

EVALUATING THE IMPACT OF A CULTURALLY SENSITIVE ART PROGRAM ON THE RESILIENCE, PERCEIVED STRESS, AND MOOD OF URBAN AMERICAN INDIAN YOUTH

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Abstract: American Indian and Alaska Native (AI/AN) youth face a history of adversity and trauma that are linked to academic and health concerns. Culturally grounded art-based interventions hold promise to address challenges faced by AI youth. AI culture and wisdom can evoke a sense of capability in youth that strengthens their resilience. This study sought to evaluate a culturally oriented art therapy curriculum on its impact on resilience, stress, and mood for AI youth (n = 36). A paired-samples t-test was conducted to compare the perceived stress scores of the participants before and after a 12-week art intervention. There was a significant decrease in participant perceived stress between the pre (M = 16.7, SD = 4.7) and post conditions (M = 20.4, SD = 4.6); $t(24) = -3.5$ $p = 0.002$). A paired-samples t-test was conducted to compare the mood of each participant before and after each instance of art activity to see if there was a self-reported change in mood. There was a significant improvement in participant mood in 10 out of 11 of the intervention weeks. Although no statistically significant change was found in participant resilience, participants in this study did report high levels of resilience. This study provides promising evidence that a culturally salient after-school art curriculum program can reduce stress and improve mood for urban AI youth.

BACKGROUND

American Indian and Alaska Native (AI/AN) youth living outside of tribal lands are immersed daily in a world steeped in settler colonialism with intense pressure to negotiate and adapt their traditions and values within non-Native settings (Joseph & Windchief, 2015). Over centuries, Native populations living in the United States have experienced an immense loss of life, forced deculturization, and suppression of their traditions and culture (Brave Heart, 1998;

Garrett et al., 2014). A systematic review of the effects of historical trauma found that Native people with perceived historical loss (e.g., loss of language, culture, spiritual ways, and loss of people) had more significant adverse health outcomes (Gone et al., 2019). Alienation, discrimination, and co-occurring stress result from living in environments that are hostile to Native culture and can present an increased prevalence of negative health and academic outcomes for Native youth such as anxiety, ADHD, school problems, and grade failures (Brockie et al., 2015; Kenney & Singh, 2016). The negative effects of discrimination may be more pronounced in educational settings outside of reservation land where protective factors such as local knowledge, language, and culture are less prevalent (Demmert et al., 2006).

Native youth are represented in relatively small numbers within urban schools and operate daily within settings where Native culture and traditions are not practiced and most interactions are with non-Native people (Moran et al, 1999; Weaver, 2001). In contrast to Native youth living within the socio-cultural boundaries of tribal communities, youth within urban areas often experience varying intensity, frequency, and quality of interactions with Western colonialism, often reducing the access to vital sources of resilience for Native well-being.

The movement of AI/ANs to urban settings can be traced back to a relocation program implemented by the Bureau of Indian Affairs in the 1950s. The program focused on AI/AN assimilation through employment and relocation. By 2010, nearly 70% of AI/ANs lived in urban settings (Burt, 1986). Depending on the level of connections to tribal homelands, access to AI/AN community leaders, and participation in cultural events, urban AI/AN families may express varying degrees of cultural connectedness. Acculturative stress, historical trauma, negative stereotypes, and discrimination are common challenges for Native youth living in urban environments (Brown et al., 2016). According to Dickerson et al. (2016), living in an urban setting impacts self-esteem and increases risk for substance abuse, suicide, and violence for Native youth.

In the literature, both negative and positive outcomes regarding Native well-being are well documented, although negative outcomes tend to be more frequently highlighted by researchers. While it is important to acknowledge the prevalence of risk factors and disparities, there is a need to identify the strengths and resources of the Native population to provide alternative pathways to addressing current disparities in mental health and education. For this reason, this paper will emphasize Native sources of strength as a framework for addressing mental health disparities.

