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## A Systematic Review of Cultural Adaptations of School-based Social, Emotional & Behavioral Interventions for Students of Color: A Replication & Update of Brown et al, 2018

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A SYSTEMATIC REVIEW OF CULTURAL ADAPTATIONS OF SCHOOL-BASED  
SOCIAL, EMOTIONAL, AND BEHAVIORAL INTERVENTIONS FOR STUDENTS OF  
COLOR: A REPLICATION AND UPDATE OF BROWN ET AL. 2018

A Specialist Project submitted in partial fulfillment  
of the requirements for the degree  
Specialist in Education

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By  
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May, 2023


A SYSTEMATIC REVIEW OF CULTURAL ADAPTATIONS OF SCHOOL-BASED SOCIAL, EMOTIONAL, AND BEHAVIORAL INTERVENTIONS FOR STUDENTS OF COLOR: A REPLICATION AND UPDATE OF BROWN ET AL. 2018

Courtney Coleman

Date Recommended 4/13/2023

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## ABSTRACT

### A SYSTEMATIC REVIEW OF CULTURAL ADAPTATIONS OF SCHOOL-BASED SOCIAL, EMOTIONAL, AND BEHAVIORAL INTERVENTIONS FOR STUDENTS OF COLOR: A REPLICATION AND UPDATE OF BROWN ET AL. 2018

Underrepresented minority students are excluded from schools for disciplinary reasons at a higher rate than majority students. School-based positive social, emotional, and behavioral interventions could be implemented to support URM students who have behavioral needs. These interventions might need adaptations to meet the needs of diverse students in K-12 schools. However, there have been limited syntheses of these adaptations. The purpose of this review is to update Brown et al.'s (2018) systematic review of culture adaptations to social, emotional, and behavioral interventions. The current article pool consisted of seven articles from 2016 to 2021. The seven articles for the current literature review were coded for procedural, content, and program delivery adaptations. The results showed that most of the articles included the adaptations within their study; however, there were some adaptations that were not made or made at low rates. The most frequent procedural adaptations were resource evaluation and adaptation documentation. Community engagement was found in the majority of studies as well. The most frequently reported content adaptation was coded as program content. The most frequent program delivery adaptations were implementer and persons. This replication highlights the current trends in culturally adapted social, emotional, and behavioral interventions for URM students. The possible benefits for schools and students, as well as trends in adaptations are discussed.

Keywords: Cultural Adaptations, School-Based behavioral intervention, Underrepresented Minority Students, Positive behavior support

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## **Introduction**

Underrepresented minority (URM) students are students of color that hold a smaller percentage within a larger subgroup. URM students face higher negative behavioral outcomes at school. Students of color are rated as more disruptive than their White peers, and teachers might use more negative feedback towards them during classroom instruction (Scott et al., 2019). More frequent negative direct feedback is often given to URM individuals and small groups, as well as gestures like teacher rolling their eyes, shaking their head to indicate the answer is wrong, or simply ignoring the incorrect answer given by the student and moving onto another student (Scott et al., 2019). Further, URM students are more likely to be identified with behavior problems and suspended (Cruz et al., 2018; Morgan et al., 2019). It was also found that students of minority racial and cultural backgrounds were found to be labeled as emotionally disturbed and excluded from school more often than White students (Bal et al., 2019).

URM students are more likely to receive exclusionary punishment within schools, as well. Exclusionary punishment is when students are removed or excluded from the educational setting due to a reported problem behavior. However, URM students might experience heightened risks for exclusionary punishment. For example, African American students who have an intellectual disability (ID) and experience any form of exclusionary punishment have increased juvenile justice contact compared to their neurotypical African American and White peers (Mendoza et al., 2020). Due to exclusionary punishment being detrimental to URM students, alternative practices are needed to increase inclusion in their school. Practices such as positive behavior intervention and supports (PBIS) and positive climates could be helpful for URM inclusion (Brown et al., 2018; Green et al., 2018).

## **Exclusionary Punishment**

Two forms of exclusionary punishment within the school system are suspension and expulsion (Noltemeyer et al., 2010). Suspension can be administered as out-of-school (OSS) and in-school suspension (ISS). OSS is seen as the denial of attendance at school up to 10 days (Noltemeyer et al., 2010). ISS is the removal from the classroom, where the student remains in-school as an alternative discipline practice. Expulsion is identified as the involuntary removal of a student from school by an administrator (Noltemeyer et al., 2010).

Research shows that exclusionary punishment is associated with negative consequences for students including increased delinquent behavior and grade retention, and lower academic performance (Gerlinger et al., 2021). There is evidence that there are stronger effects of exclusionary punishment than the useful effects of most prevention programs on delinquency (Gerlinger et al., 2021). Exclusionary punishment has a negative effect on academics. In general, exclusionary punishment is associated with decreased math and reading scores compared to students who are not suspended (e.g., Lacoë et al., 2019). Specifically, expulsion has a significantly more negative effect on math test scores than other exclusionary punishments. Students who generally experience non-exclusionary punishments tend to have higher scores on math tests (Anderson et al., 2019). It is also seen that students who experience exclusionary punishment, such as OSS and ISS are at greater risk for grade retention when compared to students who generally experience non-exclusionary punishment (Anderson et al., 2019). In general, exclusionary punishment increase negative scholastic outcomes, even when compared to other types of punishment in schools.

Schools that use exclusionary punishment as a form of punishment for student violations tend to approach behavior problems by removing the student that is misbehaving from the classroom, rather than addressing their behavioral needs (Gerlinger, 2020). Misconceptions

regarding the use of exclusionary punishment include improving the environment for teaching and learning, discouraging other students in the classroom from becoming involved in identical undesirable behaviors, and attracting the attention of the parents so they are actively involved (Green et al., 2018). Exclusionary punishment is often reliant on teacher perceptions and expectations. Teacher perceptions and expectations frequently mismatch with values and expectations that URM or low socioeconomic status (SES) students have outside of the school or classroom setting. This might lead teachers to assume that students are purposefully misbehaving, and in turn increases classroom exclusion. Overall, these students tend to respond with behaviors they have learned outside of school rather than adjusting to what the teachers' expectations. This has led schools to target the students with punishment procedures rather than teachers' instructional practices (Welsh & Little, 2018). A more beneficial change might be improving teachers' instruction on classroom expectations and behavior management strategies.

