Adaption of a culturally informed stress reduction intervention for Native American Head Start Teachers using ADAPT-ITT and CBPR methodologies

Abstract

Background

Higher rates of Adverse Childhood Experiences (ACEs) among Native American populations can be attributed to historical and contemporary traumas stemming from colonization and ongoing discrimination. On the Fort Peck Indian Reservation, six Head Start centers serve over 300 children,-Head Start is a federally funded program promoting school readiness for preschool children from low-income families. Tribal Head Start teachers report high levels of stress and depression as they work with children scoring high in ACEs. Teachers have requested support in managing their psychological health and well-being.

Methods

A Community-based participatory research framework was employed to ensure culturally safe research practices in entirety to adopt and adapt a psychological health intervention for Head Start teachers. The eight step ADAPT-ITT methodology was utilized to guide the adaption process: 1) assessment, 2) decision, 3) adaptation 4) production, 5) topical experts, 6) integration 7) training and 8) testing. Teacher interest and needs were assessed through focus groups and in-depth interviews. Based on formative feedback, a culturally informed intervention, *Little Holy One,* was then adapted for Head Start teachers using ADAPT-ITT. *Little Holy One* is a 12-lesson intergenerational curriculum intervention designed to reduce parental stress and trauma-related symptoms among parent-child dyads.

Results

From the qualitative assessments teachers described experience of stress, depression, and Post Traumatic Stress Disorder. Based on teacher preferences for content and perceived needs a culturally informed format and content educating about stress were integrated into the intervention. Assessment of community capacity to help adapt and adopt the intervention revealed their ability to implement the intervention. Iterative feedback with a Tribal Advisory Board and designers of the original intervention led to final selection of five lessons. Using theater testing (step 4 of ADAPT-ITT) these lessons were adapted for implementation with Fort Peck Head Start teachers.

Conclusion

The adaptation and evaluation process of the *Little Holy One* lessons contribute critical considerations that must be taken in adapting psychological health interventions to decrease stress and improve well-being. Results outlined in this paper provide a framework to adapt interventions to be culturally and context specific and meet the needs of the people it serves.

Keywords: CBPR, Native American, stress, cultural adaptation, process evaluation; ACEs; well-being; ADAPT-ITT

Introduction

Adverse Childhood Experiences

Native Americans residing in remote reservation-based settings benefit from being connected to place, culture, community, and tribal sovereignty (Gone & Trimble, 2012). However, many still struggle with poverty, high crime rates, poor performing schools, and lack of access to health care services and job opportunities (Brockie, T. N. et al., 2013; Gone & Trimble, 2012; Wexler, Lisa et al., 2015). Compounding less than optimal Social Determinants of Health (SDoH) is the prevalence of Adverse Childhood Experiences (ACEs)— stressful or traumatic events in early life—which have shown to last into adulthood and contribute to increased morbidity and mortality across the lifespan (Felitti et al., 1998). ACEs include emotional, physical, and sexual abuse, witnessing intimate partner violence (IPV), parental separation, neglect, having incarcerated relative(s), community poverty and violence (Felitti et al., 1998; Petruccelli et al., 2019). Greater number of ACEs experienced in childhood can equate to higher risk of developing chronic disease (e.g., diabetes, hypertension, and cardiovascular disease), depression, behavioral challenges, alcoholism, poor school performance, unemployment, high-risk substance use, and suicide (Petruccelli et al., 2019; Walls, Melissa L. & Whitbeck, 2012). One way the effects of ACEs can occur is through prolonged activation of the stress response, leading to epigenetic changes that negatively impact short- and long-term health outcomes (Brockie et al., 2013).

National surveillance data shows ACE scores among Native Americans are 2.36 times higher than those of White individuals (Giano et al., 2020). Further, Native American children who are exposed to or witness traumatic events such as IPV and/or physical and sexual abuse and neglect experience Post-Traumatic Stress Disorder (PTSD) twice as much as the general

United States (U.S.) population (Brockie, Teresa et al., 2015). A prior study with Fort Peck youth, ages 15-24, found 78% of the sample experienced at least one ACE (Brockie et al., 2015). After controlling for demographics, each additional ACE increased the odds of PTSD by 55%, depression by 57%, suicide attempts (37%), and high-risk substance use (51%) (Brockie et al., 2015). While this study did not find a statistically significant relationship between historical trauma and discrimination and suicide ideation and attempts, other studies have found positive statistically significant associations between suicide attempts and familial attendance at residential boarding schools (Hackett et al., 2016; McQuaid et al., 2017).

Prevalence of ACEs vary by region primarily due to the impact of social determinants of health; however, the overall picture for Native Americans is alarming. Substantive evidence suggests that higher rates of ACEs among Native American populations can be attributed to historical traumas they have experienced as direct result of colonization i.e., the outlawing of language and culture—until 1972, genocide, forced relocation to reservations, child abuse in the boarding school system, and contemporary traumas stemming from ongoing discrimination (Brockie et al., 2015; Giano et al., 2020; Gone & Trimble, 2012). This has spurred intergenerational trauma, or the experience of severe traumas transmitted to offspring through epigenetic changes affecting childrens' physical and psychological health and well-being for generations (Brockie et al., 2013; Gone, 2013; Yehuda & Lehrner, 2018). However, factors that can help children experiencing ACEs overcome adversity include education and positive childhood experiences (Bethell et al., 2019). Safe, stable, and nurturing relationships can also be protective against mental health challenges and risk behaviors as children grow into adulthood (Baum et al., 2018; Bethell et al., 2019).