Native Resilience

A critical component of well-being for many Native people living in urban settings is being able to sustain their culture and identity through deep connections with homelands and tribal communities (Clifford, 2007). For many Native communities, cultural resilience is largely associated with their culture, familial support, spirituality/religion, and community connectedness (Henson et al., 2017). Participation in traditional events can provide Native youth with a sense of belonging. Kulis et al.'s (2016) study of urban Native youth suggests that tribal affiliation ties to the reservation are crucial to youth being culturally oriented instead of bicultural.

Historically, resilience has been operationalized as an individual's ability to recover and overcome the obstacles of life (Masten, 2001; Garrett et al., 2014). Most models operationalizing resilience within the literature are based on Western values of individualism, such as the focus on an individual's ability to succeed despite adversity. More recently, models have expanded their definition in a more nuanced and multi-faceted way (Fast & Collin-Vézina, 2020). In newer models, resilience is conceptualized as an individual's capacity for adaption to adversity as a function of several interacting systems that can be biological, cultural, and interpersonal (Garrett, et al., 2014). Strand and Peacock (2003) define cultural resilience for Native people from a strengths-based perspective that all cultures have positive attributes, and the utilization of those practices and ways of thinking provide a means to overcome obstacles. To better understand Strand and Peacock's (2003) interpretation of Native sources of resilience, an exploration of the primary interacting systems Natives operate within is necessary.

Within Native cultural identity, both individual-level factors and community-level factors are found to significantly contribute to positive outcomes for Native communities (Fleming & Ledogar, 2008; Wexler et al., 2009; Kirmayer et al., 2011; Thomas & Mitchell, 2015; Fast & Collin-Vézina, 2020). Despite the great diversity in Native tribal identities, sources of strength across many Native cultures often relate to three categories: culture, spirituality, and social connectedness within family and community (Goodluck, 2002). Current research on cultural resilience, especially for Native populations, demonstrates a strong relationship between resilience and family, community, and cultural systems. Native identity is often considered a protective factor, and traditional values and practices can contribute to healing outcomes (Gfellner & Armstrong, 2012; Tyser et al., 2014; Zapolski et al., 2017). The use of Native language, culture, and practices has been found to evoke a sense of strength and capability in youth that helps strengthen resilience and problem-solving skills (Crooks et al., 2010). This is not unexpected as Native people often view themselves as existing in

unison with the energy, spirit, and history of their people (Lefler, 2009). A study completed by Grandbois and Sanders (2012) found that Native resilience is grounded in the family and community relationships that exist between the people. Community resilience can be defined as a collective process whose resources for surpassing obstacles come from a network of relationships, shared beliefs, and the availability of resources (Kirmayer et al., 2009). For many Native cultures, the arts can be used as a way families and communities can record their past, visualize their future, and pass down traditional cultural knowledge to the next generation (Parezo, 1990). Because of this, art serves as a symbol of distinct ethnic identity for the people and their spirituality (Parezo, 1990).

Culturally Salient Art Interventions

Art practices are considered an essential element of life for many Native cultures (Dufrene, 1994). Archibald & Dewar (2010) described art as part of a larger holistic model of health that connects Native people to their culture, spirituality, and identity. Among the Diné (i.e., Navajo) and the Hopi, art is a part of life, and it is inseparable from their cultural values and philosophical principles. Diné art forms include basketry, pottery, painting, weaving, and jewelry (Schmitt, 2016). Among the Hopi, additional art forms include fabrics, kachina dolls, and other crafts (Schmitt, 2016). Art is often used as a demonstration of origin mythology, prayer, and ritual and can teach youth the histories of their people (Dufrene, 1991).

Given the historical presence of art as a pathway to healing and balance for many Native populations, it presents a natural approach to implementing interventions with Native students in school settings. When art interventions are co-constructed with the community and are culturally relevant, Native communities may benefit from the use of art in therapy (Sherr, 2018). Although art is deeply ingrained within Native culture, art interventions are a relatively new modality within educational or clinical settings. Culturally based art interventions, in particular, have been shown to increase cultural knowledge and social well-being for Native youth (Allain, 2011). These programs can teach children essential skills such as self-observation, socialization, and emotion regulation and are essential to strengthening a child's resilience (Masten & Barnes, 2018). For Native populations, interventions should be formulated to address their cultural resilience as a means of reintroducing important cultural coping mechanisms (Crooks et al., 2010). Ultimately, culturally grounded art interventions can help reconnect children and families to their Native heritage through traditions such as ceremony and art.

