IPP name: United American Indian Involvement, Inc.

CDEP name: Native American Drum, Dance, and Regalia Program

Priority population: Native American

Local evaluation period: August 2017-March 2021

This evaluation is funded by California Department of Public Health's Office of Health Equity California Reducing Disparities Project (CRDP), Phase II.

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# I. Executive summary

The Native American Drum, Dance and Regalia program (NADDAR) was created in 2005 recognizing the need to reduce mental health disparities among urban American Indian/ Alaskan Native Families in Los Angeles County by incorporating culturally sensitive and community-based methods to reduce mental health issues and increase community connectedness. The NADDAR Program has been selected to participate in the California Reducing Disparities Project- Phase II (CRDP-II), Statewide Evaluation (project number is 2017-013). The aim of the CRDP-II project is to conduct a statewide investigation on the effectiveness of cultural interventions to reduce health disparities among minority populations across California. NADDAR is one of 35 culturally responsive, innovative Implementation Pilot Projects (IPPs) across the State of California working in five population groups that have experienced intergenerational mental health disparities: African American; Latino/x; Asian and Pacific Islander; Native American; and LGBTQ+.

NADDAR is an American Indian/Alaska Native (AI/AN) culturally based program that incorporates cultural activities and cultural-based education founded upon AI/AN traditional ideal of health and wellness. This interactive program incorporates AI/AN drumming, dancing, and regalia making providing participants with the opportunity to engage in healing activities that has been utilized for many centuries among indigenous populations to promote healing and self-expression. This program consists of 8 workshops that focus on American Indian/Alaska Native (AI/AN) drumming, dancing, and regalia traditions. These workshops provide an opportunity for both adults and youth to learn about traditional AI/AN ideals of wellness, to enhance their cultural identity and self-esteem, to decrease stress levels, and to enhance their social skills through community-enhancing activities. NADDAR utilizes the Medicine Wheel as its conceptual model which highlights the four dimensions of wellness recognized historically by AI/ANs. The NADDAR Program provides alternative coping skills and strategies to address mental health issues through 8-week programs on health and cultural education led by cultural leaders in the community.

By utilizing a curriculum rooted in Indigenous teachings, this culturally tailored intervention aimed to 1) increase connection to the AIAN culture and traditions, 2) strengthen culture identity, 3) increase spirituality, 4) demonstrate lower rates of mental health disorders, 5) demonstrate lower substance use rates, 6) demonstrate improved coping skills, and 7) demonstrate overall improved health and wellness.

This evaluation utilized a triangulation design. The triangulation design procedure is a one-phase design that uses a mixed-methods approach through qualitative (pre/post focus groups) and quantitative (pre/post surveys) data collection during the same timeframe and with equal weight. Pre/post means were analyzed using the dependent t-test for scales with continuous variables and the McNemar's test for categorical variables. Correlations were included to demonstrate a simple relationship between pre/post outcomes. Findings with $p<0.05$ were considered significant.

Key findings from this evaluation were strengthened cultural identity after completing NADDAR among adults confirmed by two scales—Multigroup Ethnic Identity Measure ($p<.0001$) and AIAN Cultural Identity Scale ($<0.01$). Unexpectedly, increase levels of anxiety were observed after completing NADDAR ($<.0001$). This may be due to feelings of loss of social support when NADDAR is not in session. Although there were

no significant findings, youth overall tended to have increased cultural identity, sense of community, and decreased levels of depression and anxiety. Youth also had zero cigarette use, alcohol use (over 5 drinks), and prescription drug use at the conclusion of NADDAR. There were no significant findings among children. However, all measures had observed improved outcomes including less feelings of historical loss, historical loss symptoms, increased hope, and increased sense of community.

Work conducted on NADDAR illustrates how an urban AI/AN community in Los Angeles County can aid in the development and analysis of a promising new community based mental health intervention designed for urban AI/AN families. Utilizing research activities directed under the CRDP-II program, our research team was able to gather very valuable qualitative and quantitative data. Pre-intervention qualitative data explain why there is a need for culturally centered interventions that utilize traditional practices to help decrease the burden of mental health issues for urban AI/AN families. Quantitative data generated provide an opportunity to understand how a culturally centered intervention can benefit urban AI/AN families.

Findings from this study demonstrate the potential for NADDAR to help urban AI/AN people connect more with their community, to engage in AI/AN traditional practice that emphasize social connectedness and healthy behaviors and help to instill a high sense of cultural pride and resilience that will help to create and sustain healthy urban AI/AN families and communities. Research activities completed in this project demonstrate the benefits of cultural integration in programming and highlight the need for implementation of NADDAR throughout Los Angeles County and other urban AI/AN communities throughout California. Also, due to our partnership with the urban AI/AN community of Los Angeles, and very high positive response of NADDAR within the community, we are also planning on strategies for further implementation and studies that can help inform the field regarding the potential benefits of culturally centered programming for urban AI/AN families.

# II. Introduction/Literature Review

The Indigenous population of the United States decreased by an estimated 95% shortly after the arrival of European colonists (Barkan, 2003). Those that survived continued to suffer extreme changes due to colonization, forced removal, and relocation of entire tribal communities from ancestral lands onto reservations (Brave Heart, et al. 2011; Grayshield, L., et al. 2015). American Indian/Alaska Natives (AI/AN) were further impacted through missionization, loss of traditional spiritual practices, and forced assimilation such as the systematic placement of Native children into boarding schools, where youth were prohibited from practicing their tribal language and customs (Evans-Campbell, 2008; Brave Heart, et al., 2011; Grayshield, L., et al., 2015). This history has had a profound and detrimental impact upon AI/AN communities. Such experiences have resulted in complex intergenerational social, physical, and mental health disparities referred to as historical trauma (Brave Heart & DeBruyn, 1998).

Historical trauma (HT) is defined as cumulative emotional and psychological wounding across generations which emerges from massive group trauma (Brave Heart,

2003). HT may also be characterized as patterns of thoughts, emotions, and behaviors that negatively affect the physical, psychological, and social well-being of an individual or group in successive generations (Brave Heart, 2003). Brave Heart and DeBruyn (1998) highlighted that understanding AI/AN history, and the impact of HT is vital to the healing of AI/AN communities.

There is an urgent need to address and reduce mental health disparities among AI/AN communities. Disparities have developed as a result of continued oppression, loss of lives, land, and culture as well as disruption in social relations, poverty, and other daily chronic stressors (Goodkind, J.R., et al. 2015). AI/ANs are impacted by high rates of suicide, substance use, homicide, accidental deaths, domestic violence, and child abuse (Brave Heart et al., 1998; Goodkind et al., 2015). Diverse barriers and under-resourced mental health services further contribute to disparities while racism, oppression, and internalized oppression continue to exacerbate inequities (Freire, 1968; Hodge, D.R., Limb, G.E., & Cross, T.L. 2009). Such disparities have significant public health impacts that must be addressed with recognition of the diversity of tribal communities and tribal-specific needs (Wallerstein & Duran, 2010). Services must rebuild upon AI/AN values, practices, and perspectives (Whitbeck, 2006; Hodge, et al, 2009).