Tribal Head Start Teacher Stress

Despite a high level of job satisfaction reported by Head Start teachers, especially in their ability to make a difference in their students' lives (Bullough & Hall-Kenyon, 2011; Gibson, 2013), early childhood education (ECE) teaching remains one of the most stressful occupations in the U.S., with 46% of teachers reporting increased daily stress during the school year (Carroll, 2007). Burnout, anxiety, depression, sleep disorders, job dissatisfaction, poor performance and a high turnover rate have all been attributed to teacher stress. Secondary traumatic stress, or compassion fatigue, also contributes to teachers' strain as they work to support children and families that have suffered multiple adverse experiences(Hydon et al., 2015; Sharp Donahoo et al., 2018). In poverty-stricken areas, ECE teachers are likely to come from the same community as their students, and thus have dealt with similar ACEs as the children they teach. These ACEs can influence teachers' levels of stress and hinder their well-being (Hughes et al., 2017). Pre-school and Head Start teachers, particularly those working in rural, low-income communities, are well positioned to help mitigate negative and/or long-term effects of ACEs. Teachers provide positive interactions, emotional and instructional support, are sensitive and responsive, and stimulate childrens' development. They are often trusted, can effectively communicate, and develop relationships with parents, and often serve as first responders for students in times of crisis (Baum et al., 2018). As such, expanding teachers' resilience skills—providing them with tools to cope with their own stress and trauma—can potentially have a lasting impact on their personal well-being, as well as that of the students, schools, and communities (Baum et al., 2018; Jeon et al., 2014).

Reservation Community Needs Assessment

The Fort Peck Indian Reservation, home to the Assiniboine and Sioux Tribes, is located in rural, northeastern Montana has experienced disproportionate health inequities and collective

traumas. A community health assessment conducted in 2015 showed medium household income in Fort Peck was $12,000 lower than the rest of the state and 36% of children live in poverty (Fort Peck Tribal Health Department, 2016). While Fort Peck youth report less alcohol use, substance use—particularly use of hard drugs such as methamphetamine—is higher. Visits to the emergency room involving intentional self-injury are three times higher in Fort Peck than the rest of Montana (Fort Peck Tribal Health Department, 2016). Adults in Fort Peck average 4.4 mental health days compared to 3.4 among other Montanans; compounded by the ratio of mental health providers to patients being 1 to 1,030 in Fort Peck versus 1 to 399 across the rest of the state. Further, access to primary health care is difficult, with a ratio 1 provider to 5563 patients versus 1 to 1,312, respectively (Fort Peck Tribal Health Department, 2016).In recent decades, Fort Peck community leaders have expressed greater interest in finding solutions to these complex health challenges experienced by their People. Fort Peck's Tribal Head Start Administration reports that teachers need enhanced support given they work in a challenging environment with a population experiencing heightened stress, all while receiving minimal assistance for managing their personal health and well-being. Despite the resilience and commitment demonstrated by Head Start teachers, it is imperative their psychological health and well-being not be overlooked.

In Fort Peck, there is critical need for sustainable psychological and behavioral health support (Brockie, Teresa et al., 2021). However, provision of these services is hampered by the remote location of reservations, wait time of up to 3 months, lack of private or employment-based health insurance, reluctance to utilize existing health services due to structural and institutional racism (Gone & Trimble, 2012; Tracey, 2007), and the primary health care provider on reservations, the Indian Health Service, being chronically underfunded and understaffed, particularly in rural and remote settings (Siddons, 2018). As a result, access to quality, culturally

sensitive psychological and behavioral health care is lacking (Wexler, Lisa M. & Gone, 2012).

Cultural and Community Strengths

Native American communities demonstrate immense cultural and community strengths despite ongoing disparities. There is growing recognition that physical and psychological health challenges afflicting Native American communities are connected to settler colonialism. This has led to an emergence of behavioral health interventions that emphasize cultural buffers (e.g., positive tribal identity and communal mastery) to promote well-being and bolster individual and collective strengths as means of regaining connection to cultural heritage and ways of being (Walls, Melissa et al., 2016; Wexler, Lisa, 2013). Furthermore, culturally informed psychological health care and even "culture as treatment" holds promise of carrying cultural strengths forward for generations to come (Gone & Trimble, 2012; O'Keefe et al., 2019).

Community Based Participatory Research and ADAPT-ITT Methodology

To our knowledge, there is little or no implementation research to support the psychological health and well-being of Tribal Head Start teachers. Therefore, the purpose of this paper is to, 1) describe our study methodology using the principles of Community Based Participatory Research (CBPR), and ADAPT-ITT methodology, within an existing academic-community partnership used to frame this work, and 2) outline the process of finding, adapting, and preparing an intervention for testing that will support Head Start teachers by reducing stress and depression, improving well-being, and strengthening resilience.

CBPR is the gold standard for research with Native American communities (Anastario et al., 2017; Haroz et al., 2019), as it emphasizes development of academic-community partnerships, addressing public health concerns identified by the community of interest, and centering co-learning as the outcome (Israel et al., 1998). In turn, these actions enhance trust,

eliminate power imbalances, and bolster community capacity to reduce health disparities (Wallerstein et al., 2011). The ADAPT-ITT methodology has been successfully used in Native American contexts and was utilized for this study due to its pragmatic focus on adapting evidence-based interventions for culturally diverse populations (Craig Rushing & Gardner, 2016; Wingood & DiClemente, 2008). It helped ensure that the adapted intervention would remain true to the core elements of the original intervention, and be relevant, sustainable and acceptable to the new target population (Wingood & DiClemente, 2008). Thus this paper can serve as a model for future adoption and adaption of interventions in this population.