Strengthening individual- and community-level resilience in Native youth is an evidence-based means to reduce the harmful effects of centuries of forced colonization and suppression of Native culture within the United States (Oré et al., 2016). Interventions based on traditional fine arts and enculturation experiences can be utilized to teach coping strategies and bring more balance and power to families and children affected by generational trauma (O'Neill et al., 2018). Art-based interventions for youth have been shown to improve general wellness, decrease stress, and improve mood, self-awareness, resilience, and self-esteem (Fanian et al., 2015). Cultural art programs created for at-risk youth correlate with an increase in positive adaptive behaviors (Fanian et al., 2015). Art and art-based activities play a significant role in various Indigenous cultures worldwide, making them a useful tool for intervention with this population. Art interventions typically involve a therapy based on engagement in artistic activities as a means of creative expression and symbolic communication (Granier, 2011). Art therapy theory posits that through the creative process of artmaking, a person is allowed to experience a symbolic transformation in how they think and behave (Granier, 2011). Chapman and colleagues (2001) explain that art can be used as a mechanism of synthesizing visual and verbal narratives to reconstruct traumatic memory into a more coherent autobiographical memory.

Art-based interventions, although seldom studied in the empirical literature, show promising success among Native youth and are gaining popularity in their use to address various challenges faced by Native populations. Examples include raised awareness on health issues, improved confidence, and strengthened connections within cultural communities (Fanian et al., 2015). Art-based interventions provide opportunities for youth to improve metrics of well-being, even if the environment/context they live in is limited in other ways. A study by Sitzer and Stockwell (2015) used a 14-week art therapy program for at-risk youth to improve metrics of wellness, including emotional, behavioral, cognitive, and social functioning, as well as resilience. They found that boys who participated in the 14-week art therapy intervention improved significantly on three out of five factors, with the most significant factors being emotional and social functioning. For girls, the art therapy intervention showed improvement across all of the evaluated wellness domains, with the emotional functioning factor being most significant. Emotional expression and identification were identified as some of the most important and significant achievements of the 14-week art therapy intervention (Sitzer & Stockwell, 2015).

Art interventions that are sensitive to cultural differences have been shown to enhance the connection to tradition and increase cultural knowledge for Native youth (Allain, 2011). Fanian

and colleagues (2015) evaluated a creative arts workshop called *Kots'ihhtla*, or “We Light the Fire,” and found that engagement in the arts program had the potential to strengthen resilience, form deep connections, and stimulate important discussions for community change amongst Native youth. Although creative arts and art-based therapy have recently been shown to be beneficial to youth, there are very few examples of art-based therapy utilizing quantitative measures to systematically evaluate outcomes. The vast amount of literature available on art-based therapy is qualitative (Stinson, 2009), with many relying on case study reports.

After-school Interventions

Native communities are working to promote a life beyond the past trauma through community organizations and Native youth programs. The aim is to improve the connection to tribal affiliation with the goal of deepening cultural identity and moving away from Western ideologies of personal achievement, financial status, and acquired possessions (Garrett et al., 2013). Given that many AI cultures strongly value community and social connectedness, it becomes clear that after-school programs can be a great source of social support for youth. A substantial body of developmental literature indicates that opportunities where youth can connect with supportive adults and participate with peers in meaningful and challenging activities can help youth develop and apply new social, emotional, and academic skills (Durlak et al., 2010). Involvement in an organized after-school activity that is both supervised and structured is related to improved mental health, decreased risk behaviors, and higher academic achievement (Durlak et al., 2010; Fredricks et al., 2019). In addition, after-school programs provide an accessible entry point for evidence-based interventions because they provide a supervised and structured environment for youth where they gain social, emotional, and academic skills (Fredricks et al., 2019). Native children, who value community connectedness and engagement, have been found to benefit from emotional engagement and higher social bonding and feelings of belonging (Fredricks et al., 2019). Youth engagement in after-school programs has been associated with decreased alcohol use, decreased marijuana and hard drug use, lower rates of school failure, and lower rates of sexual activity and pregnancy (Crooks et al., 2010). Although the mechanisms are not well-defined, youth engagement, as seen in after-school programs, is a non-specific protective factor connected to a wide range of positive outcomes.