Today there are 600 diverse tribal communities that represent strong, resilient nations across the United States (O'Keefe, V. M., et al. 2021). AI/AN beliefs and practices vary by tribe and may include prayer, ceremony, storytelling, traditional healers, and daily cultural practices to sustain balance and wellness (Gone, 2010; Goodkind et al., 2015; Whitbeck, et al. 2012). Many tribal communities share congruent worldviews and have developed intertribal organizations in response to the need to find community and access mental health service. Over 70% of AI/ANs reside in urban areas with increasing migration to cities (U.S. Census, 2010). In large urban settings, AI/ANs are often isolated and have limited contact with other AI/ANs or may not regularly attend AI/AN cultural events (Weaver, 2012). For example, the complex urban landscape in Los Angeles contributes to social fragmentation and disconnection among AI/ANs as the urban setting offers less accessibility to culturally relevant services. Furthermore, lack of inclusion of urban AI/ANs in broad public health decisions and discussions further contributes to the shortage of culturally relevant and accessible family-based behavioral interventions for this population. Clearly, a need exists for more behavioral interventions aimed toward enhancing cultural connection, social networks, and family cohesion for urban AI/AN families.

There are three mental health providers dedicated to the Indigenous community in Los Angeles County. Existing mental health services include Seven Generations Child and Family Services of United American Indian Involvement (UAII) located in Los Angeles, American Indian Counseling Center (AICC) located under the Department of Mental Health in Cerritos, and Indigenous Circle of Wellness (ICOW) a private therapy practice located in Commerce, CA. Each organization serves community members from across the county although UAII is the only entity with an additional location where participants may also access services in Palmdale, CA. UAII is also the only designated Indian Health Services facility within Los Angeles County. UAII, AICC and ICOW offer

therapy in addition to culture and community engagement opportunities such as workshops, family services and trainings designed to foster support of Indigenous community members.

Services that center and uplift traditional AI/AN practices such as drumming, dancing, beading, and basket making are scarce within urban settings and are offered through two of the organizations. Such culturally inclusive services have been recommended by AI/AN community leaders to help improve mental health, enhance cultural identity, and decrease the burden of substance use in urban AI/AN communities (Beckstead, D. J.,et al. 2016; Walters, K. L., et al. 2002). Community and family events, cultural foods, arts, music, stories, spiritual practices and ceremonies are visible elements of culture that support positive emotions and development (Cross, 2003). The social support of family and community provide a sense of hope and reinforce wellness through strengthened connections. The praise and admiration of elders and the teachings of mentors in such culturally inclusive services also promote optimism (Cross, 2003). However, evidence-based behavioral interventions available for urban AI/ANs families are very limited, especially across Los Angeles County.

It is vital to understand cultural views, traditions and practices related to healing and wellness (Goodkind et al., 2015; Hodge et al., 2009; Gone, 2004; Gone & Trimble, 2012). Further, it is critical to implement intergenerational approaches to wellness that recognize the importance of culture and listening to individual, family, and community experiences. Historically, AI/AN families have recognized nurturing systems that included extended family, kin systems, traditional healing systems and other tribal customary reports (Red Horse, J.G., et al. 2000). Red Horse et al. state, "*In tribal practice, family preservation involves bringing families in balance with community, spiritual and other natural relationships...Each is part of a larger system of family, extended kinships, clans, community, tribe and the natural world."* Further, such approaches build on everyday cultural values and strengths to facilitate healing, promote positive intergenerational relationships, and expand cultural knowledge among youth, which are all protective factors against mental health and substance abuse problems (Whitbeck, et al. 2004). Research by Gray and Cote (2019) suggest that a high degree of cultural connectedness supports in reducing the effects of trauma and provides epidemiological support for the concept of 'culture as treatment' against the intergenerational effects of Indian Residential Schools (boarding schools) on the mental health of Anishinabe young adults.

Researchers and providers must include Indigenous perspectives and methodologies to develop, implement and research effective approaches to address mental health challenges among AI/AN communities. Native perspectives on wellness emphasize balance among the interconnected areas of spirit, body, mind, and emotion. From this perspective, mental health is a product of balance and harmony among these four areas (Hodge et al., 2009). Snowshoe, A., Crooks, C. V., Tremblay P. F., Hinson, R. E. (2017) demonstrated correlations between positive identity, traditions, and spirituality (three major components of cultural connectedness) and positive mental health. It is imperative to develop and expand prevention and treatment efforts that build

upon AI/AN wellness traditions as most wellness services are simply ineffective and do not meet the needs of Indigenous communities (Hodge, et al., 2009).

Historical trauma intervention research and practice contributes to the resiliency of urban AI/ANs. Culturally inclusive services empower AI/ANs to reclaim traditional practices and contribute to healthy communities unencumbered by mental health disparities such as depression, overwhelming grief, substance use, and traumatic responses (Brave Heart, 2011). Such culturally responsive interventions driven by the community restore traditional wellness and reduce emotional suffering and improve the quality of life, behavioral health, and well-being of AI/ANs in urban settings.

# IV. CDEP Purpose, Description, & Implementation (A-B)

## A. CDEP purpose

**Purpose:** Native American Drum, Dance and Regalia (NADDAR) Program (NADDAR) is an American Indian/Alaska Native (AI/AN) culturally based program that incorporates cultural activities and cultural-based education founded upon AI/AN traditional ideal of health and wellness. The NADDAR program is a prevention and early intervention program that aims to prevent and/or reduce mental health problems and substance abuse among urban American Indian/Alaskan Native families in Los Angeles County by decreasing isolation, mental health severity and increasing cultural identity, family cohesion, and cultural connectedness.

## B. CDEP Description & Implementation Process

**Description:** NADDAR is an 8-week intervention that includes a 15-minute curriculum covering a topic related to mental wellness, cultural teachings, and shared AIAN history each week. This interactive program incorporates AI/AN drumming, dancing, and regalia making that provides participants with the opportunity to engage in healing activities that have been utilized for many centuries among Indigenous populations to promote healing and self-expression.

Native American Drum, Dance and Regalia (NADDAR) Program is an American Indian/Alaska Native (AI/AN) culturally based program that incorporates cultural activities and cultural-based education founded upon AI/AN traditional ideal of health and wellness. This interactive program incorporates AI/AN drumming, dancing, and regalia making providing participants with the opportunity to engage in healing activities that has been utilized for many centuries among indigenous populations to promote healing and self-expression. This program consists of 8 workshops that focus on American Indian/Alaska Native (AI/AN) drumming, dancing, and regalia traditions. These workshops provide an opportunity for both adults and youth to learn about traditional AI/AN ideals of wellness, to enhance their cultural identity and self-esteem, to

decrease stress levels, and to enhance their social skills through community-enhancing activities. NADDAR utilizes the Medicine Wheel as its conceptual model which highlights the four dimensions of wellness recognized historically by AI/ANs.