Methods

Study area and population

Spanning 180 miles and encompassing 3,200 square miles, Fort Peck is home to the Assiniboine and Sioux Tribes—approximately 12,000 Tribal members (Fort Peck Assiniboine & Sioux Tribes, 2022). There are six Head Start schools across the Fort Peck reservation serving over 300 children between three to five years old. Those also eligible for services include pregnant women and children from birth to three years of age, and children and families who are homeless, in foster care, or receiving Temporary Assistance for Native Families or Supplemental Security Income (Fort Peck Assiniboine & Sioux Tribes, 2022). Tribal Head Start Administration reports that most children come from single-parent homes, and 80% are below the Federal Poverty Level (Personal communication V. Wood, July10, 2020). There are 21 Head Start teachers and teachers' assistants; all are women and identify as Native American, with the majority identifying as Assiniboine or Sioux. More than half of these teachers have worked for Head Start for over 20 years. Administration reports that these teachers receive little to no mental health support despite the stresses of their job, personal life, and community (drug addiction,

high crime, and suicide rates) (Personal communication V. Wood, July10, 2020).

CBPR framework

The decision to use a selected CBPR framework arose from recognition of the distrust Native American communities have towards academic institutions and researchers, which stems from colonization and experience of unethical research practices with their Peoples (Brockie, Teresa N. et al., 2022). **Table 1** outlines how CBPR steps and principles were employed throughout the study to enhance the rigor, relevance, and reach of study findings. Team engagement within the community involved 1) access to guidance from a Native American researcher familiar with the community; 2) attending workshops led by Native American Elders and Native academic researchers on how to work with Native populations; and 3) collaboration with other Native and non-Native researchers to conduct a literature review on best practices for culturally safe research with Native American populations (Brockie et al., 2022).

ADAPT-ITT methodology

The ADAPT-ITT method consists of eight sequential steps that guide researchers through a prescriptive process for adapting evidence-based interventions:

1) Assessment: Literature review; focus groups and interviews.

2) Decision: Identify and select an Evidence-Based Intervention (EBI) to adapt.

3) Adaptation: Original intervention reviewed and tested by target audience using theater testing methodology.

4) Production: Iterative process with Tribal Advisory Board (TAB) and original intervention designers to develop a draft of the adapted intervention.

5) Topical experts: Draft reviewed by TAB, and proposed survey measures piloted with TAB.

6) Integration: Feedback from experts incorporated into draft and pretest-posttest survey,

7) Training: A Community Health Worker (CHW) will be trained in recruitment and implementation of adapted intervention and

8) Testing: A feasibility/acceptability study will be conducted in the future.

Figure 2 summarizes processes implemented by the team, which correspond to each step of the ADAPT-ITT model. Of note, the final two steps (7. training and 8. testing) will be reported in a future publication.

Ethics approval

The Fort Peck Head Start Administration had interest in exploring and implementing a sustainable intervention to promote their teachers' well-being, which was solidified in a meeting with the Tribal Executive Board—consisting of Assiniboine and Sioux tribal leaders. We discussed our intent behind conducting this research, and a Tribal Resolution (Resolution #30-348-2020-03) was granted, which gave permission to apply for funding and conduct a study on the reservation with Fort Peck Head Start teachers. Additionally, the resolution grants the tribe rights to protect intellectual property and Indigenous knowledge including, pictures, songs, or stories and requires that any manuscripts be reviewed by the council prior to publication. Institutional Review Board (IRB) approval was granted by both the Johns Hopkins School of Medicine and Fort Peck IRBs.

Tribal Advisory Board

With permissions, formal IRB approvals, and training completed a TAB was then established. A TAB is made up of community members who share a common identity, history, symbols, language, and culture (Brockie et al., 2022). They advise researchers on culturally safe research practices with the community and help their communities understand research rationale, impact, and consent processes (Brockie et al., 2022). The TAB for this study consisted of a Head

Start supervisor, Head Start teacher, Head Start parent, a cultural advisor, a public-school educator (and Head Start parent), and a Head Start grandparent. TAB members receive an honorarium for attending meetings. Using an iterative process, the researchers worked with the TAB, to develop a logic model that outlines the research process of this study (**Figure 1**).

Data collection

Step 1: Assessment

A comprehensive literature search for studies that have implemented interventions with for Head Start teachers across the U.S. to decrease stress or promote well-being was conducted. We also searched for studies that included Native American Head Start teachers or the use cultural adaptations with the Head Start population.

The next step comprised focus groups and interviews with Head Start teachers, parents, and community members to assess psychological risks such as stress, depression and PTSD, preferences for intervention content, perceived need(s), and an assessment of capacity within the community to help adapt and adopt the chosen intervention. Prior to collecting qualitative data, our TAB reviewed the semi-structured focus group and in-depth interview guides (available upon request). They conveyed culturally appropriate ways of ordering the questions and how to ask difficult questions, and ensured we were taking a strengths-based approach to understanding stressors and coping mechanisms among Fort Peck Head Start teachers. Teacher needs, comments and concerns were elicited through interviews with key community members (i.e., cultural leaders, council members, and Head Start administration). Community interest was gauged by noting comments and concerns voiced by Fort Peck administration, Head Start teachers, parents, and ancillary school staff. Teachers' interest was gauged through individual interviews.

Step 2: Decision

Key feedback from the TAB and qualitative data collection yielded a strong interest in using culture as a solution for stress, a concept which has been largely overlooked in other research studies (Gone & Calf Looking, 2011). Based on the results of literature search (detailed in results section)., we explored the possibility of adapting an intervention currently being implemented with Head Start parent-child dyads on the Fort Peck Reservation via a randomized control trial (RCT) (ClinicalTrials.gov: NCT04201184).

The RCT, Wakȟáŋyeža, hereafter referred to by its translation - *Little Holy One* - is an intergenerational intervention designed to reduce parental stress and trauma-related symptoms among parent-child dyads, where the children are 3-5 years of age and attending Tribal Head Start (Brockie et al., 2021). The intervention is a strengths-based, 12-module curriculum focused on promoting family wellness across a holistic well-being (i.e., physical [behavioral], emotional, mental [cognitive], and spiritual) spectrum. There are four cultural components in the *Little Holy One* curriculum, designed to support the psychological health and well-being of parent-child dyads by 1,2) promoting tribal identity and communal mastery (group efficacy), 3) addressing contemporary and historical trauma, and 4) promoting smudging. With support from the Principal Investigator of *Little Holy One* (TB), our TAB, and Head Start Administration—we adapted the four cultural lessons into a stress reduction curriculum for Head Start teachers. **Table 2** outlines the lessons taken from the *Little Holy One* curriculum for adaptation to the tribal Head Start teacher context. The cultural lessons were originally developed in partnership with a Fort Peck-based TAB and community members, and *Little Holy One* pilot data shows promising results for their effectiveness.