### **Positive Behavior Supports in Schools**

One important behavior support that is seen within the schools is school-wide positive behavior interventions and supports (SWPBIS). SWPBIS is a three-tiered model of evidence-based practices for all students to help improve their social and behavioral outcomes (Cumming et al., 2019). School-wide procedures are seen as tier 1, as they are available to all students, and are aimed at benefitting the student body as a whole. In contrast, tier 2 services in this model provide more targeted behavior supports related to improving student behavior related to classroom or school-wide expectations to small groups or individuals through low-intensity interventions. Tier 3, however, uses highly individualized plans for students with intensive intervention. These different tiers give all the students an opportunity to benefit from meeting

social, emotional, and behavioral expectations, as well as scaffold support to decrease the chance of needing intensive interventions for some students (Cumming et al., 2019).

Tier 1 practices are designed supports all students' social, emotional, and behavioral needs and about 80% of student population should benefit from these supports. The interventions are conducted in all settings of the school (e.g., classroom, hallways, playground, and lunchroom; Cumming et al., 2019). Tier 1 establishes and teaches specific rules and expectation, school routines, and uses evidence-based classroom management within a school-wide system for recognizing appropriate behaviors (Lee & Gage, 2020). Schools that implement universal Tier 1 with fidelity and either tier 2 or 3 with fidelity, or all three tiers with fidelity have significantly fewer OSS than schools who are not implementing SWPBIS. However, it was found that expulsion had no direct relation with SWPBIS, which might be because other factors contribute to this outcome, irrespective of SWPBIS in elementary schools (Gage et al., 2020). Additionally, schools that have implemented SWPBIS with fidelity also showed significantly fewer behavioral occurrences (e.g., being disrespectful to others and disruptive behavior) that result in office discipline referrals (ODRs) and suspensions (Gage et al., 2018). Further using tier 1 supports and interventions could decrease problem behaviors for students with severe disabilities when systematic instructional strategies are implemented to help teach the students specific school-wide routines and expectations (Loman et al., 2018).

Twenty percent of the schools' students usually receive Tier 2 supports, and if it is done correctly then 15% of students benefit from these services. Tier 2 in SWPBIS includes interventions are more focused and frequent than tier 1 (Cumming et al., 2019), such as small group instruction for students to use specific social interaction strategies (Lee & Gage, 2020), or moderate intensity individual interventions that are delivered by general education staff. These

interventions are added onto tier 1 services being implemented in general education and allow the students, who need supplemental services get help with areas related to classroom behavioral expectations. A few examples of tier 2 individual interventions are Class Pass Intervention (CPI) and Check-In/Check-Out (CICO). CPI is when students are taught to request a pass after they complete a prescribed proportion of their assignment. These passes teach students how to appropriately ask for a break when working on low-preference activities (Narozanick et al., 2019). CPI uses escape as a reinforcer after producing desired behaviors to promote behavior change. CICO how to follow classroom expectations. In CICO, the adult mentor and the student go over expectations for the student that best fit their needs. Students are required to start and end their day with checking in and out with an adult mentor. During these meeting times, students and the adult mentor go over the expectations and discuss a behavioral performance goal for the day. At the end of the day, the adult mentor goes over the teacher's report for the day and provides reinforcement if the student meets the behavioral performance goal that was set for the day (Park & Blair, 2020). CICO leverages attention and tangible reinforcement to promote changes in behavior.

Tier 2 interventions can also include highly focused group interventions. For example, Lunch Bunch Social Skills Club was developed to provide lessons based on targeted social skills. For students to qualify for this intervention, students had to receive a low score on rating scales completed by teachers and parents and have four ODRs in the first quarter of school from negative social incidents on the playground. Each lesson was counselor lead and provides specific instruction, modeling, and time to practice the social skills with other group members (Lane et al., 2014).

Tier 3 typically includes approximately 5% of students and is highly individualized when compared to Tier 2 (Lower et al., 2016). Tier 3 interventions may be implemented inside and outside of the general education setting and are more resource intensive than Tier 2 strategies. Tier 3 involves a team to assess the students' behavioral needs, as well as putting together an individualized plan for the student to be successful in the school. These plans also take into consideration what the student and family values believe will be best for the child (Sugai & Horner, 2020). Once these data are collected, the team can work together to find what interventions should be put in place to help the student succeed. For example, a student could receive CICO along with additional supports, which is an intensification of CICO. These could include a diagnostic assessment like a functional behavior analysis (FBA), and the combined use of self-monitoring checklists with daily training for acquisition and social skills (e.g., Kern & Wehby, 2014). Something else that can be used with a tier 3 intervention is a Behavior Intervention Plan (BIP). A BIP is a step by step guide to help redirect a student's behavior. It can also specify targeted small groups interventions. These individualized plans provide specific goals and target behaviors for students and help teachers implemented interventions for those specific needs (Ziomek-Daigle et al., 2019).

### **Research Generalization and Cultural Adaptation**

Existing research may not be generalizable to URM students because they have not been well represented in previous research. A challenge for research in special education is concluding positive outcomes within the educational setting and classroom, rather than in clinical settings and controlled environments. Generalizing research to and across applied settings has been supported; however, it is presumed that generalization is better when population samples, settings, and target conclusions are similar across research contexts (Brown et al., 2018).

Nonetheless, a specific challenge is that researchers often use convenience sampling, rather than deliberately obtaining a sample that is more realistic across different applied settings (Brown et al., 2018). This can be seen as a problem due to not being able to generalize the research to multiple settings with the intended populations.

Additionally, it is important to understand the different variables that affect successful generalization of applied research to URM students. These variables could include clear and descriptive explanations of the racial, ethnic, and cultural makeup of the sample, as well as representations of URM students consistent with the population. A previous review by Brown and colleagues (2018) showed that studies related to behavioral support for students published around 1997 had small samples sizes of URM students; however, an evaluation of research in special education journals showed an increase of URM students in studies over 20 years. To expand on this, Rowe and Trickett (2018) found that only 15 of 41 articles they sampled related to behavioral support for students specified what parts of the program were either beneficial across groups or had limited generalizability. Moreover, six articles mentioned how student diversity might have an effect on program generalizability and the authors provided an explanation of the reasons (Rowe & Trickett, 2018). Nonetheless, there is evidence that addressing adaptation of interventions for URM student has increased in recent years (Brown et al., 2018; Arora et al., 2021).

