, E. H., Rovaris, D. L., Bau, C. H. D., Rohde, L. A., & Kieling, C. (2016). Predictors of persistence of ADHD into adulthood: A systematic review of the literature and meta-analysis. *European Child & Adolescent Psychiatry*, *25*(11), 1151–1159. https://doi.org/10.1007/s00787-016-0831-8

Chalita, P. J., Palacios, L., Cortes, J. F., Panza, K. E., Landeros-Weisenberger, A., & Bloch, M. H. (2012). Relationship of dropout and psychopathology in a high school sample in Mexico. *Frontiers in Psychiatry*, *3*, 20–38

Danielson, M. L., Visser, S. N., Chronis-Tuscano, A., & DuPaul, G. J. (2018). A national description of treatment among United States children and adolescents with attention-deficit/hyperactivity disorder. *The Journal of Pediatrics*, *192*, 240–246.e1. https://doi.org/10.1016/j.jpeds.2017.08.040

Domenech-Rodriguez, M., & Wieling, E. (2005). Developing culturally appropriate, evidence-based. In M. Rastogi & E. Wieling's (Eds.), *Voices of color: First-person accounts of ethnic minority therapists* (pp. 313–333). Sage.

Espinola-Nadurille, M., Vargas Huicochea, I., Raviola, G., Ramirez-Bermudez, J., & Kutcher, S. (2010). Mental health care reforms in Latin America: Child and adolescent mental health services in Mexico. *Psychiatric Services*, *61*(5), 443–445. https://doi.org/10.1176/ps.2010.61.5.443

Esposito, L., & Villaseñor, A. (2018). Wealth inequality, educational environment and school enrolment: Evidence from Mexico. *The Journal of Development Studies*, *54*(11), 2095–2118.

Evans, S. W., Owens, J. S., Wymbs, B. T., & Ray, A. R. (2018). Evidence-based psychosocial treatments for children and adolescents with attention deficit/hyperactivity disorder. *Journal of Clinical Child & Adolescent Psychology*, *47*(2), 157–198. https://doi.org/10.1080/15374416.2017.1390757

Fabiano, G. A., Pelham, W. E., Jr., Waschbusch, D. A., Gnagy, E. M., Lahey, B. B., Chronis, A. M., Onyango, A. N., Kipp, H., Lopez-Williams, A., & Burrows-MacLean, L. (2006). A practical measure of impairment: Psychometric properties of the impairment rating scale in samples of children with attention deficit hyperactivity disorder and two school-based samples. *Journal of Clinical Child & Adolescent Psychology*, *35*(3), 369–385. https://doi.org/10.1207/s15374424jccp3503_3

Fabiano, G. A., Vujnovic, R. K., Pelham, W. E., Waschbusch, D. A., Massetti, G. M., Pariseau, M. E., Naylor, J., Yu, J., Robins, M., Carnefix, T., Greiner, A. R., & Volker, M. (2010). Enhancing the effectiveness of special education programming for children with attention deficit hyperactivity disorder using a daily report card. *School Psychology Review*, *39*(2), 219.

Gadow, K. D., & Sprafkin, J. (1994). Manual for the stony brook child symptom inventories. *Child Symptom Inventory: Parent Checklist. Child Symptom Inventory: Teacher Checklist*. Checkmate Plus.

Gadow, K. D., & Sprafkin, J. (1997). *ADHD symptom checklist-4 manual*. Checkmate Plus.

Gadow, K. D., & Sprafkin, J. N. (2002). *Child symptom inventory 4: Screening and norms manual*. Checkmate Plus.

Haack, L. M., Araujo, E. A., Delucchi, K., Beaulieu, A., & Pfiffner, L. J. (2019). The collaborative life skills program in Spanish (CLS-S): Pilot investigation of intervention process, outcomes, and qualitative feedback. *Evidence-Based Practice in Child and Adolescent Mental Health*, *4*(1), 18–41.

Haack, L. M., Gerdes, A. C., Lawton, K. E., & Schneider, B. W. (2014). Understanding and measuring functional impairment in diverse children with ADHD: Development of the ADHD-FX Scale with an at-risk, community sample. *Journal of Attention Disorders*, *20*(6), 487–500. https://doi.org/1087054714527791

Hayes, R., & Moulton, L. (2009). *Cluster randomized trials*. Chapman & Hall/CRC.

Karam, R. G., Breda, V., Picon, F. A., Rovaris, D. L., Victor, M. M., Salgado, C. A. I., Vitola, E. S., Silva, K. L., Guimarães-da-Silva, P. O., Mota, N. R., Caye, A., Belmonte-de-Abreu, P., Rohde, L. A., Grevet, E. H., & Bau, C. H. D. (2015). Persistence and remission of ADHD during adulthood: A 7-year clinical follow-up study. *Psychological Medicine*, *45*(10), 2045–2056. https://doi.org/10.1017/S0033291714003183

Kumpfer, K. L., Alvarado, R., Smith, P., & Bellamy, N. (2002). Cultural sensitivity and adaptation in family-based prevention interventions. *Prevention Science*, *3*(3), 241–246. https://doi.org/10.1023/A:1019902902119

Matos, M., Bauermeister, J. J., & Bernal, G. (2009). Parent-child interaction therapy for Puerto Rican preschool children with ADHD and behavior problems: A pilot efficacy study. *Family Process*, *48*(2), 232–252.