Step 3: Adaptation using theater testing methodology

The next step involved gathering community feedback for adapting the cultural lessons. Theater testing is a pre-testing methodology that involves presenting an original product to an audience aligned with the intended target audience (Wingood & DiClemente, 2008). The TAB, Head Start teachers, and community members were invited to a presentation of the four cultural components, whereby they could respond and ask questions, allowing the study team an opportunity to gauge their reaction to the product. A CHW trained to deliver the cultural lessons, as they are intended for *Little Holy One,* implemented the modules to this target audience because of her expertise with the original format and knowledge of local tribal culture. Being the audience encompassed the population of interest, they were able to provide an important assessment of the cultural components and provide direction for the study team to ensure the cultural adaptation would meet their needs.

The research team led a discussion in between presentation of each lesson, which included the following prompts: 1) appropriateness of the lessons for teachers, 2) order in which lessons should be implemented, 3) additional materials and/or activities that might enhance its relevance, and 4). appropriateness of reflection and activity handouts and assignments 5) burden of the intervention. Information extracted from qualitative interviews and focus groups (Step 1) was also introduced during these discussions, which included: teachers often do not realize the degree or impact of their stress, they will not travel to get mental health support, and the need for support mechanisms to be made convenient.

Step 4: Production

After listening to theater session recordings and reading transcripts, the findings were presented to the designers of the cultural lessons to ensure the adaptation maintained the integrity

of their original intervention. A first draft of the adapted intervention with accompanying handouts was developed.

Step 5: Topical experts

With a first draft ready for review we then piloted the pre-posttest survey with the TAB letting them naturally self-administer the survey as intended. Intentional care had been taken to choose measures validated in a Native American context. Discussion with the designers of the original intervention afforded the team access to two measures, cultural identity, and historical trauma, that have been specifically modified for the Assiniboine and Sioux culture. **Table 3** details the full list of proposed pre-posttest outcome measures. The TAB is considered an expert group and representative of the target population; thus, their responses were important to assess appropriateness of the chosen outcome measures. The primary outcome of the proposed feasibility study will be to reduce self-perceived stress (measured using the validated self-perceived stress scale (Cohen et al., 1983)). Secondary outcomes are to increase well-being (satisfaction with life (Diener et al., 2003)) and decrease depression (Center for Epidemiologic Studies Depression Scale- CESD_10 (Schure & Goins, 2017)). Longitudinally, we hope to see a decrease in historical loss associated symptoms, and an increase in resilience (Connor Davidson Resilience scale (Goins et al., 2013)), tribal identity (Oetting et al., 1998), and communal mastery.

TAB members were each given the proposed pre-posttest survey and asked to take notes as they navigated the questions. Following completion, we conducted a focus group-style discussion. TAB members were asked to consider the following questions about the survey: 1) Was there any confusion with the survey instructions, 2) Do the survey instructions help introduce and guide participants through the survey, 3) Was there any variability in your

interpretations of the questions, 4) Was there any discomfort in answering any of the questions, 5) What did you think of the length of the survey, and 6) What did you think of the order of the measures?

Step 6: Integration

The research team presented the draft of an adapted 5-lesson curriculum for implementation with Fort Peck Head Start teachers to the TAB where it was approved. Finally, we took the feedback from the piloting of the pre-posttest survey and presented the final draft to the TAB once more prior to planned implementation. This iterative process helped ensure no gap between the measures and theoretical constructs and integrated local, cultural perspectives (Groves et al., 2009)

At the time of data collection, the Fort Peck Reservation experienced a surge in COVID-19 cases, which required a reduction in number of participants for safety, IRB compliance, and adherence to university protocols. As such, interviews were conducted via Zoom or telephone and focus groups delayed until the tribal government allowed in-person gatherings. The four theater testing sessions were conducted in-person with numbers limited to the TAB members (five in total), one CHW, and one researcher to comply with tribal government restrictions on how many people could gather.

Data Analysis

All focus groups and interviews were recorded and transcribed verbatim. TAB meetings and theater testing sessions were recorded, and detailed notes taken. Qualitative data was thematically coded using qualitative analysis software F4Analyse by two researchers who met to compare coding and discuss emerging themes. Content analysis was also used so that frequency of topics was identified. Results were discussed with the research team and brought to the TAB

so that findings could be incorporated into intervention adaptation.

Results

Results are highlighted below in sequential order for steps one through six of the ADAPT-ITT process.

Step 1 – Literature Search, Focus Groups and Interviews

The literature search found that successful evidence-based resources to support Head Start teachers in coping with the demands of their profession include mindfulness-based cognitive therapy (Gold et al., 2010); access to mental health consultants and social workers (Raver et al., 2008) and self-care and classroom-management skills (Rombaoa Tanaka et al., 2020). We did not find any studies that center or prioritize Native American culture, values, and strengths (like tribal and/or spiritual identity), or challenges (such as historical trauma, discrimination, and health disparities) when adapting and implementing psychological health and wellness interventions (Wexler et al., 2015). These findings motivated the shift from adapting an existing evidence based psychological intervention to exploring and choosing the culturally informed intervention *Little Holy One.*

Four major themes emerged from the focus group and interviews: 1) existing mechanisms, 2) mental health and stress, 3) interest in a culturally informed intervention, and 4) sustainability. Key themes from each are documented in **Table 4**. Participant input helped identify existing mechanisms for support, gaps in support, and identify what type of intervention may fit this population. They also ascertained the willingness of administration to work on sustainability of the intervention if deemed feasible and acceptable.