The program began with an orientation for all program participants as an introduction to the program curriculum. Both the song and dance workshops covered the background of each instructor, gender roles, and introduced the basic concepts of each topic. Participants had the option to choose between the dance workshops or drum/singing workshops. All workshops are facilitated at that same place and time. Each week a new song and dance style was covered. For men, there is the grass dance, the traditional dance, and the fancy dance. For women, there is the jingle dress dance, fancy shawl dance and traditional dance. Drum workshops consisted of an introduction to the drum, the songs and the meaning of the northern style and southern style traditional songs. All the workshops were taught in a respectful and culturally appropriate manner. Not only were AIAN musical techniques shown, but also more importantly, the traditional values, protocols and expectations of the American Indian traditional songs and dance were taught. The regalia making workshops and the beading workshops were offered weekly as a part of the program for the participants to begin creating their regalia. Participants were also able to participate in a separate beading class to assist with bead work on their regalia or making other types of bead work. The final session of each cycle included a performance at the end of the workshop to show all what the dancers and drummers have learned.

The NADDAR program consisted of the dance, drum, singing and regalia workshops that included:
Drumming – a structured activity that involves a historical introduction to AI/AN music and the customs of drumming and drum making by active drummers and artists.
Singing – an oral presentation on songs that are used in contemporary powwows and from tribal chants will be taught. This course is predicated on melodies handed down from generation to generation in a traditional, ceremonial and medicine songs context that can vary from tribe to tribe.
Dancing - local AI/AN dancers provide an instructional class on how the different dance styles are performed. Dance practice is conducted in a large open room where dancers learn in a mock arena.
Arena traditions – instruction is provided on powwow arena etiquette and traditional practice.
Regalia design - powwow dancers are often required to make or design their own regalia to wear when they dance. The outfits honor the family's clan, which often determine the color of the outfit, length, materials used, and beadwork patterns. AI/AN artists, families, and community members teach this component of our cultural program. The Beading class was part of the regalia making, where participant learned different styles of bead work.

UAII has a culture coordinator who planned and organized the cultural activities. They have been assisting with NADDAR for the last 8 years. UAII subcontracts with individuals in our community to teach the dancing, drumming, singing, and regalia making for 8 years. There are 5 dance instructors that have knowledge of different dances, such as Fancy Shawl and Jiggle dance. There are 4 drum/song instructors that

have been teaching in our community for over 20 years. AI/AN instructors taught regalia making and beading workshops. All instructors are respected and recognized by the AIAN community.

**Implementation:** The NADDAR program consists of 8 workshops per cycle that focuses on AI/AN drumming, dancing, and regalia traditions in addition to a 15-minute curriculum. These workshops provide an opportunity for both adults and youth to learn about traditional AI/AN ideals of wellness, to enhance their cultural identity and self-esteem, to decrease stress levels, and to enhance their social skills through community-enhancing activities. NADDAR utilizes the Medicine Wheel as its conceptual model which highlights the four dimensions of wellness recognized historically by AI/ANs. The program is intended to serve both AI/AN children ages 3-17 and AI/AN adults ages 18+ who reside in Los Angeles County. All participants in the NADDAR intervention were AI/AN community members ages 3+ who reside in Los Angeles County.

The cycle begins with an orientation for all program participants that is an introduction to the program curriculum and cultural activities. During week 1 participants are given the pre-survey to complete, introduced to different styles of pow-wow dancing and drumming, and encouraged to pick a dance style or drumming style they would like to learn during the cycle. In Los Angeles County (and many other urban areas), pow-wow style of dancing and singing are the cornerstone of AI/AN cultural activities. Each week participants gather for 2 hours which consists of a shared meal, 15-minute presentation about a selected topic, and 1 hour of drum and dance instruction. All the workshops are taught in a respectful and culturally appropriate manner by AI/AN community members and elders. Participants break out into smaller groups during the drum and dance portion of the workshop to focus on their respective drum and dance style. Each workshop concludes with a collective round dance with all dancers and drummers. An example of the types of dance instruction provided are grass dance, jingle dress dance, and fancy shawl dance. In addition, there are other friendship and inter-tribal dances, many of which the community at large may participate in when they attend a pow-wow. The drumming portion consists of introduction to the drum, the songs, and the meaning of the traditional songs. The regalia making workshops and the beading workshops are offered as a part of the program for the participants to begin to build on their regalia.

UAII hosted 4 complete cycles of NADDAR from September 2018 to October 2020. Cycle 1 and 2 were hosted at UAII near downtown Los Angeles. Cycle 3 was hosted in Southeast Los Angeles to increase access to community members who live in the greater Los Angeles region. Cycle 4 was hosted at UAII for the first 3 sessions but was cancelled due to the 2020 Covid-19 restrictions. Due to Covid-19, the final cycle (cycle 5) was hosted virtually on Zoom. All participants from cycle 4 were invited to complete the intervention in cycle 5. Each cycle consisted of 8 workshops that took place once a week and lasted 2 hours. This intervention was attended by urban AIAN community members and families who reside in LA county. Participants were expected to attend all 8 workshops.

The principal investigator and lead NADDAR instructor trained staff on NADDAR format and protocols at the beginning of each cycle. This included an overview of the

evaluation process, format of each session, and how to interact with community members to keep them engaged. Adherence was measured through weekly meetings at the end of each session. The principal investigator and lead instructor led the discussion while the program evaluator took notes. These weekly meetings allowed instructors to provide feedback in real time to accommodate needs of the instructors and/or enhance participant experience. This became particularly important as NADDAR pivoted to a virtual setting during the Covid-19 pandemic. Each week the sessions provided a chance to hear feedback about technological issues, delivery of presentations, and highlight what is working well.

Changes implemented based on feedback included dedicated breakout sessions for individual drumming and dancing style. Participants and instructors from cycle 1 felt the amount of individual attention was not enough to meaningfully learn and retain the curriculum. Cycles 2-5 included 30-minute breakout sessions as a result.

**Implementation During Covid-19 Restrictions:** In response to the Covid-19 pandemic and stay-at-home orders, UAII hosted the final cycle (cycle 5) of NADDAR virtually via Zoom. Participants who were consented for cycle 4 were eligible to participate in cycle 5. New participants completed their consent forms over the phone with a staff member and completed their pre-survey online through the Survey Monkey platform. Incentives were sent as a gift card via email. All participants were asked if they needed any technological assistance that included internet access, devices to connect to Zoom, and assistance navigating Zoom. The same accommodations were given to instructors who also provided their workshops virtually from their homes. Food was delivered to each family or individual participant at the beginning of each session. This allowed participants to enjoy their meal together, check-in with fellow participants and UAII staff, and listen to the 15-minute presentation. Questions were asked by participants by unmuting their microphone, asking questions in the chat box, or using the raised hand feature until they were called. The participants would indicate at the beginning of the session which drum or dance style they would prefer to learn. At that portion of the program, the “breakout room” feature was used to put participants in a breakout room with their specific facilitator. One accommodation families would plan for is registering multiple devices (phone, laptop, iPad) if they had different family members who wanted to learn different styles.