After-school program participation is found to be especially beneficial, specifically for academically at-risk students, ethnic minorities, and students who live in a low-resourced context

(Lauer et al., 2006). Strengths-based after-school programming has been shown to reduce adverse outcomes like violence and substance abuse with Native youth (Crooks et al., 2010). Recent literature has shown that strengthening Native youth's sense of resilience through after-school programs that emphasize cultural connection is protective against adverse mental health outcomes and risk-taking behaviors like substance abuse (Thoits, 2010). Although there is some literature regarding the benefits of after-school programs for Native children, there is still a substantial need for more empirically based studies within the field.

Study Purpose

To address the lack of empirical evidence for the use of culturally grounded after-school art programming for Native youth, the current study seeks to systematically evaluate outcomes of a culturally oriented art therapy curriculum. Youth engaged in various culturally relevant art-based activities designed to strengthen emotional skills, resilience, and improve stress and mental health. In addition, this study was formulated in response to a program evaluation completed a year prior by De Heer and colleagues (2020) that identified the need for interventions that connect youth to tribal traditions and culture. Thus, the purpose of this study is to understand the impact of a culturally grounded art-based after-school program on Native youth resilience, perceived stress, and mood.

METHODS

This pilot project was a collaborative, community-based research project through a partnership between a university-based graduate certificate program, a Southwestern University in the United States, and a local Native-serving, after-school program provider.

Study Context

This study took place in the urban area of Flagstaff, Arizona, which is located in Coconino County. Flagstaff is composed of 7.8% Native American, which is 12 times greater than the national average (U.S. Census Bureau, 2019). The federally recognized tribes in the area are Havasupai Tribe, Hualapai Tribe, Hopi Tribe, Navajo Nation, Kaibab Band of Paiute Indians, and San Juan Southern Paiute Tribe. A quarter of Native Americans in Flagstaff live at or below the federal poverty level (Office of Indian Education, 2019; World Population Review, 2021).

Intervention

This project utilized a culturally oriented art therapy curriculum based on the *Start Up! A School-based Arts Curriculum for Native American Youth and All Cultures: Interventions for Development and Learning* (MacCarthy & Chapman, 2017). As a pilot study, the research team modified the original curriculum by shortening it to fit within the time constraints of the after-school program. The original program is designed for students grades K-12. It is divided into four sections: Physical Homeostasis, Emotional Homeostasis, Cognitive Homeostasis, and Creativity. Native cultural elements within the curriculum were designed by cultural advisors to include universal teachings across Native communities. Students were not expected to have knowledge of their culture or ancestry. The curriculum was primarily created as a means of reclaiming Native culture and amplifying cultural diversity among students. Typically, the curriculum is provided twice a week for a total of 36 weeks. Given the time restrictions, the curriculum dosage for this study was twice a week (2 hours each session) for 12 weeks. Aspects of each phase were piloted to assess salience and fit for the population. A single *Start Up!* session included 6 key elements: a) Movement/Sound, b) Breathing/Meditation, c) Bi-lateral Scribble, d) Bi-lateral Drawing, e) Art Activity, and f) Closure/Discussion. Adaptations were made when working with younger children versus older children to meet their developmental needs. Each element incorporated various Native cultural values and practices to engage youth in the community's Native heritage. Cultural values include Native language, spirituality, traditions, and honoring family, ancestry, community, and nature.