Table 4: *Major Themes from Qualitative Data*

Theme	Qualitative exemplar quotes
Existing mechanisms (Usual practice)	
Lack of support	*" There have been lost promises for mental health support for our teachers" (Head Start supervisor 2).*
Existing Services	*"Counselors (that come to the reservation) don't understand the spirituality of the culture, the poverty, violence, and trauma that took place…" (Head Start supervisor 1)*
Existing coping mechanisms	*"Teachers cope by venting and smoking" (Cultural leader)*
Mental health and stress	
Barriers to Mental Health access	*"Native People are not used to that type of ask [..*to ask for help*] they are not necessarily processing up here emotion wise." (Head Start supervisor 2)* *"Mental health support is not a priority, we need to do something for our employees." (Head Start supervisor 3)*
Stressors for teachers	"*Teaching don't get the mental health support it needs… kids commit suicide… it affects the teacher." (Parent focus group)* *"COVID has kicked us down." (Teacher 7)*
Historical and contemporary trauma	*"They have been trying to wipe us out [*reference to historical genocide*]. We need a breakthrough, and we all have a little bit of spirituality." (Teacher 5)*
Interest in a culturally informed intervention	

Culture as treatment	*"Cultural activities with the adults would be creating that positive* [resolving stress, promote well-being]. *Everybody respects the traditional ways, share an understanding of traditional ways." (Head Start supervisor 3)* "*The suicides, drug abuse, these disparities are related to our loss of culture and language. The more you know about your culture, connect to your community, there is strength in that." (Parent Focus Group).*
Barriers to a culturally informed intervention	.. "*But there are also different religions on the rez so you may run into some issues* [with a cultural intervention]*." (Head Start supervisor 1)*
Sustainability	
Supporting mechanisms	*"The Tribal Handbook pays for 30 mins a day for physical health – time to go for a walk, but we have not thought about using it for mental health" (Head Start supervisor 1)* *"We could incorporate a mental health program into our monthly teacher days on Fridays" (Head Start supervisor 2)*
Barriers	*"Technology is an issue – 85 % of our teachers don't know how to use zoom." (Head Start supervisor 1)* *"The Wellness center, you know, it would be nice to go there when we are stressed but it's hard to get over there. There is nothing else." (Teacher 9)*

Step 2, 3- Decision, Adaptation,

Upon completion of the of each theater testing presentation the researcher facilitated a discussion using the prompts listed in the methods section to elicit feedback on the lessons and how to adapt for the Head Start teacher context: 1) appropriateness of the lessons for teachers: Overall participants were pleased to see traditional cultural practices being used as the treatment itself and felt that this could contribute to well-being, tribal self-determination, and reclamation of culture. One participant commented that this was better than seeing a Western evidenced-based practice adapted to their tribal context. All participants felt that such an intervention would work well with little adaptation for the Head Start teachers although mention was made that some teachers are very religious and might not feel comfortable being immersed in cultural ways.

2) order in which lessons should be implemented: Changing the order of lesson delivery was discussed because of concerns that the cultural lessons were no longer buffered by the other eight lessons from the original 12 lesson *Little Holy One* RCT e.g., *smudging* was placed before *historical trauma* so that it could be used throughout lesson delivery to deal with any stress brought up by discussing such topics. *Strengthening family and communities* was chosen to be the last lesson as the TAB felt that it would end the study on a strong positive note.

The final order of lessons agreed upon was: 1) Tribal identity, 2) Smudging, 3) Healing Historical Trauma, 4) Managing Your Emotions and 5) Strengthening family and community. For the Tribal Identity lesson TAB members were concerned that the teachers might feel shame at not knowing their native language or be shy about trying the greeting activity. They suggested creating an Mp3 with the language examples so that participants could practice at home with their family. Language can be intimidating, they said, and they did not want to make teachers

afraid of the language because of fear of mispronunciation.

3) additional materials and/or activities that might enhance its relevance: The topic of dealing directly with stress was raised; wherein the CHW proposed adding a lesson from the other *Little Holy One* eight lessons called "managing your emotions". This is a lesson taken from the Common Elements Treatment Approach (CETA) model. CETA was chosen for *Little Holy One* because of its success in trauma affected low resource communities [23]. The CHW presented this lesson to the TAB who agreed it would be good to include in the adaption thus increasing the proposed adapted curriculum to five sessions.

4) appropriateness of reflection and activity handouts and assignments:

A suggestion by a participant to switch the delivery from one---on---one to a group format was well received. The activity handouts were encouraging for a group-based setting, as they involve things such as a family tree exercise which may yield new connections for participants. There were suggestions to add specific group activities such as preparing a Native meal together or a traditional sewing activity.

5) burden of the intervention: Concerns about lesson attendance being a burden for teachers was addressed by the suggestion to conduct lessons before or after the monthly staff meetings to minimize travel for the teachers**.**

Step 4 - Production

When presented with a draft of the lesson plan, the original designers first concern was regarding the addition of the fifth lesson – "Managing your Emotions" which is not a cultural lesson. However, after reviewing the qualitative data where teachers indicated lack of awareness about their stress—they were amenable to this content. The second concern involved cost and the time intensive nature of the proposed additional activities, (such as preparing a Native meal and

sewing) which were discarded. The suggested switch in order of the lessons was approved.

A five lesson culturally informed intervention was adapted for Head Start teachers from the original *Little Holy One* 12-lesson curriculum that is currently being implemented with Head Start parents and children. The adapted intervention includes 4 culturally specific lessons and one CETA lesson resulting in a 5-lesson curriculum to be delivered at monthly Head Start teacher staff meetings starting in May or June 2022.