# V. Local Evaluation Questions

By utilizing a curriculum rooted in Indigenous teachings, this culturally tailored intervention aimed to:

1) increase connection to the AIAN culture and traditions,
2) strengthen culture identity,
3) increase spirituality,
4) demonstrate lower rates of mental health disorders,
5) demonstrate lower substance use rates,
6) demonstrate improved coping skills, and
7) demonstrate overall improved health and wellness.

There were no changes to evaluation aims during the evaluation period. All goals of the evaluation were accounted for in the qualitative and quantitive analysis.

# VI. Evaluation Design & Methods

**Qualitative and Quantitative Mixed Methods**

**A. Design**

This evaluation utilized a triangulation design (Creswell et al., 2003). The triangulation design procedure is a one-phase design that uses a mixed-methods approach through qualitative (pre/post focus groups) and quantitative (pre/post surveys) data collection during the same timeframe and with equal weight. The intention is to converge different data collection methods to bring differing strengths together. This evaluation used this research design to compare, contrast, and expand quantitive results with the qualitative results. Specific data analysis methodology is included in the "Data Analysis Plan Implemented" section. The lead evaluator along with the program evaluator decided on the methodology and interpreted the analysis. The results were shared with UAII staff, AIAN community members, and AIAN subcontractors of the NADDAR program. Their feedback has been incorporated in the final interpretation of the results. The local evaluation human subject's protection protocol was submitted to, reviewed by, and approved by the Institutional Review Board of the Pacific Institute for Research and Evaluation (the Native American Technical Assistance Provider's organization). The entire period of data collection was covered by this IRB oversight, which included protocol revisions made in response to the COVID-19 pandemic (see below).

**B. Sampling Methods and Size**

*Focus Groups*

A convenience sampling was used for pre and post focus groups. Recruitment consisted of advertisement on social media and among pre-existing relationships within the organization and staff members. Eligibility to participate in the focus groups were those who self-identified at AI/AN and resided in Los Angeles County. An additional eligibility requirement for the post focus groups is if they were a previous participant of the NADDAR intervention. One pre and post focus group was conducted for each group: 1) self-identified AI/AN men and women (ages 18-59), 2) AI/AN boys and girls (ages 3-17), 3) Los Angeles based providers who have worked at least 1-year with the AI/AN community, and 4) the NADDAR community advisory board composed of AI/AN elders and cultural leaders.

Each focus group aimed to have between 6-8 participants and lasted approximately 1-1.5 hours. Participants received a $25 gift card for their time. Sample sizes for each focus group (pre and post) are provided in Table 1.

**Table 1: Sample size for pre and post focus groups**

| Focus Group Type | Pre-Focus Group | Post-Focus Group |
|---|---|---|
| Adult | 6 | 7 |
| Youth | 6 | 5 |

| | | |
|---|---|---|
| AIAN Providers | 4 | 5 |
| Community Advisory Board | 5 | 4 |

*NADDAR Intervention*

UAII hosted 4 complete cycles of NADDAR from September 2018 to October 2020. Cycle 1, 2, and 4 were hosted at UAII near downtown Los Angeles. Cycle 3 was hosted in Southeast Los Angeles to increase access to community members who live in the greater Los Angeles region. Due to Covid-19, the final cycle (cycle 5) was hosted virtually on Zoom. Each cycle consisted of 8 workshops that took place once a week and lasted 2 hours.

*Recruitment*

All AIAN community members were targeted for recruitment using the network of AIAN Los Angeles County community-based organizations including UAII's membership base. According to the 2019 US Census, 162,763 people who partially or fully identify as Indigenous reside in Los Angeles County. After consultation with the community advisory board and AIAN UAII staff, a convenience sampling method was used for study recruitment. Recruitment consisted of advertisement on social media and among pre-existing relationships within the organization and staff members. Recruitment materials were shared with a local AIAN two-spirit and LGBTQ+ community-based organization. Eligibility to participate in this portion of the evaluation were for those who self-identified as AI/AN, resided in Los Angeles County, and had not previously participated in the NADDAR evaluation. Potential participants were excluded if they did not meet the eligibility requirements. Each cycle aimed to have about 20 participants. A power analysis was not utilized for this evaluation.

*Sample*

The intended population for the NADDAR evaluation were AIAN who reside in Los Angeles County. All participants who were served by NADDAR identified as AIAN and resided in Los Angeles. Sample sizes for each cycle and pre/post completion are provided in Table 2.

**Table 2. NADDAR Intervention Sample by Cycle and Age Group**

| **Cycle** | **Adult (18+)** | | **Youth (12-17)** | | **Parent (3-11)** | | **Total** | |
|---|---|---|---|---|---|---|---|---|
| | Pre | Post | Pre | Post | Pre | Post | Pre | Post |
| **1** | 23 | 15 | 12 | 7 | 13 | 7 | **48** | **29** |
| **2** | 19 | 11 | 7 | 7 | 3 | 2 | **29** | **20** |
| **3** | 26 | 13 | 3 | 3 | 5 | 4 | **34** | **20** |
| **4*** | 18 | 4 | 2 | 0 | 3 | 1 | **23** | **5** |
| **5** | 25 | 19 | 7 | 4 | 22 | 18 | **54** | **41** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Total** | **111** | **62** | **31** | **21** | **46** | **32** | **188** | **115** |

*Cycle 4 was postponed to cycle 5 due to the Covid-19 pandemic. Only 3 sessions were completed during Cycle 4.

The program's overall attrition rate was 38%. Cycle 4 had the highest attrition rate at 79%. Cycle 4 was canceled due to the Covid-19 pandemic after 3 sessions. Although participants were invited to cycle 5, only 5 participants returned. Primary reasons for participation drop-out were failing to attend the last session when the post-survey was facilitated. Cycle 5 had the lowest attrition rate at 24%. The primary reason for this success was the flexibility participants had to complete the survey electronically. In addition, this gave the study team the flexibility of providing more time for participants to complete the survey and increased follow-up.

Table 3 includes participant demographic data by age group. Most adult participants were between 40-44 and 60-64 years of age (n=34). Most participants identified as AIAN alone (n=41) and identified as female (n=38). The average youth age was about 14 years old and most identified as AIAN alone or in combination with another race (n=18). There were 3 youth participants who did not identify as AIAN but identified either one or both parents as AIAN. The average child age was 8 years old with the majority identifying as AIAN alone (n=23). Most children identified as female (n=25).