### **Cultural Adaptation and Frameworks**

Cultural adaptation is when an evidence-based intervention is modified to better fit characteristics of a target population. It takes into consideration the language, culture, and context so that the intervention is compatible with the client's culture to support its implementation, effectiveness, and sustainability (Brown et al., 2018; Castellanos et al., 2020).

Culture is a multifaceted structure and interventions are made up of several flexible features. When considering and implementing cultural adaptations, systematic procedures need to be used. This approach also allows researchers to document the adaptations and supports replication of validated practices (Brown et al., 2018). Frameworks that have been developed to support the cultural adaptation of interventions focusing on different features. In general, there is a range of flexible characteristics for increasing the cultural relevance of an intervention, practice, or strategy for a specific population while also supporting the operational definitions of these adaptations. Cultural adaptations to content, program delivery, and procedural considerations are three common features used and changed in research and practice (Brown et al., 2018).

**Content adaptations.** The ecological validity model is an outline to help direct the culturally sensitive adaptations of interventions for different cultural groups (O’Conner et al., 2020). It has been found that cultural adaptations are described in an ecological validity model when there is equivalence between the environment of the individual and the interventions’ properties (Brown et al., 2018). Within this model, content adaptations are specifically identified tangible components to consider when adapting an intervention for a new population of students. These different tangible components to consider include language, metaphors, concepts, values, customs, goals, and traditions (Brown et al., 2018). More recently, the most frequent content adaptations include including culturally appropriate risk factors, language, values and traditions, having therapist-client match on race/ethnicity, culturally applicable examples, scenarios, and stories (Arora et al., 2021).

**Program delivery adaptations.** While changing the content of the intervention can help enhance relevance to URM student, making changes to the implementation process can also increase cultural equivalence. Some important factors with program implementation include



looking at the expertise and training of the people implementing the intervention, the methods that are used for implementation, and context of where the intervention is located. These allow the researcher to look at the target setting and develop measures to support enhanced application and correspondence to what the target population might be responsive to (Brown et al., 2018). For example, interventions have been adapted to fit different treatment contexts, such as classrooms, clinics, religious settings, and the clients' homes (Arora et al., 2021).

**Procedures for considering adaptations.** Improving the relevance of an intervention requires evaluating the individuals and the structures in the targeted setting (Brown et al., 2018). There is a need to adapt the intervention to fit the needs and resources of the school community, and how to get the adaptations is through collaboration with stakeholders. These include methods used to create an appropriate balance between standard protocol authorized in research and the resources and proficiency available in everyday settings (Brown et al., 2018). It is recommended for the individuals that oversee adapting the intervention to talk with the school community to evaluate the program's purpose and seek advice with the developer of the program, if possible (Brown et al., 2018). For example, changing the way items on a scale are listed and using an answering scale that is most commonly used in the target culture can help make the content clearer and more relevant to the targeted culture (Anacleto de Araujo et al., 2021). Moreover, others have found that various stakeholders (e.g., parents, adolescents, creators of implementation teams, public managers) can recommend changes to activities, personnel support, and adapting student consequences for behavior to make them more culturally relevant (Murta et al., 2018).

**Previous review of adaptations.** Brown and colleagues (2018) reviewed research of cultural adaptations for social, emotional, and behavioral interventions within the schools. Brown

et al. (2018) looked at procedural adaptations, content adaptations, and program delivery adaptations. It was found that 10 articles met the inclusion criteria. Inclusion criteria included research taking place in the school settings, students with or at-risk for emotional or behavioral disorders (EBD), the intervention was designed to address social, emotional, or behavioral outcomes, and there was a purposeful and concentrated effort to adapt the intervention for use with students of color (Brown et al., 2018).

Out of the ten studies, they found procedural adaptations were related to community engagement (90%), program review (70%), resource evaluation (70%), training evaluation (70%), adaptation documentation (70%), consult developer (60%), fidelity balance (50%), and theory of change (30%). As for content adaptations, language (100%) and content (80%) were the most frequent, with metaphors (40%), concepts (40%), and goals (20%) being less frequent adaptations. For program delivery adaptations, it was found that implementer (100%) and context (70%) were the most frequent, with location delivery location (60%), persons (40%), methods (30%) being less frequently used in studies, and delivery channel (0%) not being seen at all (Brown et al., 2018). In recent years, behavior support literature has had an increased focus on underrepresented groups (e.g., Girvan et al., 2017; Gregory et al., 2018; Zakszeski et al., 2021). An updated review of the research could provide additional information to the initial review which had a small sample of articles.

### **Project Purpose**

The purpose of this study is to update Brown et al.'s (2018) review of the literature on culture adaptations to social, emotional, and behavioral interventions. The growing research of cultural adaptations within school-based social, emotional, and behavioral interventions makes it important to document and update as new information could be used to better direct areas of

investigative need. The replication will use the same research questions as Brown et al. (2018), which are: (1) How frequently have researchers used recommended procedures to inform the selection and development of cultural adaptations of school-based social, emotional, and behavioral interventions? (2) How frequently have researchers used recommended content adaptations to modify interventions for culturally adapting school-based social, emotional, and behavioral interventions? and (3) How frequently have researchers used recommended program delivery adaptations for culturally adapting school-based social, emotional, and behavioral interventions? The research questions will be answered by following the steps that are outlined in Brown et al. (2018).

## Method

### Article Selection Pool

The studies in this review were found using a four-step process. First, applicable studies were identified through an electronic database search using three educational and social sciences databases: (1) Educational Resources Information Center (ERIC), (2) PsychINFO, (3) ProQuest Dissertations & Theses Global. To obtain the greatest number of citations, the database search was performed using the most frequent descriptors for (a) social, emotional, and behavioral interventions, (b) cultural adaptations, and (c) school contexts. More specifically, the following search terms were used together for ERIC and PsychINFO: “cultural adaptation\*” AND “social\*” OR “emotional\*” OR “behavior\*” AND “school” AND “intervention” OR “program” OR “practice.” For ProQuest Dissertations and Theses Global the following search terms were used: “(cultural adaptation)” AND “(positive behavior intervention strategies in schools).” First, index terms were reviewed and the following were added: “special education,” “diversity,” “intervention,” and “high school.” Next, the subject terms were reviewed and the following were added: “secondary education,” “multicultural education,” “elementary education,” “social research,” “behavioral sciences.” The articles from the original search from 1997 to 2017 were accepted for training purposes for interrater reliability for the primary investigator and the secondary coder. Because the original search might have missed recently accepted or published articles this search will start with 2016. Further, cultural adaptations for school-based interventions remains a growing area; therefore, a decision to search over a 5-year span between 2016 and 2021 is believed will yield a substantial set of new findings. The search process for the current literature review began in 2021; therefore, the article search year ended in 2021 and did not continue into 2022. The search included peer-reviewed literature and dissertations.