Step 5 and 6: Topical Experts and Integration

Expert opinion from the TAB and original designers of *Little Holy One* resulted in lessons adapted from an individual to a group format, with activities and hand-outs tailored to the new target population (Head Start teachers). A fifth lesson was added in response to perceived need for teachers to have the opportunity to explore and understand stress and depression and how to manage them. The pre-posttest survey that will be used in the proposed feasibility study was piloted and approved by the TAB with their feedback determining order and appropriateness of the measurement tools chosen for the survey. Instructions were deemed clear and the chosen measures appropriate for use with the Head Start teacher population. The final result is a 5-lesson culturally informed intervention aimed at reducing stress and promoting tribal Head Start teacher well-being ready for testing along with the pre-posttest survey. Results of the planed feasibility study will be reported in a future publication.

Discussion

This study has been designed in response to a critical need for psychological and behavioral interventions that are culturally curated for the population(s) they intend to serve and are self-sustaining in rural, low-resource settings. More specifically, this intervention uses traditional cultural practices as the treatment and has been adapted to a different target audience

within the same culture. Designing the aims based on community assets and strengths was a necessary first step, to eliminate characterization of the population and setting by challenges and deficits alone (Kelley & Small, 2016). The process outlined in this paper will contribute to growing evidence of the successes and potential challenges in adapting psychological health interventions for specific populations and cultural contexts. With the lack of access to psychological and behavioral health support identified in the Fort Peck community health assessment (Fort Peck Tribal Health Department, 2016) and qualitative data pointing to Head Start teachers being a stressed population in need of structured support this intervention has the potential to fill an identified gap and provide culturally appropriate psychological support. We are enhancing the potential of intervention sustainability by leveraging the roles and responsibilities of local CHWs in a setting that lacks specialty providers; thereby addressing the challenge of reaching populations that live in remote areas and lack access to psychological health services.

The research also illuminates the efficacy and acceptability of grounding an intervention in traditional cultural practices. This is important as not only is access to effective treatments urgent, but data suggests that psychological treatment-as-usual for Native Americans is often ineffective because they lack connection to the culture they are trying to serve (Gone & Calf Looking, 2011). While still novel there is growing evidence that immersion in traditional cultural activities promotes healing and well-being (Gone & Calf Looking, 2011). We hope that the proposed feasibility study will contribute to existing implementation literature. Using a CBPR framework to ensure culturally safe practices and community input throughout has further strengthened the process of adaptation and utilizing ADAPT-ITT has helped ensure a rigorous and replicable method.

Finally, the COVID-19 pandemic has led to increased individual, community, and societal stress with a National Head Start Association (2020) survey identifying need for greater access to trauma, grief, and mental health care for Head Start teachers, children, and at-risk families. The pandemic has disproportionately affected low-income communities leading to a greater urgency to find supportive avenues for managing stress, particularly in Native American communities where challenges are compounded by historical, intergenerational, and contemporary traumas many face (Gone, 2013; Nagasawa & Tarrant, 2020; Wexler, Lisa, 2009).

The delays in data collection caused by closure of the reservation due to rises in COVID-19 cases afforded an opportunity for the research team to develop a working relationship with tribal Head Start administration. The digital divide was evident as teachers were not familiar with Zoom and thus unable to switch to teaching in an online format. Thus, the research team was able to work with administration to assist teachers in developing proficiency with online formats.

Limitations

This study should be interpreted within the context of its limitations. First and foremost, we must acknowledge that some of our research team members are of European descent. However, the Principal Investigator of record is Native American and has a long-standing relationship with the Fort Peck Tribes, and guidance was provided by the *Little Holy One* research team who all identify as Native American and reside in Fort Peck. Finally, in-person research was delayed due to COVID-19. This necessitated initial qualitative data collection to be conducted remotely which was not ideal. As a team we decided that the theater testing process required in-person meetings which necessitated delays in the research timeline.

Conclusion

This study has been thoughtfully designed to adapt, the four cultural lessons from the *Little Holy One* curriculum with a sample of tribal Head Start teachers on the Fort Peck Reservation in preparation for testing the adapted version in a feasibility study. These cultural lessons were originally developed by the Fort Peck community and aim to leverage cultural strengths as a buffer to psychological challenges. Meaningful input from the teachers and the TAB helped ensure that the adapted lessons would be applicable for the subgroup of Head Start teachers but that the core values, traditions, and practices of the cultural lessons remained consistent. The ADAPT-ITT methodology enhanced the relevance and rigor of the adaptation process. In adapting these lessons for tribal Head Start teachers, we hope to better understand the feasibility and acceptability of providing such content centered around their culture. This article presents an example of a replicable process using the principals of CBPR and ADAPT-ITT to allow cultural and context specific adaptations to be conducted in other settings with different populations. Finally, planned future research will explore the feasibility and acceptability of the adapted lessons when tested with the Fort Peck Head Start teachers. Results will contribute to greater understanding of how to best develop strengths-based, cultural interventions for educators to decrease their stress and enhance their resilience and holistic well-being.