**Table 3. NADDAR Participant Demographics (n=115)**

| | **Adult (n=62)** | | **Youth (n=21)** | | **Parent/Child (n=32)** | |
|---|---|---|---|---|---|---|
| **Variable** | **n** | **%** | **n** | **%** | **n** | **%** |
| **Age** | | | (Range) | (Average) | (Range) | (Average) |
| | -- | -- | 12 - 17 | 13.87 | 3 - 11 | 8.21 |
| 18-29 | 8 | 12.90 | -- | -- | -- | -- |
| 30-39 | 17 | 27.42 | -- | -- | -- | -- |
| 40-44 | 10 | 16.13 | -- | -- | -- | -- |
| 45-49 | 5 | 8.06 | -- | -- | -- | -- |
| 60-64 | 17 | 27.42 | -- | -- | -- | -- |
| 65+ | 5 | 8.06 | -- | -- | -- | -- |
| **Race/Ethnicity** | | | | | | |
| AI/AN | 41 | 66.13 | 9 | 42.85 | 23 | 67.65 |
| Native Hawaiian | 1 | 1.61 | 0 | 0 | 0 | 0 |
| Latino | 3 | 4.84 | 1 | 4.78 | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Multi-Racial | 16 | 25.81 | 9 | 42.85 | 10 | 29.41 |
| Unknown | 1 | 1.61 | 2 | 9.52 | 1 | 2.94 |
| **Gender Identity** | | | | | | |
| Male | 18 | 29.03 | 13 | 61.90 | 8 | 23.53 |
| Female | 38 | 61.29 | 5 | 23.80 | 25 | 73.53 |
| Two Spirit | 3 | 4.84 | 1 | 4.76 | 0 | 0 |
| Multiple Genders | 0 | 0 | 2 | 9.52 | 0 | 0 |
| Unknown | 3 | 4.84 | 0 | 0 | 1 | 2.94 |

### C. Measures & Data Collection Procedures

*Focus Groups*

Four priority groups were included in both pre/post focus groups—1 AIAN adult, 1 AIAN youth, 1 Community Advisory Board, and 1 focus group for providers who serve AIAN community. The pre-intervention focus groups (n=4) were conducted during August and September 2018 to obtain feedback on the NADDAR curriculum and protocol to help ensure AI/AN participants maximize their benefits through the program. The post-intervention focus groups (n=4) were conducted after the final cycle of the NADDAR intervention in April 2021 to provide feedback about intended outcomes and recommendations to improve the program. Pre-intervention focus groups were conducted near downtown Los Angeles at the UAII. Pre focus group participants were consented as a group with study staff before the focus group began. Pre focus group participants were given a short demographic survey to complete before the conclusion of the focus group. All focus group participants were asked permission to record the session. All study staff identify as AIAN and are active members of the AIAN Los Angeles community. Study staff present included Dr Johnson as the facilitator, the program evaluator as note taker, and an additional staff member for logistical support.

Due to Covid-19, post focus groups were conducted virtually. Post focus group participants were consented by phone by study staff prior to the focus group. Focus groups were conducted via Zoom, and study staff instructed participants to find a private place to participate in the focus group if possible, to ensure privacy. With the permission of focus group participants, all focus groups (pre and post) were recorded and transcribed for documentation and analysis purposes. Focus group covered topics such as: mental health concerns in the community, how cultural-based interventions help AI/ANs, focus of evaluation, how to administer and collect evaluations, and how to help influence future policy decisions as it related to dissemination of NADDAR to the wider AI/AN community.

*Pre/Post Intervention Surveys*

Cycles 1-3 were conducted in-person. Cycle 4 was cancelled after the first three sessions due to the Covid-19 stay-at-home mandate. All participants who attended

cycles 1-4 of NADDAR were asked during the first session if they and/or their children were interested in participating in the evaluation. Community members who were interested were consented by a study staff member and provided a pen and paper packet with the pre-survey. For youth, 12-17 years of age, a consent form and assent form were explained to both the parent and child. For children under 11 years of age, a parent would complete the consent form and survey on behalf of their child. Participants returned the completed pre survey to a study staff member at the conclusion of the first or second session. During the last session of NADDAR, participants who completed a pre survey for the current cycle were given post surveys. Post surveys were administered in a paper format and turned in to a study staff member at the conclusion of the session. Participants were given a $25 gift card for completing the pre survey and another $25 gift card for completing the post survey.

*Virtual Component*

Cycle 5 was facilitated virtually to accommodate the Covid-19 stay-at-home mandate. Cycle 5 study participants were consented over the phone by a study staff member. UAII program staff and participants were in a private and confidential setting to complete the consent form. UAII study staff emailed each participant a Survey Monkey link to complete the survey along with their unique participant ID number after completing the consent form. The survey and unique participant ID number were emailed to parents for participants under 11 years old. Staff were available by phone and/or email to answer any questions that arise during the process and/or provide as-needed technological support. Participants were given until the conclusion of the second session to complete their pre-survey. One week before the last session of cycle 5, participants were emailed another link with their unique participant ID to complete the post survey. Follow up emails and calls were made within one week of the last session to remind participants to complete their surveys. Participants provided a $25 e-gift card for each survey they completed (pre and/or post).

*Quantitive Measures*

Local evaluation questions included the following instruments: Cultural and Racial Socialization Self-Efficacy Scale, Patient Health Questionnaire (PHQ-9), Timeline Follow Back (TLFB) Substance Use Assessment, Cultural Identity Scale, Historical Loss Scale, Historical Loss Associated Symptoms Scale, Sense of Community Index-2 (SCI-2), Generalized Anxiety Disorder 7-item (GAD-7) Scale, Herth Hope Index, Youth Cultural Connectedness Scale-Urban California, Cultural and Activity Assessment (post survey only).

- Patient Health Questionnaire (PHQ-9) (Kroenke et al. 2001): The PHQ-9 is an instrument for screening, diagnosing, monitoring, and measuring the severity of depression. The PHQ-9 is a self-report tool that incorporates DSM-IV depression diagnostic criteria with other leading major depressive symptoms and thoughts of suicide. Questions are answered through a 4-point Likert scale ranging from 0 (“not at all”) to 3 (“nearly every day”) for each question, with 0 being not depressive to 3 being the most depressed.
- Generalized Anxiety Disorder 7-item (GAD-7) Scale (Spitzer et al. 2006): The GAD-7 is a seven-item survey that measures anxiety. Scores for each question

range from 0 (“not at all sure”) to 3 (“nearly every day”) with higher scores for more anxiety. Scores on the GAD-7 range from 0 to 21.