The initial electronic search returned 760 titles. The second step included going through and finding academic journal articles and dissertations, and then screening the titles and abstracts to determine if each study needed further screening for inclusion. The number of articles reviewed during this step were recorded. The third step of the process involved going through the articles that meet criteria and identifying additional articles not found during the database search. During the search, if the title fit screening criteria, the author lists and title were compared to the list of articles that were already found and duplicates were removed. If the study was not included in the list of articles already, the study was examined for potential eligibility (Brown et al., 2018). Figure 1 provides an overview of the search process and the number of citations found and excluded.

### **Inclusion Criteria**

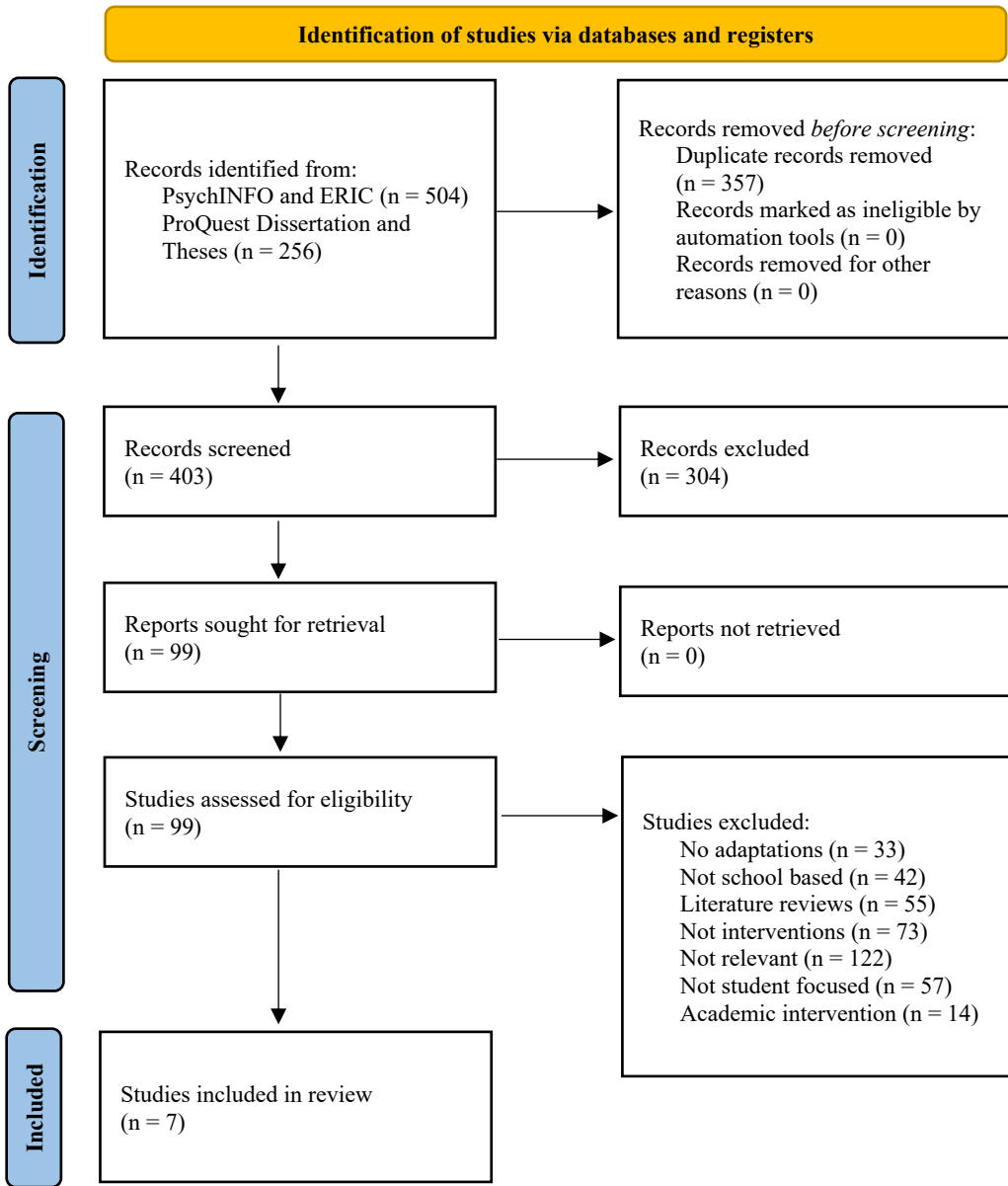
The replication used the same inclusion criteria as Brown et al. (2018), which included: (a) the research had to take place in a school setting; (b) participants had to be described as students with or at-risk for an emotional or behavioral disorder (EBD) or identified with challenging behaviors; (c) the intervention was designed to address social, emotional, or behavioral outcomes of student participants; and (d) the research team had to make purposeful and concerted efforts to adapt the intervention for use with students of color. Brown et al. (2018) stated that cultural adaptations can be defined in a variety of ways, which depends on the needs and intervention. The replication used the same considerations for cultural adaptations, which was determined to have been made if there was an attempt to modify context, content, or procedural aspects of an intervention to meet the needs of a specific population (Brown et al., 2018). However, it was determined that qualitative research describing the adaptation process

was eligible for inclusion (Brown et al., 2018). See Figure 1 for the PRISMA model flowchart (Page et al., 2020).

**Figure 1**

**PRISMA**

*Overview of search process with number of citations retrieved and discarded with reasons.*



**Adaptations**

The purpose of this systematic review was to review the procedures and adaptations that were used by researchers to adjust present social, emotional, and behavioral interventions for use with students of color (Brown et al., 2018). The replication will use the same coding protocols

that were developed to describe various characteristics of (a) interventions, samples, and settings; (b) procedures used to culturally adapt the interventions; (c) specific content modifications made to the intervention to make it more culturally appropriate; and (d) various program delivery components that were adjusted to make it more culturally relevant to the students (Brown et al., 2018).