For the Movement/Sound section of the session, students were allowed to play outside on the playground. If weather conditions were severe, the students engaged in a game such as “Simon Says” or “Musical Chairs” inside the classroom. For the Breathing/Meditation section, the interventionist guided the students in a meditation where they practiced deep breathing techniques. Guided meditations are culturally grounded and teach students how to relax the body through deep breathing or visualization. For the Bi-lateral Scribble activity, the participants were given coloring devices and engaged in guided scribbling using both their left and right hand. Scribbles became progressively more complex as the art programming progresses. For the Bi-lateral Drawing, participants engaged in drawing culturally relevant images (e.g., nature, agriculture, symbolic animals such as bears, eagles, etc.) using both hands. Again, this activity engaged the participant’s tactile and auditory senses. For the Art Activity, participants engaged within a different culturally grounded art project every week. Art projects were utilized to teach various socio-emotional and

culturally relevant principles and were used as an expressive outlet for the youth. During and after the art projects, the interventionist engaged participants in conversations regarding the session's major lesson or theme. Participants were encouraged to discuss feelings, thoughts, and attitudes they may have regarding the session's project. The program held a level of flexibility to tailor to the unique developmental needs of every participant.

Curriculum

The main focus of this pilot curriculum was to foster problem-solving skills and promote positive social interaction and personal introspection through artwork and Native cultural teachings. Throughout the course of the curriculum, students learned to listen to others, be introspective, and give feedback and encouragement to their peers. An example of the curriculum is given as follows.

Weeks 1-2. The primary theme of the first two weeks was to build trust and establish routine. Students collaboratively created a list of group rules around respect for each other and the artwork produced during the program. Group facilitators explained the importance of respectful discourse surrounding personal stories and artwork created during the program. Activities included creating art about each student's family culture and working in pairs to create Native mandalas, or more specifically art closely resembling Native sand paintings and dream catchers. These activities focused on identity support and future-oriented thinking.

Weeks 3-5. For the next three weeks, the primary theme was to explore family cohesion through guided meditations, discussing the importance of family and ancestors, and art directives such as creating clay animal families and prayer ties. These activities help foster student thinking about self in connection to family and community.

Weeks 6-8. For weeks six through eight, the students focused on strengthening emotion regulation skills. The students engaged in discussion and art directives that facilitated learning how to self soothe and regulate emotions such as making emotion collages, anger boxes, and coping cards. Students were asked to discuss how families and cultures cope with challenges differently. Indigenous ways of healing through prayer, ceremony, and community connection were highlighted.

Weeks 9-10. Students continued to engage in activities to strengthen coping skills. Activities include guided nature meditations, using clay to create power animal necklaces, and drawing a bridge representing their past, present, and future. Discussions engaged student

reflections regarding changes they have noticed within themselves and how this insight may shape future perception of self.

Weeks 11-12. For the last two weeks, the program highlighted the importance of resilience through a cultural lens. Students engaged in activities that highlighted connection and giving back to their family and community. Students engaged in discussions regarding what they have learned and how they may honor their past and future. At the end of the program, students were invited to a family art show to give them the opportunity to showcase their art and progress throughout the program.

Participants

The participants for this pilot study were selected from a purposive convenience sample of students enrolled in an after-school program designed for Native youth living in the American Southwest. All participants, with parental permission and informed consent, were allowed to participate in the research portion of the art project. Fifty Native youth participated in the pilot art therapy program, ranging in age from 5 to 13 years old. After-school programs have varying attendance based on diverse family needs and the time of year. Because of this, 14 participants were not able to complete each stage of the intervention and were omitted from the final analysis, leaving a total of 36 participants. A convenience sample was utilized as this research was done in partnership with a community partner who regularly provides after-school programming for Native youth.

Study Design and Measures

This project was guided by individual and community mental health concerns. The evaluation of the pilot art therapy program was conducted as a single group, pre-post-test, within-subjects design with the participants as their control. The culturally salient arts programming was implemented for 12 weeks. A demographic questionnaire and three measures were used to assess child mood, resilience, and perceived stress. This study utilized two previously validated scales, the Perceived Stress Scale (PSS) and the Child and Youth Resilience Measure-Revised (CYRM-R) to assess child resilience and perceived stress. The PSS and CYRM-R measures were administered to the participants before the start of the arts programming (Week 1) and at the end of the programming (Week 12) as a pre-post measure. A smiley face Likert scale was used to assess participant mood at the start and at the end of each intervention session across 11 weeks to

assess changes in mood. The smiley face scale was not used on week 12 as the post-test was administered that week. The PSS, CYRM-R, and smiley face Likert scale were administered through Qualtrics, a widely used digital survey tool. Because of the level of the language utilized within these scales, for developmentally younger children, the questions were read and explained to them by research assistants.