- Timeline Follow Back (TLFB) Substance Use Assessment (Sobell et al. 1992)
- Historical Loss Scale and Historical Loss Associated Symptoms Scale (Whitbeck et al. 2004): An instrument that is a standardized measure developed to examine the frequency AIAN individuals reflect on historical loss.
- Herth Hope Index (Herth 1992): The Herth Hope Index is a strength-based instrument that measures hope using a 4-point Likert scale ranging from 1(“strongly disagree”) to 4(“strongly agree”). Two items are reverse-coded.
- Cultural and Racial Socialization Self-Efficacy Scale (Berbery et al. 2011): This 18-item instrument incorporates the Racial Socialization Self-Efficacy Scale, Cultural Socialization Self-Efficacy Scale, Parental Involvement in Socialization Efficacy Scale, and Social Justice Self-Efficacy Scale. Each question uses a 7-point Likert scale ranging from 0 (“not at all confident”), 3 (“moderately confident”), 6 (“highly confident”).
- The Multigroup Ethnic Identity Measure (MEIM) (Phinney 1992)
- Sense of Community Index-2 (SCI-2) (Chavis et al. 2008): 24 item scale that covers all the attributes of a sense of community
- American Indian/Alaska Native Cultural Identity Scale (Snowshoe 2015): This 11-item survey measures the importance to respondents of areas associated with AI/AN cultural identity, such as attending traditional activities/events, maintaining AI/AN cultural identity and traditional ways, and participating in traditional ceremonies.
- Cultural and Activity Assessment (post survey only)

Adult, youth, and child surveys are included in Appendix.

**Focus Group Measures**

Study staff developed the focus group questions and guide based on the evaluation questions and aim of the project. The Community Advisory Board (CAB) provided feedback on each iteration of the focus group questions to address community concerns and the cultural appropriateness of questions. The CAB is comprised on an all AIAN committee who are leaders in the Los Angeles AIAN community. The CAB represents AIAN professionals from academia, health providers, local AIAN community-based organizations, and active community members.

| **Adult/Youth Pre-Focus Group Questions** | |
|---|---|
| **1** | What are your general observations with regard to the proposed NADDAR curriculum for American Indian/Alaska Native (AI/AN) families? |
| **2** | What interests you the most about the NADDAR program? |
| **3** | How do you think NADDAR can help AI/AN families? |
| **4** | What parts of NADDAR do you think are not as relevant for AI/AN families with mental health issues? |
| **5** | Are there any changes you would recommend to the NADDAR treatment protocol? |
| **6** | With regard to the cultural activities, are there any specific activities you would like to participate in more? |

| | |
|---|---|
| **7** | As an AI/AN family member living in the Los Angeles area, do you think the NADDAR approach will strengthen your tie to your culture, tribe, and community? How would you recommend NADDAR be approached for the urban population of Los Angeles? |
| **8** | Review Evaluation Instruments |

| **Provider/CAB Pre-Focus Group Questions** | |
|---|---|
| **1** | We will review the NADDAR program handout and NADDAR curriculum. What are your general observations with regard to the proposed NADDAR protocol for American Indians/Alaska Native (AI/AN) families? |
| **2** | What aspects associated with NADDAR do you think are most beneficial for AI/AN families? |
| **3** | What aspects associated with NADDAR do you think are not as relevant for AI/AN families? |
| **4** | Are there any changes you would recommend to the NADDAR program? |
| **5** | Are there any comments or suggestions you have with regard to the use of the curriculum proposed NADDAR treatment protocol? |
| **6** | With regard to cultural activities, are there any specific cultural activities you would recommend be implemented? |
| **7** | Do you have any suggestions with regard to ensuring that AI/AN from a variety of AI/AN tribes and cultures be able to use NADDAR to accommodate their traditions (tribe)? |
| **8** | Review Evaluation Instruments |

| **Post-Focus Group Questions (All Groups)** | |
|---|---|
| **1** | What are your general impressions of the preliminary NADDAR program? |
| **2** | What did you like or enjoy most about the NADDAR program? |
| **3** | What parts of the NADDAR program do you think were not as culturally relevant for American Indians/Alaska Natives? |
| **4** | Are there any changes you would recommend to the NADDAR program? |
| **5** | With regard to the cultural activities of NADDAR (prompts: e.g., dancing, regalia making), do you believe they were taught in a culturally appropriate manner? Do you have any further recommendations about how we should teach them? |
| **6** | Are there additional cultural activities or traditions you would like to see incorporated in the NADDAR program? |
| **7** | As an American Indian/Alaska Native living in the Los Angeles area, did you think the NADDAR program helped improve severity of mental health symptoms and substance use? Were there any parts of NADDAR which did not cater to your needs? |
| **8** | Are there any further suggestions you would like to express about the role of males and females in the cultural activities of the NADDAR program? |
| **9** | For those that participated in the virtual NADDAR program August 2020-October 2020, are there any suggestions or feedback? Would you like to see more virtual sessions of NADDAR? |

| | |
|---|---|
| **10** | Are there any additional suggestions or feedback you would like to provide us which may assist in the final development of the NADDAR program? |
| **11** | Are there any suggestions for dissemination of results? |
| **12** | How can we help influence future policy decisions to promote dissemination of NADDAR to the wider American Indian/Alaska Native community? |

### D. Fidelity and Flexibility

**Dosage**

**Table 4 NADDAR Dosage by Cycle (n=203)**

| | Cycle 1 | Cycle 2 | Cycle 3 | Cycle 4 | Cycle 5 |
|---|---|---|---|---|---|
| **# Of Sessions Attended** | **n (%)** | **n (%)** | **n (%)** | **n (%)** | **n (%)** |
| **1** | 4 (7.69) | 4 (13.33) | 22 (53.66) | 15 (57.69) | 7 (12.96) |
| **2** | 11 (21.15) | 5 (16.67) | 4 (9.76) | 7 (26.92) | 1 (1.85) |
| **3** | 5 (9.62) | 3 (10.00) | 1 (2.44) | 0 (0.00) | 9 (16.67) |
| **4** | 3 (5.77) | 0 (0.00) | 4 (9.76) | 0 (0.00) | 2 (3.70) |
| **5** | 5 (9.62) | 3 (10.00) | 4 (9.76) | 0 (0.00) | 12 (22.22) |
| **6** | 8 (15.38) | 10 (33.33) | 1 (2.44) | 0 (0.00) | 1 (1.85) |
| **7** | 5 (9.62) | 3 (10.00) | 4 (9.76) | 0 (0.00) | 0 (0.00) |
| **8** | 11 (21.15) | 2 (6.67) | 1 (2.44) | 4 (15.38) | 22 (40.74) |

**Table 5 NADDAR Dosage by Group (n=203)**

| | Adult (n=122) | Youth (n=32) | Child (n=50) |
|---|---|---|---|
| **# Of Sessions Attended** | **n (%)** | **n (%)** | **n (%)** |
| **1** | 40 (32.79) | 4 (12.50) | 9 (18.00) |
| **2** | 19 (23.17) | 2 (6.25) | 7 (14.00) |
| **3** | 7 (11.11) | 6 (18.75) | 5 (10.00) |
| **4** | 6 (10.71) | 1 (3.13) | 2 (4.00) |
| **5** | 15 (12.30) | 3 (9.38) | 6 (12.00) |
| **6** | 8 (6.56) | 10 (31.25) | 2 (4.00) |
| **7** | 6 (4.92) | 0 (0.00) | 2 (4.00) |
| **8** | 21 (17.21) | 6 (18.75) | 17 (34.00) |