Matos, M., Torres, R., Santiago, R., Jurado, M., & Rodríguez, I. X. A. (2006). Adaptation of parent–child interaction therapy for Puerto Rican families: A preliminary study. *Family Process*, *45*(2), 205–222.

Meza, J. I., Friedman, L. M., Dvorsky, M. R., Kass, P., Chabbra, D., & Pfiffner, L. J. (2020). Outcomes of school–home intervention for attention and behavior problems: Teacher adherence matters. *School Mental Health*, 1–13.

Nadeem, E., Gleacher, A., & Beidas, R. S. (2013). Consultation as an implementation strategy for evidence-based practices across multiple contexts: Unpacking the black box. *Administration and Policy in Mental Health*, *40*(6), 439–450. https://doi.org/10.1007/s10488-013-0502-8

Owens, J. S., McLennan, J. D., Hustus, C. L., Haines-Saah, R., Mitchell, S., Mixon, C. S., & Troutman, A. (2019). Leveraging technology to facilitate teachers' use of a targeted classroom intervention: Evaluation of the Daily Report Card. Online (DRC. O) System. *School Mental Health*, *11*(4), 665–677.

Palacios-Cruz, L., Peña, F. de la, Valderrama, A., Patiño, R., Portugal, C., Pamela, S., & Ulloa, R. E. (2011). Conocimientos, creencias y actitudes en padres mexicanos acerca del trastorno por déficit de atención con hiperactividad (TDAH). *Salud Mental*, *34*(2), 149–155.

Pelham, W. E., Jr., & Hoza, B. (1996). Intensive treatment: A summer treatment program for children with ADHD. In A. summer, D. E. D. Hibbs, & P. S. Jensen (Eds.), *Psychosocial treatments for child and adolescent disorders: Empirically based strategies for clinical practice* (pp. 311–340). American Psychological Association.

Pfiffner, L. J., & Haack, L. M. (2014). Nonpharmacological treatments for childhood ADHD and their combination with medication. In P. E. Nathan & J. M. Gorman (Eds.), *A guide to treatments that work* (4th ed., pp. 55–84). Oxford University Press.

Pfiffner, L. J., Rooney, M. E., Jiang, Y., Haack, L. M., Beaulieu, A., & McBurnett, K. (2018). Sustained effects of collaborative school-home intervention for Attention-Deficit/Hyperactivity

Disorder Symptoms and impairment. *Journal of the American Academy of Child & Adolescent Psychiatry*, *57*(4), 245–251. https://doi.org/10.1016/j.jaac.2018.01.016

Pfiffner, L. J., Rooney, M., Haack, L., Villodas, M., Delucchi, K., & McBurnett, K. (2016). A randomized controlled trial of a school-implemented school–home intervention for Attention-Deficit/Hyperactivity Disorder symptoms and impairment. *Journal of the American Academy of Child & Adolescent Psychiatry*, *55*(9), 762–770. https://doi.org/10.1016/j.jaac.2016.05.023

Polanczyk, G. V., Salum, G. A., Sugaya, L. S., Caye, A., & Rohde, L. A. (2015). Annual research review: A meta-analysis of the worldwide prevalence of mental disorders in children and adolescents. *Journal of Child Psychology and Psychiatry*, *56*(3), 345–365. https://doi.org/10.1111/jcpp.12381

Pyle, K., & Fabiano, G. A. (2017). Daily report card intervention and attention deficit hyperactivity disorder: A meta-analysis of single-case studies. *Exceptional Children*, *83*(4), 378–395.

Sanchez-Sosa, J. J. (2007). Psychotherapy in Mexico: Practice, training, and regulation. *Journal of Clinical Psychology*, *63*(8), 765–771. https://doi.org/10.1002/jclp.20391

Stark, M. D., Frels, R. K., Chavez, R. R., & Sharma, B. (2010). The practice of psychotherapy in Mexico: Past and present. *Journal of Multicultural Counseling and Development*, *38*(1), 27–38. https://doi.org/10.1002/j.2161-1912.2010.tb00111.x

Substance Abuse and Mental Health Services Administration. (2018). Key substance use and mental health indicators in the United States: Results from the 2017 National Survey on Drug Use and Health (HHS Publication No. SMA 18-5068, NSUDH Series H-53). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/NSDUHFFR2017/NSDUHFFR2017.pdf.

Teare, M. D., Dimairo, M., Shephard, N., Hayman, A., Whitehead, A., & Walters, S. J. (2014). Sample size requirements to estimate key design parameters from external pilot randomised controlled trials: A simulation study. *Trials*, *15*(1), 264.