Perceived Stress Scale

The PSS (Cohen, 1988) is the most widely used psychological instrument for measuring the perception of stress in the previous 30 days. It is a measure of the degree to which situations in one's life are appraised as stressful. Items assess how unpredictable, uncontrollable, and overloaded respondents find their lives. The scale also includes several direct queries about self-reported stress levels of the previous 30 days. Individual scores on the PSS can range from 0 to 40, with higher scores indicating higher perceived stress. Scores ranging from 0-13 are considered low stress, scores ranging from 14-26 are considered moderate stress, and scores ranging from 27-40 are considered high stress. The questions are general and are relatively free of content specific to any subpopulation group. The questions were explained by the research team to the younger participants, when questions arose about meaning.

Child and Youth Resilience Measure-Revised

The CYRM-R (Resilience Research Centre, 2019) is a 17- item instrument designed to measure youth resilience while accounting for differing social contexts and cultures. The CYRM-R has proven validity with Indigenous youth ages 11 to 19 in Canada and Australia, but its validity with AI populations is unknown (Jongen, et al., 2019; Langham et al., 2018). In the CYRM-R, items are rated on a five-point Likert scale (1 = does not describe me at all; 5 = describes me a lot). Higher scores on the CYRM-R indicate higher levels of resilience (Resilience Research Centre, 2019). This project utilized an unmodified 3-point measure (with responses going from 1-3). For overall resilience, the minimum score is 17 and the maximum score is 51. Additionally, two other sub-scores were calculated that examined caregiver/relational resilience and personal resilience. Caregiver/relational resilience relates to characteristics associated with the important relationships shared with either a primary caregiver or a partner or family. Personal resilience includes intrapersonal and interpersonal items. The minimum caregiver subscale score is 7 and the maximum score is 21. The minimum personal resilience subscale score is 10 and the maximum is 30.

Smiley Face Likert Scale

The smiley face Likert scale was utilized as a means of assessing participant mood. Participants were asked to evaluate their mood based on a 5-point emoji scale ranging from very sad to very happy faces. Smiley face Likert scales allow for children to communicate their emotions and express their judgments much better than they may verbally (Hall et al., 2016). This method of evaluating mood has been shown to be effective with younger children, especially when adjusted in analysis with neutral as the low score (Hall et al., 2016).

Procedure

This study was approved by the Institutional Review Board at a Southwestern United States university and was reviewed and approved by the university's Tribal Liaison in accordance with the tribal consultation policy. Before participation, parents or guardians received an informed consent agreement describing the format of the program and the potential benefits and risks for participation. All youth in the after-school program were allowed to participate in the art projects. However, data was only collected from those with informed consent on file. Youth who opted to participate in the study also completed a child assent form.

Statistical Analysis

Prior to analysis, all variables were examined for accuracy of meeting standard parametric assumptions. All statistical analyses were conducted with SPSS version 26.0. Comparisons were regarded as significant at $p < 0.05$ unless indicated otherwise. Reliability analysis of the 10 items in the PSS scale was conducted. Cronbach's alpha levels indicated that the questionnaire reached acceptable reliability (Cortina, 1993), $\alpha = 0.85$.

RESULTS

Demographics

Table 1 provides a full description of the study sample. Study participants ($n = 36$) ranged in age from 5-12 years ($M = 8.25$, $SD = 1.79$). All participants identified as AI and were enrolled in the after-school program.