### ***Procedural Adaptations***

Brown and colleagues developed eight items to describe variations in program delivery and implementation across culturally adapted interventions. Items included researcher reference to: (a) fidelity adaptation balance, (b) community concerns, (c) target program review, (d) examine theory of change, (e) resource evaluation, (f) training evaluation, (g) adaptation documentation, and (h) consult program developer (Brown et al., 2018). The presence of each procedural adaptation will be coded as “yes” = 1 or “no” = 0. Appendix A contains the definition of each procedural adaptation and gives an example of each.

### ***Content Adaptations***

As in Brown et al. (2018), there were five items used to index content adaptations described in the eligible studies. Items included modification to the: (a) language, (b) metaphors, (c) content (i.e., change parts of the intervention), (d) concepts, and (e) goals (Brown et al., 2018). The presence of each content adaptation will be coded as “yes” = 1 or “no” = 0. Appendix B gives the definition and example of each content adaptation.

### ***Program Delivery Adaptations***

As in Brown et al. (2018), there were six items used to document procedures used to modify program delivery. Items included modification to the: (a) implementer, (b) delivery channel, (c) location delivery, (d) methods, (e) context, and (f) persons (Brown et al., 2018). The



presence of each program delivery adaptation will be coded as “yes” = 1 or “no” = 0. Appendix C defines each program delivery adaptation and gives an example of each.

### **Study Characteristics**

This study will record sample and setting characteristics which include: (a) gender, (b) age, (c) grade, (d) race/ethnicity, (e) language, (f) clinical diagnosis, disability, or target outcome and (g) research design (Brown et al., 2018). For each study, the number and percentage of each gender reported, the age range reported, the grade for the participants, race/ethnicity number and proportion will be reported consistent with the U.S. census categories, languages will be listed, and clinical diagnosis or disability will be recorded in a manner similar to Brown et al. (2018).

### **Procedures**

This project was a systematic review of the group literature regarding cultural adaptations of school-based social, emotional, and behavioral interventions for students of color. A pool of articles was gathered based on a predetermined criterion and entered into an Excel spreadsheet and duplicate articles were removed. If an article does not meet the inclusion criteria, it was removed as well. The articles were coded for application of procedural adaptations, content adaptations, program delivery, study characteristics, and setting. After coding articles, the Excel file was reviewed to identify frequency and proportion of adaptations.

### **Interrater reliability (IRR)**

The primary investigator started by recoding the ten articles found in the Brown et al. (2018) literature review. The primary investigator started by randomly choosing three articles to code. Once the three articles were chosen, the primary investigator coded the articles and compared them to the finding of Brown and colleagues. This process was repeated until all ten articles from the Brown et al. (2018) were coded and compared by the primary investigator. A

secondary coder was trained to code the articles from Brown et al. (2018) and the current article pool. The secondary coder started by randomly choosing two articles from Brown and colleagues. The two articles chosen to code were Margolis (2013) and Smith et al. (2014). Once the two articles were selected, the primary investigator taught the definitions using the definition charts provided in Appendix A, Appendix B, and Appendix C. The secondary coder coded one article from Brown and colleagues. When completed, the primary investigator and the secondary coder compared and reviewed the article. This was repeated until both articles from Brown et al. (2018) were coded. This process was repeated for the secondary coder and primary investigator for the articles within the current review. The two articles that were randomly chosen from the current article pool selection was Dang et al. (2018) and Mustaq et al. (2017). IRR was computed for 29% of the final article pool of seven articles.

The primary investigator and the secondary coder reached 83% reliability with Brown et al. (2018) over all adaptation areas. The primary investigator and the secondary coder reached 82% reliability for procedural adaptations, 86% with content adaptations, and 80% with program delivery adaptations for Brown and colleagues. The primary investigator and the secondary coder reached 100% reliability within the Brown et al. (2018) article pool over all adaptation areas. The primary investigator and the secondary coder reached 100% reliability with procedural adaptations, 100% with content adaptations, and 100% with program delivery adaptations within the current article pool selection.

### **Analysis Plan**

The descriptive information from each study will be summarized including frequency and proportions of gender, age, grade, race/ethnicity, language, clinical diagnosis or disability category, and research design. For procedural adaptations, after each study is coded, the

frequency and percentage will be calculated for each procedural adaptation across and within studies. For content adaptations, after each study is coded, the frequency and percentage will be calculated for each content adaptations across and within studies. For program delivery adaptations, after each study is coded, the frequency and percentage will be calculated for each program delivery adaptations across and within studies. This analysis plan is consistent with the one in Brown et al. (2018).

## Results

### Sample and Program Characteristics

Table 1 shows an overview of the sample and characteristics for the studies that met inclusion criteria. The sample size within each study ranged from 3 to 285 students. A majority of the studies were conducted in elementary schools, which included Kindergarten through 6<sup>th</sup> grade ( $n = 5$ ) and the remaining were conducted with high school students ( $n = 2$ ). The age range for the participants was on average 5 to 15.73 years; however, a few articles did not report the mean age for their participants. Ijadi-Maghsoodi et al. (2017) reported they had a sample of students whose age ranged from 14 – 18 years, but they were predominately 9<sup>th</sup> grade students. The gender of the participants was reported in a majority of the studies and it showed that males ranged from 40% to 100% ( $n = 1$  to 165) of the sample, and females ranged from 0% to 51% ( $n = 0$  to 111) of the sample. One article did not report gender within the population sample. The population for each study varied by article.

A clinical sample is described as students who had a diagnosis of a mental health disorder from an outside provider and was explicitly stated in the study. Six of the articles did not report if the participants were diagnosed with a mental health disorder by an outside provider. Ijadi-Maghsoodi et al. (2017) reported that they screened for PTSD symptoms within their sample of students; however, that was not an official diagnosis of PTSD. Research designs used in the studies included randomized control with pre and posttest ( $n = 4$ ), pre and posttest design ( $n = 1$ ), single-subject design (multiple baseline design;  $n = 1$ ), and mixed methods ( $n = 1$ ).