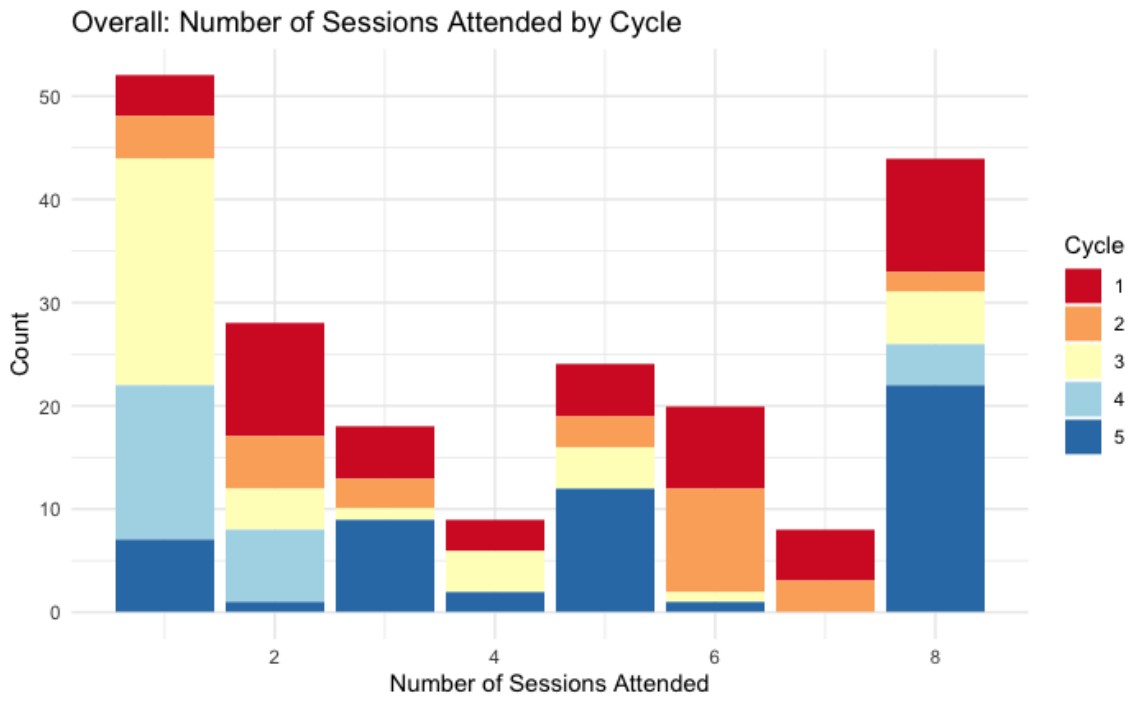


*Figure 1 Number of Sessions Attended by Cycle*

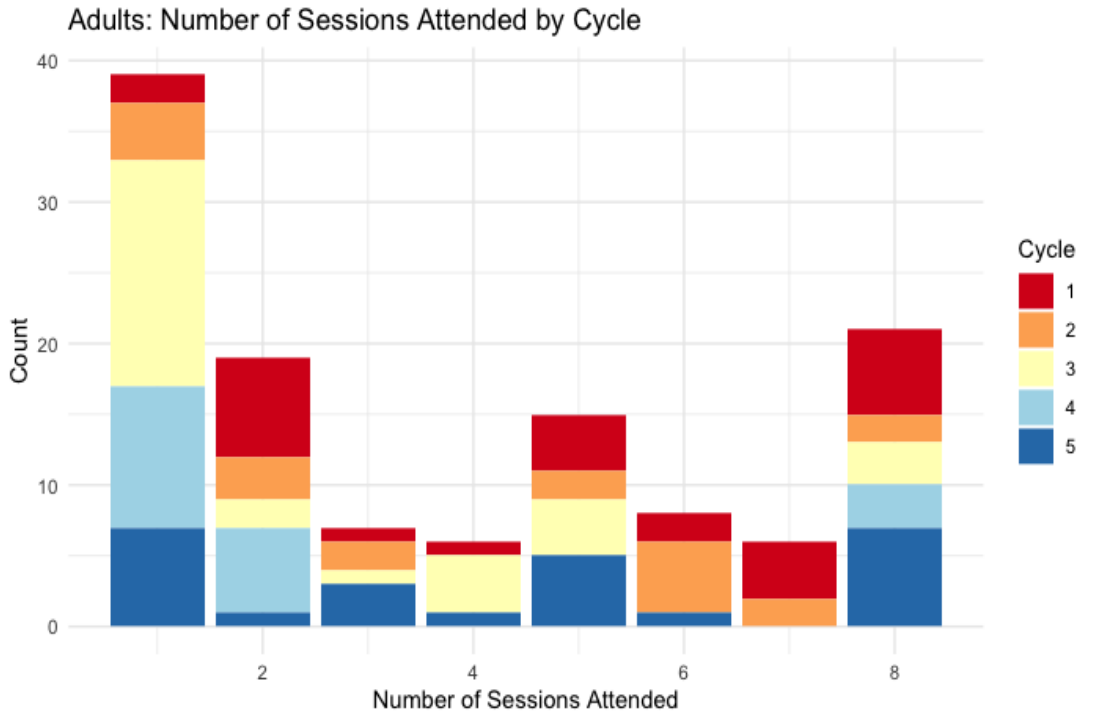


*Figure 2 Number of Sessions Attended by Cycle among Adult Participants*

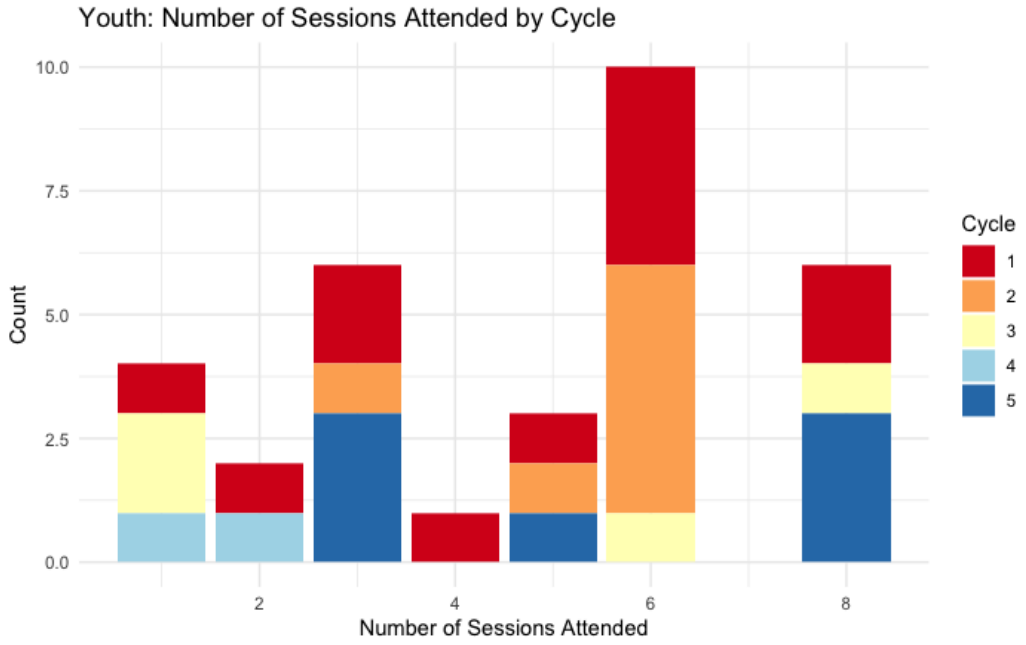


*Figure 3 Number of Sessions Attended by Cycle among Youth Participants*

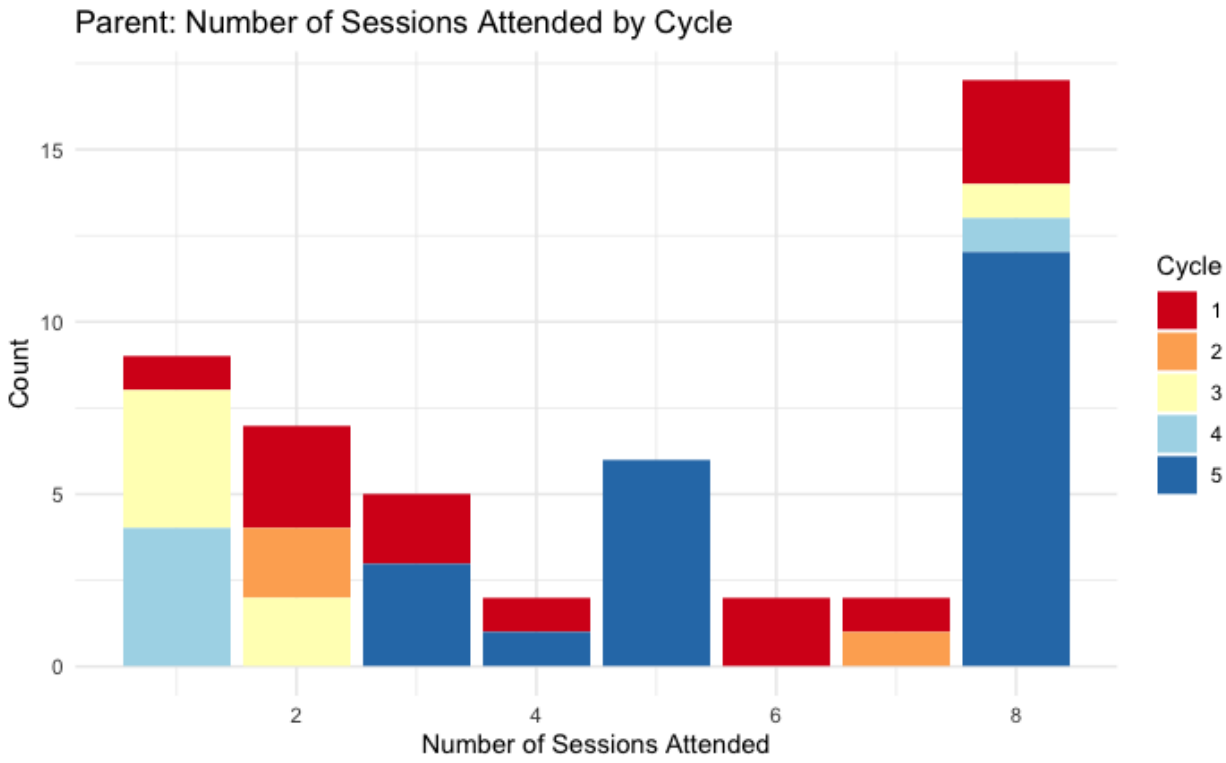


*Figure 4 Number of Sessions Attended by Cycle among Child Participants*

## E. Data Analyses Plan Implemented

*Focus Groups*

Each focus group was audio recorded and transcribed. The study team along Drs. Johnson and Dickerson reviewed the transcripts for completeness and accuracy. An initial coding structure was developed by the study team based on the focus group questions and domains of interest. The coding structure was defined a priori. Each focus group transcript was read and coded by 2 study staff members to identify adaptations and revisions necessary to capture the prominent themes. After the codebook was finalized, each focus group transcript was read and coded by 3 staff members. Coding discrepancies were resolved during weekly research team consensus meetings. Summaries of each focus group were produced by code and quotations demonstrating themes. Inclusion criteria for key themes included high frequency (i.e., mentioned several times by participants and/or across focus groups) or high significance (i.e., low frequency, but deemed impactful by the research team and CAB). Themes were discussed and determined among study staff and PI Dr. Johnson and lead evaluator Dr. Dickerson through an iterative process to ensure themes were discussed in depth and understood in context.

*Quantitive Analysis*