Table 1
Paired samples t-test (mood pre/post intervention session)

Session Number	Mean	Std. Deviation	95% CI of the Difference		t	df	Sig. (2-tailed)
			Lower	Upper			
Pre/post 1	-0.32	0.69	-0.605	-0.035	-2.317	24	0.029*
Pre/post 2	-0.172	0.889	-0.511	0.166	-1.044	28	0.305
Pre/post 3	-0.417	0.654	-0.693	-0.141	-3.122	23	0.005*
Pre/post 4	-0.417	0.881	-0.788	-0.045	-2.318	23	0.03*
Pre/post 5	-0.44	0.651	-0.709	-0.171	-3.381	24	0.002*
Pre/post 6	-0.357	0.731	-0.641	-0.074	-2.585	27	0.015*
Pre/post 7	-0.455	0.739	-0.782	-0.127	-2.887	21	0.009*
Pre/post 8	-0.818	0.958	-1.243	-0.393	-4.006	21	0.001*
Pre/post 9	-0.5	0.673	-0.798	-0.202	-3.487	21	0.002*
Pre/post 10	-0.583	0.776	-0.911	-0.256	-3.685	23	0.001*
Pre/post 11	-0.435	0.728	-0.749	-0.12	-2.865	22	0.009*

Note: Statistical significance is marked by an asterisk.

Perceived Stress

The majority of participants reported moderate stress ($n = 32$), followed by low stress ($n = 3$), and high stress ($n = 1$). A paired-samples t -test was conducted to compare PSS stress scores by participant before and after the art intervention. There was a significant difference in the scores in the pre ($M = 20.1, SD = 4.6$) and post conditions ($M = 16.8, SD = 4.6$) $t(24) = -3.5, p = 0.002$.

Resilience

To understand the range of scores within our sample, the pre-test sample scores were ranked to contrast the top half of scorers against the lower half of scorers. For this sample, scores ranged from 29-48. Lower resilience scores for our sample fell between 29-38, with higher resilience scores falling between 39-48. Sixteen percent of scores fell within the lower resiliency range, while the majority (83%) fell within the higher half of the resilience range for this sample. A post-test score of resilience was measured, but the change in scores was not significant.

Mood

Smiley face choices were converted to a Likert scale (1 = very sad; 5 = very happy) to allow for statistical analysis. A paired-samples t -test was conducted to compare the mood of each participant before and after each intervention session to see if there was a self-reported change in mood. Due to missing data, only 11 intervention weeks were analyzed. There was a significant

difference in the scores in 10 out of 11 of the intervention weeks as seen in Table 1 below. The significant difference in scores indicates an improvement in mood from pre- to post-art activity. In order to understand the change from pre to post in this sample, a difference score was calculated to aid in analysis and provide a more complete picture of the differences between pre and post scores.

DISCUSSION

The purpose of this study was to determine the impact of a culturally sensitive art-based after-school program on resilience, perceived stress, and mood for Native youth. Although this project was a small pilot study, the findings suggest the expansion of this culturally grounded art intervention would be beneficial for Native youth.

Before the art intervention began, stress levels were assessed, revealing that the majority of youth in the study were moderately stressed. This finding was congruent with a large body of literature indicating that minority populations, and Native populations specifically, experience high levels of stress. Stress was assessed at the end of the 12-week art intervention, and stress scores were shown to be significantly lower than the pre-intervention scores. Although we can't directly attribute this decrease in stress to the art intervention, it may be likely that art has a promising ability to reduce participant stress levels.

In addition to collecting stress scores before the intervention, we also collected a youth resilience measure. There was no significant difference in resilience found before and after the art intervention. Unlike stress scores, resilience is not considered an acute measure, so little change over a short period of time was not surprising. In addition, given that resilience for Native youth is primarily rooted within cultural and Native heritage, it may be better measured through qualitative means rather than quantitative means. Because of the nature of resilience measures, we decided to use cut-offs that were determined by our participant sample. While a few students fell within the lower half of resilience scores, the majority of participants fell within the higher half of resilience scores. So, while the participants were moderately to highly stressed, they were also highly resilient. Our findings concerning resilience were congruent with the existing body of literature, indicating that Southwestern Native populations have a high level of resilience (Oré et al., 2016; Wexler et al., 2009).