**Table 1*****Sample and Program Characteristics***

Study	Total N	Grade	Mean Age	Population	Clinical Sample	Target Outcome	Research Design
Berger (2018)	183	4 <sup>th</sup> – 6 <sup>th</sup>	12.46	Sri Lanka	N/R	Decrease levels of anxiety, hyperactivity, somatization, and social difficulties and increased prosocial behaviors and functioning at school	Randomized control trial with repeated measures (pre and posttest, follow up)
Castro-Olivo (2018)	3	Kindergarten	5	Latino-ELL	N/R	Validate the use of the culturally adapted version of FSS	Multiple Baseline, Single Study
Dang (2018)	4	10 <sup>th</sup> – 11 <sup>th</sup>	15.73	Vietnamese	N/R	Development and evaluation of ACES ProS	Randomized control trial blocked by grade with pre and post testing
Ijadi-Maghsoodi (2017)	100	Predominately 9 <sup>th</sup> grade, but it stated a few students were in other grades (ages 14-18)	N/R	Central American Heritage & African American	-	Enhance social-emotional learning while also improving overall school climate	Mixed methods
Klein Velderman (2018)	43	K – 3 <sup>rd</sup>	5.7 & 7.5	Dutch	N/R	Translation and initial adaptation of	Pretest and Posttest design

						CODIP in Dutch context, feasibility of implementing CODIP in the Dutch setting, and determining the feasibility of replicating positive and desired effects of CODIP as showed in the U.S.	
Mushtaq (2017)	112	5 <sup>th</sup>	9.64	Pakistani	N/R	Reducing aggressive behavior	Randomized control trial, pre and posttest
Tam (2020)	285	4 <sup>th</sup> – 5 <sup>th</sup>	N/R	Chinese	N/R	Decrease in depression and an increase in resilience related protective factors	Randomized control trial, pre and posttest

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*Note.* N/R means No Response.

### **Procedural Adaptations**

Table 2 shows the results of the procedural adaptations that were made across all seven articles that met inclusion criteria. The most frequently reported procedural adaptations were resource evaluation ( $n = 7$ ) and adaptation documentation ( $n = 7$ ) at 100%. Eighty-six percent of the articles reported community engagement ( $n = 6$ ). Seventy-one percent of the articles reported program review, and training evaluation ( $n = 5$ ). In addition, over half the articles reported

fidelity balance, and theory of change ( $n = 4$ ) at 54%. The least frequently reported procedural adaptation was consult developer ( $n = 1$ ) at 14%.

**Table 2**

***Results of Procedural Adaptations by Study***

Study	Fidelity Balance	Community Engagement	Program Review	Theory of Change	Resource Evaluation	Training Evaluation	Adaptation Documentation	Consult Developer	Total
Berger (2018)	X	X	X	X	X	X	X	-	88%
Castro-Olivo (2018)	-	-	X	X	X	X	X	-	63%
Dang (2018)	-	X	X	-	X	-	X	-	50%
Ijadi-Maghsoodi (2017)	X	X	X	-	X	X	X	-	75%
Klein Velderman (2018)	X	X	X	X	X	X	X	X	100%
Mushtaq (2017)	X	X	-	X	X	-	X	-	75%
Tam (2020)	-	X	-	-	X	X	X	-	50%
Total (%)	57%	86%	71%	57%	100%	71%	100%	14%	

**Content Adaptations**

Table 3 shows the results of the content adaptations that were reported in the articles that were included in the article pool. The most reported content adaptation was content ( $n = 7$ ) at 100%. Over half of the articles reported adapting the language to fit the participants of the intervention ( $n = 4$ ) at 57%. Less than half of the articles reported concept adaptation and the

goal adaptation of the intervention ( $n = 3$ ) at 43%. The least frequently reported content adaptation was metaphors ( $n = 1$ ) 14%.

**Table 3**

*Results of Content Adaptations by Study*

Study	Language	Metaphors	Content	Concepts	Goals	Total (%)
Berger (2018)	X	X	X	X	X	100%
Castro- Olivo (2018)	X	-	X	X	X	80%
Dang (2018)	-	-	X	-	-	20%
Ijadi- Maghsoodi (2017)	-	-	X	-	-	20%
Klein Velderman (2018)	X	-	X	X	X	80%
Mushtaq (2017)	X	-	X	-	-	40%
Tam (2020)	-	-	X	-	-	20%



Total (%)	57%	14%	100%	43%	43%
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### Program Delivery Adaptations

Table 4 indicates the results of the program delivery adaptations that were reported within the articles. Eighty-six percent of the articles reported that the implementer of the adapted intervention was trained, and if the person delivering the adapted intervention was changed to better fit the cultural need of the student receiving the intervention ( $n = 6$ ). The next most frequently reported adaptations were if the delivery of the intervention was adapted and changed, and if there was a change to the context ( $n = 3$ ) at 43%. The least frequently reported adaptations were if the location of the intervention was given changed ( $n = 1$ ) at 14%, and if the research design was altered when the adaptations were applied to the intervention ( $n = 0$ ) at 0%.

**Table 4**

*Results of Program Delivery Adaptations by Study*

Study	Implementer	Delivery Channel	Location Delivery	Methods	Context	Persons	Total (%)
Berger (2018)	X	-	-	-	X	X	50%
Castro-Olivo (2018)	X	X	-	-	X	X	67%
Dang (2018)	-	-	-	-	-	X	17%
Ijadi-Maghsoodi (2017)	X	-	-	-	-	-	17%
Klein Velderman (2018)	X	X	X	-	X	X	83%
Mushtaq (2017)	X	X	-	-	-	X	50%
Tam (2020)	X	-	-	-	-	X	33%
Total (%)	86%	43%	14%	0%	43%	86%	

## Discussion

The purpose of this study was to update Brown et al.'s (2018) review of the literature on culture adaptations to social, emotional, and behavioral interventions. The current review of literature indicated that researchers have used a high proportion of most procedural adaptations to culturally adapt school-based interventions to support underrepresented minority students. In general, content adaptations made to interventions were less documented, with the exception of altering procedure content. Also, only a few of the program delivery adaptations are being documented, outside of implementer and persons. As the research shows from previous articles reviewed by Brown et al. (2018) and the current article review, researchers are incorporating these adaptations within their studies to try and fit the intervention for a specific population of students. It does show that researchers are using more of the procedural adaptations and content adaptations with more current studies. This could be due to researchers changing how we look at the individuals, how we look at the targeted settings, and the tangible components of the interventions. However, the current articles show that researchers are not using program delivery adaptations as much as the other adaptations. The studies aren't showing that changes are being made to the implementation of the adapted intervention to the targeted population. Table 5 outlines the comparison between Brown et al. (2018) article review and the current article review. A difference of 20% or greater was viewed as a substantial difference between the Brown et al. (2018) and current review.