List of Abbreviations

ACES: Adverse Childhood Experiences

CBPR: Community Based Participatory Research

CETA: Common Elements Treatment Approach

CHW: Community Health Worker

EBI: Evidence-Based Intervention

ECE: Early Childhood Education

IRB: Institutional Review Board

PTSD: Post Traumatic Stress Disorder

TAB: Tribal Advisory Board

Table 1. *CBPR links to study aims.*

Steps of CBPR (Karen Hacker, 2013)	**Principles of CBPR**(Israel et al., 1998)	**Relation to Study Aims**	**Strengthens the science by…** (Balazs & Morello-Frosch, 2013)
Defining, Engaging Community; Identifying community needs and research	Recognition of the community as a unit of identity; Recognize Tribal Sovereignty; Building on strengths and resources within community; Collaborative partnerships; Integration of knowledge and action for mutual benefit of all partners.	Tribal IRB; formation of Tribal Advisory Board (TAB); background research; Stakeholder interviews, focus groups; building and maintaining trust; Consensus of Research goal and development of questions. Oversight of scholar by mentor/PI and TAB.	Ensures Relevance
Design/Hypothesis testing; responsible conduct of research	Promotion of co-learning and an empowering process that encourages social equality; Cyclical and interactive process	Community relevant outcome measures; adapting modules of *Wakȟáŋyeža*, through iterative work with TAB; Implement with ongoing oversight and problem solving with TAB and mentorship from	Enhances Rigor
Analysis; interpretation of results; dissemination; action	Focus on health from positive and ecological perspectives; Dissemination of findings and knowledge to all partners	Refinement based on new understandings; review and interpretation by all members of team; joint publications; collaborative conference presentations; community presentation	Extends Reach

Table 2*: Description of the Lessons to be adapted*

Lessons for adaptation in original order	**Description of lessons**	**Lesson Activities and time to complete lesson**
Promoting Tribal identity	Connects on to the Creator, responsibility to love a good life by walking spiritual path	1 hour. Practice greeting of relatives in Nakoda and Dakota Traditional Naming
Understanding our Emotions	*Based on qualitative data this lesson was added to the planned curriculum for Head Start teachers.*	1 hour. Identifying depression, managing anger and stress; working through challenges Visualization activity
Smudging	Therapeutic healing practice to resolve unsettling feelings and thoughts	45 mins. Smudging together; Smudging as a daily routine
Strengthening Family and Community	Therapeutic value of connectedness to relatives and community	1 hour. Knowing our relatives Family tree exercise. My friends and family exercise
Healing Historical Trauma	Identify imbalances in physical, emotional, mental, and spiritual domains created by historical trauma.	1 hour Identifying and coping with effect of Historical traumas. Strength and resilience Forgiveness exercise Smudge at end

Table 3. *Proposed Pre- and- Post Test Outcome Measures*

Table 3: *Proposed Pre-and Post-test Outcomes and Measures.*				
Concept	**Measure**	**Number of items and scoring range**	**Cronbach's alpha**	**Time to complete**
Stress	Perceived Stress Scale 10 (PSS-10) (Cohen et al., 1983)	Widely used and has been adapted for NA populations. 10 items 5-point scale. 0=Never to 4= very often	0.78	2 min
Well-being	Satisfaction with Life Scale (Diener et al., 2003)	A better measure of subjective well-being in Indigenous populations. 5 items. 7-point scale. 1=strongly agree to 7=strongly disagree	0.87	1 min
Depression	Center for Epidemiologic Studies Depression Scale Revised (CESD-R-10) (Schure & Goins, 2017)	Self-Report. Validated among NA populations. 10 items	0.86	1 min
Childhood trauma/adversity	Stressful Life Events Questionnaire (SLESQ) (Goodman et al., 1998)	Self-report measure to assess life-time exposure to traumatic events. More accurately captures traumas experienced by Native American population then BFRSS ACE score. 13—item scale	0.73	7 mins
Group Self Efficacy	Communal Mastery Scale (Hobfoll et al., 2002)	Developed specifically for NA contexts. Uses two commonly employed measures of mastery and self-efficacy 10 items 4-point scale. 1=strongly disagree to 5=strongly agree	0.85	2.5 min
Cultural Identity	Tribal Identity (Oetting et al., 1998)	Modified from Orthogonal Cultural Identification Scale specifically for Assiniboine and Sioux identity. 6-items	0.9	1.5 min
Historical Trauma	Historical Trauma (Les Whitbeck et al., 2004)	3 questions developed specifically for NA context: yes/no		1.5 min
Historical Trauma	Historical Trauma Checklist	15 items adapted for Assiniboine/Sioux Tribes. Yes/no don't know, refuse to answer		3.0min
Historical Trauma	Historical losses Associated Symptoms Scale (Les Whitbeck et al., 2004)	12 questions. 5-point Scale 0=Never to 5=Very often	0.91	1.5 min
Resilience	Connor-Davidson 10-item Resilience scale (CD-RISC-10) (Goins et al., 2013)	Is more effective with NA populations than CD-RISC-25. 10 items. 5-point scale. 0=Never to 4 = Very often	0.85	1 min
Childhood resilience	Benevolent Childhood Experiences Scale (BCEs) (Narayan et al., 2018)	Has been used in NA populations. 10 items yes/no		1 min
Quality of teacher-children relationships	Student Teacher Relationship Scale (short form) (Pianta, 2001)	Has been used with Head Start teachers. Items are grouped into two subscales: conflict and closeness. 15 items.5-point scale 1=definitely does not apply to 5=definitely applies	conflict 0.73 Closeness 0.72	2min
Childhood Trauma	Adverse Childhood Experience (ACEs) (Felitti et al., 1998)	Validated measure that tallies the different types of abuse, neglect, and other adverse childhood experiences. 10 items – yes/no	.67	5 min
			TOTAL TIME	30 minutes