The New Mexican School. (2019). *Mexican ministry of public education*. https://educacionbasica.sep.gob.mx/publications/pub/1003/Gu%C3%ADas+Ciclo+Escolar+2019-2020

Tsami, L., Lerman, D., & Toper-Korkmaz, O. (2019). Effectiveness and acceptability of parent training via telehealth among families around the world. *Journal of Applied Behavior Analysis*, *52*(4), 1113–1129.

Author Biographies

Lauren Marie Haack, PhD is an associate clinical professor of Psychiatry and Behavioral Sciences and Attending Psychologist at the University of San Francisco, California (UCSF). Her research and clinical interests focus on 1) cultural influences to mental health conceptualization, assessment, and treatment, and 2) accessible, culturally appropriate, and technology-enhanced evidence-based services for vulnerable youth and families worldwide. When not conducting clinical research, she dedicates clinical time to the UCSF Hyperactivity Attention and Learning Problems (HALP) and Mood/Anxiety Wavefront programs providing evidence-based services, supervision, and training.

Eva Angelina Araujo, PhD is a full-time research professor at the Universidad Autnoma de Sinaloa in Culiacan, Mexico. Her primary research interests are related to the assessment, diagnosis and treatment of ADHD in clinical practice. The goals of her research are to improve the nosological consolidation of the disorder, reduce inaccurate diagnoses, and provide appropriate intervention in the community.

Jocelyn Meza, PhD, is a current NIMH T32 and Chancellor's postdoctoral fellow at the University of California, San Francisco. Her research focuses on: 1) understanding the risk and protective factors associated with self-harm and depression in adolescents with ADHD, and 2) examining predictors and moderators of positive treatment outcomes of evidence based treatments for children and adolescents. Clinically, Dr. Meza has experience in evidence-based treatments for children and adolescents with ADHD, anxiety, depression and histories of self-harm.

Lauren M. Friedman, PhD, currently is an assistant professor in the Department of Psychology at Arizona State University. Her research centers on understanding the etiology of childhood ADHD to inform interventions for the disorder. She examines the cognitive processes contributing to the core symptoms and functional deficits associated with ADHD through both experimental and meta-analytic techniques. She uses this knowledge to optimize behavioral interventions for youth with ADHD and their families using novel treatment adaptations and approaches.

Madeline Spiess, BA, has coordinated and managed several clinical trials for children and adults with attention and behavior challenges at the University of California, San Francisco (UCSF). She is currently a first year doctoral student in the Counseling, Clinical, and School Psychology program with an emphasis in School Psychology at the University of California, Santa Barbara (UCSB). She is interested in and passionate about culturally responsive practices and early interventions for families and school communities.

Dulce Karely Alcaraz Beltrán is a psychologist and master's degree student at the Universidad Veracruzana. She was research coordinator of the CLS-FUERTE program in Mexico. Her main research interests are focused on timely behavioral services for children to improveschool and social performance. She is currently studying the implementation of behavioral strategies of classroom teachers that promote adequate educational inclusion for all students.

Kevin Delucchi, PhD, is professor emeritus of Biostatistics in Psychiatry in the Department of Psychiatry and Behavioral Sciences at UCSF. Dr. Delucchi has been Principal Investigator on NIH-funded research and was Director of the Informatics and Statistics Core of the FDA/NCI-funded Tobacco Center of Regulatory Science. For 20 years he was the Director of the Statistics Core of the NIDA-funded Treatment Research Center and a member of two of NIH's Center for Scientific Review committees. With over 250 peer-reviewed publications Dr. Delucchi is an active collaborator, consultant, and co-author with numerous

investigators, post-doctoral fellows, other trainees and faculty. His primary research focus is on the application of appropriate statistical methodology to the analysis of data types commonly found in social science and medical research.

Ambrocio Mojardín Herladez, PhD, was a full-time research professor at the Autonomous University of Sinaloa (UAS) for approximately 30 years and was director of the Faculty of Psychology. He was the founder of the Memory and Learning Research Laboratory. His academic career included teaching in bachelor's, master's, and doctorate programs in Mexico, Brazil, and the United States. He was the coordinator and co-author of three books and received recognition for his publications on memory on behalf ofthe Mexican Scientists of World Impact and the Thomson Reuters agency.He was a member of the National System of Researchers, the Mexican System of Research in Psychology, and the American Psychological Association. He was coordinator of the Sinaloa State Public Safety Council. He passed away on March 28, 2020.

Linda Pfiffner, PhD, is a professor in the Department of Psychiatry and Behavioral Sciences at the University of California San Francisco and is director of the Hyperactivity, Attention and Learning Problems program. Her research is broadly focused on developing and evaluating psychosocial interventions for ADHD and translating clinic-based treatment models to school settings and diverse populations. Her recent research has focused on leveraging technology in provider training and treatment programs to increase treatment access, adherence, sustainability and dissemination.