**Table 5*****Comparison Between Brown et al. (2018) and Current Article Review***

Article	Current Articles	Brown et al. (2018) Articles	Total
<b>Procedural Adaptations</b>			
Fidelity Balance	57%	50%	54%
Community Engagement	86%	90%	88%
Program Review	71%	70%	71%
Theory of Change	57%	30%	44%
Resource Evaluation	100%	70%	85%
Training Evaluation	71%	70%	71%
Adaptation Documentation	100%	70%	85%
Consult Developer	14%	60%	37%
<b>Content Adaptations</b>			
Language	57%	100%	79%
Metaphors	14%	40%	27%
Content	100%	80%	90%
Concepts	43%	40%	42%
Goals	43%	20%	32%
<b>Program Delivery Adaptations</b>			
Implementer	86%	100%	93%
Delivery Channel	43%	0%	22%
Location Delivery	14%	60%	37%
Methods	0%	30%	15%
Context	43%	70%	57%
Persons	86%	40%	63%

**Procedural Adaptations**

The current review of literature along with previously reported data show that there is an increase in procedural adaptations within social, emotional, behavioral interventions in the school setting. A majority of the articles within the previous review and current review used the procedural adaptations within each study. The adaptations used between Brown et al. (2018) article review and the current article review included the areas of fidelity balance, community engagement, program review, and training evaluation. The similarities in coding these specific adaptations could be due to the consistency in the prioritization and use of these adaptations over

time. Alternatively, the similar results could be due to consistent definitions used by the primary investigator.

There were differences seen from Brown and colleagues review of articles compared to the current review of articles. The adaptation areas such as: theory of change, resource evaluation, adaptation documentation, and consult developer were seen more in the current article selection. These differences could be due to more recent shifts to prioritize the implementation and documentation of theory-based approaches. Consult developer was shown more in the previous article review completed by Brown et al. (2018) than in the current article review. This could be the result of the researchers consulting with the program developers and not documenting it with the current study pool. Alternatively, researchers could have reviewed the research from the intervention developer and documented that. That is, instead of directly contacting the developer, they reviewed literature over the intervention they were developing and that is what was documented. Overall, there has been a higher emphasis on community engagement, resource evaluation, and adaptation documentation; however, there needs to be a more purposeful effort to look at fidelity balance and theory of change.

### **Content Adaptations**

There is an increase within the area of content adaptation within the previous articles found by Brown et al. (2018) and within the current article pool selection; however, content adaptations were less documented, with the exception of researchers adapting the content of the intervention. The adaptations used between both previous articles Brown and colleagues reviewed along with the current article review include content and concepts. The similarities between Brown et al. (2018) could be that changing the parts of the interventions has remained a priority, while keeping the intervention focus the same has remained favorable.

There were differences seen from Brown and colleagues review of articles compared to the current review of articles. The adaptations that were seen more in the previous articles reviewed by Brown and colleagues were language and metaphors. This difference could be that due to the population that the programs were adapted for, and the changes to the language or symbolic communication were implied but not directly discussed. Also, some articles pointed out that some aspects had already been adapted by a previous researcher and these adaptations were already made (Mushtaq et al., 2017; Tam et al., 2020). The adaptation that was seen more in the current article pool review compared to Brown et al. (2018) was goals. This could reflect that goal setting could be a more recent element for programs compared with programs from over a decade ago. In general, content adaptations has shown to increase over the years within research articles, but not all areas within content adaptations are being taken into consideration when adapting social, emotional, behavioral interventions to fit specific populations. Researchers are taking into consideration the content of the intervention, but more emphasis needs to be taken into consideration for metaphors, concepts, and goals of the intervention being adapted.

### **Program Delivery Adaptations**

The adaptation that was seen frequently addressed between both Brown et al. (2018)'s article review and the current article review was implementer. This could be might be due to the importance of the implementer being trained to implement the intervention. Location delivery, methods, and context was seen more in the previous article reviewed by Brown and colleagues than within the current article review. The difference might be due to the fact that the authors reported more directly of how they changed the delivery of the adapted intervention and did not report how the research design was implemented in the original intervention. Also, the context of the intervention might have been done for the adapted interventions, but the researcher(s) might

not have documented that adaptation in the current research articles that were reviewed. Delivery channel was seen more in the current article review than the previous article review completed by Brown et al. (2018) and this might be due to a broader definition for the current literature review. Overall, program delivery adaptations within the current article review were not as prevalent as other adaptations. Researchers documented implementer and persons when adapting interventions to fit a target population. Nonetheless, delivery channel, location delivery, methods, and context might need to be attended to when adapting these interventions within the school-based setting.

### **Limitations**

There were some limitations to this systematic review. The first limitation was the partial information regarding the meaning of what was each cultural adaptation. Coding for reliability with Brown et al. (2018) for each adaptation was made difficult because few clear definitions with examples were given in the previous review. The exclusion of a definition chart or examples of each adaptation limited the overall guidance available for this review. In the future, this limitation can be addressed by having a definition with examples from the previously coded articles to facilitate replication of this and similar systematic reviews.

The second limitation looked at the possibility that the current article pool is not all of the studies that might have fit the inclusion criteria. Searching for articles using the platforms Brown et al. (2018) used showed a significant increase in potential articles for the review pool. However, many articles were excluded due to not meeting the inclusion criteria. In the future, this limitation can be addressed by having a rolling review period or by searching out articles that might have been unpublished due to the file drawer effect. Also, after conducting the search

and article pool selection, researchers could review additional resources, such as state-level guidance documents with empirical support, to see if any records were missed.

## **Implications**

The results of this review showed the current adaptations and areas for further or more consistent cultural adaptations of interventions for students with social, emotional, and behavioral needs. Program implementers could begin adaptations by collecting background information on the participants to get a better understanding of what cultural adaptations would be beneficial for the intervention (Brown et al., 2018). Having this knowledge could allow researchers to better support and collaborate with community members to address needs of students within different cultures. Community members and other important stakeholders can add valuable support and resources when working towards adapting an intervention. Adapting interventions with specific resources in mind could provide researchers with crucial information and for a specific culture to make the impacts more pronounced. Reaching out to intervention developers for support would also be helpful to make sure programs and interventions are implemented with the main outcome in focus, as it pertains to the target group. Documenting resources as well as the adaptations that are made to the interventions are important for future researchers. This will ensure replication of the adapted interventions are possible and reliable across procedures and studies (Brown et al. 2018).