Figure 1. *Logic Model.*

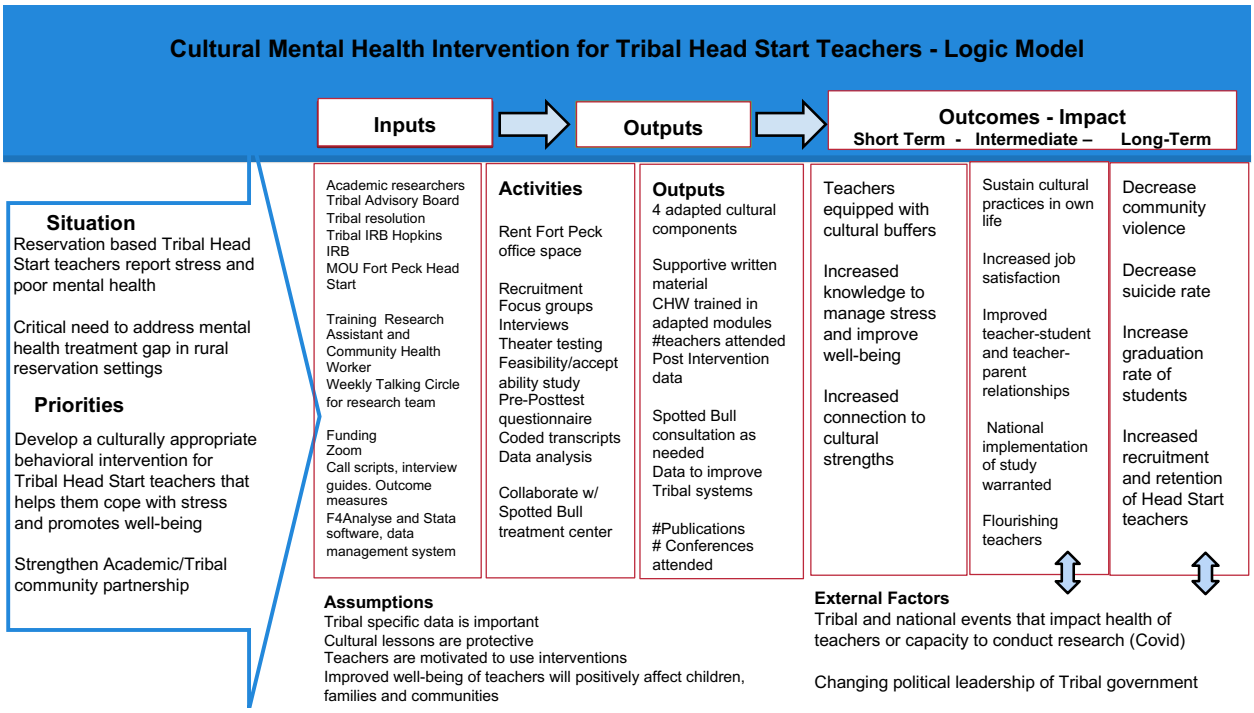
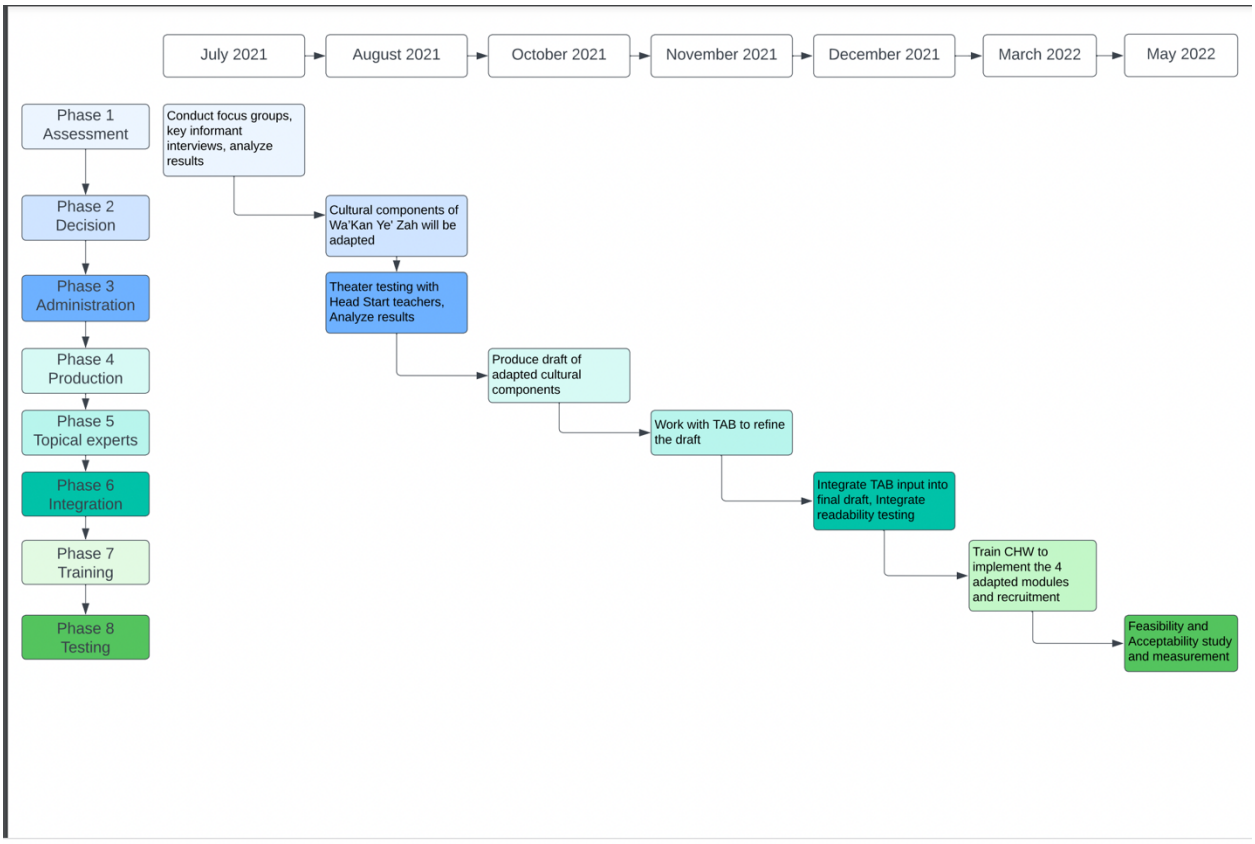


Figure 2. *ADAPT-ITT process and timeline for implementation*.



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