In addition to stress and resilience, participant mood was assessed before and after each intervention session to determine if the interventions had an effect on participant mood. In the

literature, mood is shown to be a proxy measure for stress, with lower mood being associated with higher levels of stress (Martyn-Nemeth et al., 2009). When examined statistically, participant mood was shown to improve in 10 out of the 11 instances of the art activities. This is an important finding, as it shows that culturally based art interventions may be able to improve the daily mood of Native youth. This finding also helps strengthen the connection that interventions may be able to lower the perception of stress.

This 12-week pilot intervention shows promising findings regarding improving levels of stress and mood for a historically marginalized and at-risk population. It is critical for culturally grounded after-school programs like this to be evaluated for their effectiveness in order to promote their use in Native communities. The mechanisms of the improvement seen in specific student populations are essential but underexplored in the existing literature. Future research should address this gap by exploring how individual and program attributes moderate or mediate the relationship between participation in after-school activities and improved outcomes for specific populations of youth. Currently, longitudinal examinations of after-school interventions are minimal. They do not typically follow up with participants after the intervention has ended, making it challenging to explore the effects after-school programs have long-term (Durlak et al., 2010). Much of the previous literature focuses on academic outcomes but neglects other proximal outcomes like social and emotional skills (van Westrhenen & Fritz, 2014). Examining the impact culturally grounded interventions have on the level of cultural connection for Native youth would also be an area for future research. Lastly, given the promising findings of after-school programs, it will be important to examine factors related to implementing after-school programs to demonstrate the benefits of such programs more thoroughly to youth and society at large.

Limitations

This study contains a number of limitations. The overall design of this pilot study was a small sample size pre-test/post-test study without randomization or a control group. The culturally grounded arts program was only evaluated in one after school program with participants of diverse developmental ages. In addition, it is difficult to rule out attrition, testing effects, demand characteristics, or extraneous impacts from other events. For future studies it would be useful to collect data from non-Native students from the same area and attending the same schools to determine where students may start or end the program differentially whether they identify as Native. Given that the curriculum does not specifically reference any particular tribal affiliations,

future studies should consider incorporating targeted cultural elements for specific Native groups to better meet the local community needs. Incorporating Native interventionists and community shareholders may help with this goal. Existing literature suggests that having trained and culturally congruent personnel can be important for youth when connecting to their Native community (Whitesell et al., 2018). Given the intervention facilitators were non-Native, collaboration with an AI/AN community shareholder to ensure cultural sensitivity within the research and intervention process was a priority. Although, the positive results may have been amplified if the facilitators had themselves been of Native heritage. Another limitation was attrition of research participation. Of the 50 initial participants, 14 participants did not participate in every intervention or were not able to stay and complete an intervention. Within the methodology, there is some evidence that the smiley face Likert scale to measure mood may not adequately capture the perceived mood and that participants may provide a positive response to meet a perceived social norm (Hall et al., 2016). Although both the PSS and CYRM-R were validated on AI/AN populations, they were not validated on children ages 5-7. Finally, it should be noted that Native groups in the United States each have unique cultural worldviews specific to each Native Nation; this study may not be generalizable to all Native groups of the United States.

Implications

Using culturally based arts as a tool has been shown to improve both immediate outcomes, such as mood, and longer-term outcomes, such as emotional regulation, resilience, self-esteem, and overall wellness. After-school programs provide a unique entry point for interventions that emphasize capacity and skill-building as well as prevention. After-school programs for Native students may be especially useful in providing a sense of community for youth living in areas more disconnected from tribal lands and sources of Native culture. Art-based after-school programs can provide Native students a place where they can express themselves through art and connect with other Native youth. Future research needs to prioritize empirically validating the effectiveness and appropriateness of cultural, art-based Native programming and enabling broader dissemination and implementation of Native evidence-based interventions. Given the diversity in Native culture and traditions, community research initiatives should engage in adapting Native interventions to better suit the unique tribal communities they are meant to serve. Further research on the longitudinal benefits of culturally based after-school programs can determine the long-term benefits of these programs for Native youth.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interests.

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