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## Appendix A

<b>Definition Chart for Procedural Adaptations</b>		
<b>Adaptation</b>	<b>Definition</b>	<b>Example</b>
Fidelity Adaptation Balance	<p>Was fidelity taken into consideration when adaptations were made or after adaptations were made?</p> <p>Changes to address adherence/steps, quality, dosage, student responsiveness, and differentiation</p>	<p>Additional steps to give directions in English and Spanish; change from one 2 hour session to two 2-hours sessions; Used feedback measures normed with student's primary culture</p>
Community Engagement	<p>Did they go to community members about adaptations and what should be made?</p> <p>A statement that specifies community members and changes based on their input</p>	<p>New story books were used based on results from the Boys to Men Leadership Group [or deidentified community organization]</p> <p>Did they use community researchers within the culture to help with adaptations?</p>
Target Program Review	<p>Was the program reviewed before adaptations were made?</p> <p>A statement that specifies the program was reviewed before adaptations were made</p>	<p>Clearly shows the original parts of the program and then explains the adaptations that were made to the program.</p>
Examine Theory of Change	<p>Did they go over the program's theory of change and logic model?</p> <p>A statement was given for reviewing the programs theory of change and logic model</p>	<p>They go over how and why a desired change is expected to happen from the intervention.</p>
Resource Evaluation	<p>Was culture taken into consideration when they applied resources to implement and come up with the adaptation?</p> <p>It was clearly stated whether culture was taken into</p>	<p>A focus group was put together for participants in the study. This allowed the researchers to try out some of the activities, ask the participants questions about their culture, and get recommendations for</p>

	consideration when applying resources to implement and adaptations	adaptations of the intervention.
Training Evaluation	<p>Was the implementer trained before the implementation of the intervention?</p> <p>A statement was given for the training the implementer received before the implementation of the intervention</p>	<p>People involved in the intervention completed training for the intervention before they implemented the intervention to the participants.</p>
Adaptation Documentation	<p>Did they record variations made to the program?</p> <p>A clear description of the adaptations was listed out or a chart was made showing the adaptation changes</p>	<p>The author shows what the activity was in the original intervention and explains what they changed the activity to.</p> <p>Original intervention has mothers and children talk about the mother's experiences with developmental changes when she was young.</p> <p>The adapted intervention has the mother and child discuss attending school in Mexico vs the United States.</p> <p>Rationale was the mothers had a difficult time discussing their developmental changes so they changed the activity to something more concrete.</p>
Consult Program Developer	<p>Did they communicate with the intervention program developers?</p> <p>A clear statement is provided explaining the communication between the implementers and the program developers</p>	<p>The interventionist worked with the developer of the intervention they are using.</p> <p>The interventionist contacted the developer of the intervention they are using.</p>



## Appendix B

<b>Definition Chart for Content Adaptations</b>		
<b>Adaptation</b>	<b>Definition</b>	<b>Example</b>
Language	<p>Is the language appropriate and understandable for the reader?</p> <p>There is a clear statement of the student's primary language and the language that is used for the implementation</p>	<p>If the student's primary language is Spanish, the implementer provided the intervention in Spanish.</p> <p>Language was changed or reworded for better understanding.</p>
Metaphors	<p>Were metaphors changed to appropriate cultural references?</p> <p>There is a clear description of the student's culture and if the metaphors were changed</p>	<p>The metaphors are common for the culture the student identifies with.</p> <p>Symbols and concepts</p>
Content	<p>Did they change parts of the intervention to better fit the cultural group of participants?</p> <p>A statement is given to explain the changes made within the intervention.</p>	<p>Original intervention had a session for icebreakers. Adapted intervention took that out.</p>
Concepts	<p>Were the ideas used in the intervention changed?</p> <p>A statement was given for the ideas in the intervention that were changed.</p>	<p>Original content related loud noises to cognitive distortions.</p> <p>Adapted intervention recognized that American Indian cultures have a strong belief in the metaphysical and attribute noise to a spirit; therefore, it is not a cognitive distortion.</p>
Goals	<p>Were goals and target results of the intervention stated?</p> <p>A clear statement was given for the goals and target results of the intervention</p>	<p>The goal/target of the intervention is for the student to be mastery on grade level spelling.</p>

## Appendix C

<b>Definition Chart for Program Delivery Adaptations</b>		
<b>Adaptation</b>	<b>Definition</b>	<b>Example</b>
Implementer	<p>Was the implementer trained to deliver the intervention with the adapted program.</p> <p>A statement was given for training prior to implementation of intervention</p>	The implementer studied and practice giving the intervention before administering the intervention.
Delivery Channel	<p>Was the delivery of the intervention adapted and changed?</p> <p>A statement was given to explain how the delivery of the intervention was adapted and changed, if it was online, modules</p>	<p>Original intervention conducts sessions as a whole group.</p> <p>Adapted intervention conducts break out rooms during sessions instead of conducting a whole group session.</p>
Location Delivery	<p>Was the physical setting in which the intervention was given changed?</p> <p>A statement was given to describe the setting in which the intervention was given in</p>	<p>The intervention was given in the general education setting within Reading time.</p> <p>The intervention is given in a clinical setting, but the interventionist adapted it to be done in the school setting.</p>
Methods	<p>Was the research design altered when they applied the intervention?</p> <p>A clear statement was given to explain if the research design was changed</p>	<p>Original study uses the research design, randomized and longitudinal.</p> <p>Adapted version found that also adding in posttest and feedback sessions to be most useful.</p>
Context	<p>Was there a change to the context?</p>	Changing “Time out” to “Send child to room” to fit the appropriate cultural context.
Persons	<p>Was the person delivering the intervention changed based on culture and language of the student?</p>	An intervention being implemented to an English Language Learner, the implementer is being changed to an English Language Learner Teacher who better

	<p>A statement was given explaining the change in the implementer due to culture and language</p>	<p>understands the Primary Language and Culture of the student.</p> <p>Members of the community or school who share the same cultural background and language as the participants where the intervention is being presented were used.</p>
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Type of document: ['Thesis']

Title: A SYSTEMATIC REVIEW OF CULTURAL ADAPTATIONS OF SCHOOL-BASED SOCIAL, EMOTIONAL, AND BEHAVIORAL INTERVENTIONS FOR STUDENTS OF COLOR: A REPLICATION AND UPDATE OF BROWN ET AL. 2018

Keywords (3-5 keywords not included in the title that uniquely describe content): Cultural Adaptations, School-Based behavioral intervention, Underrepresented Minority Students, Positive behavior support

Committee Chair: Thomas J. Gross

Additional Committee Members: Carl Myers Jessica Torelli

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