All participants who completed both the pre and post surveys were included in the analysis. Pre/post means were analyzed using the dependent t-test for scales with continuous variables and the McNemar's test for categorical variables. Correlations were included to demonstrate a simple relationship between pre/post outcomes. Findings with $p<0.05$ were considered significant. Table 6 shows the analysis method for each aim used for the results. Note the nature of some scales used cover more than 1 outcome.

**Table 6 Analysis Methods for Evaluation Outcomes**

| Outcome | Scale (Dependent Variable) | Analysis Method |
|---|---|---|
| Increased connection to the AIAN culture and traditions | AIAN Cultural Identity Scale; Sense of Community Index-2 | Dependent T-Test; Correlation |
| Strengthened cultural identity | Multigroup Ethnic Identity Measure; AIAN Cultural Identity Scale | Dependent T-Test; Correlation |
| Increased spirituality | AIAN Cultural Identity Scale | Dependent T-Test; Correlation |
| Decreased rates of mental health disorders | PHQ-9; GAD-7 | Dependent T-Test; Correlation |
| Decreased substance use | Timeline Follow Back (TLFB) Substance Use Assessment | McNemar's Test; Correlation |
| Improved coping skills | Herth Hope Index; Cultural and Racial Socialization Self-Efficacy Scale | Dependent T-Test; Correlation |
| Improved overall health and wellness | PHQ-9; GAD-7; Herth Hope Index | Dependent T-Test; Correlation |

# VII. Results

## A. Quantitative Findings

Key findings from this evaluation were strengthened cultural identity after completing NADDAR among adults confirmed by two scales—Multigroup Ethnic Identity Measure (p<.0001) and AIAN Cultural Identity Scale (<0.01) (Table 7). Unexpectedly, increase levels of anxiety were observed after completing NADDAR (<.0001). This may be due to feelings of loss of social support when NADDAR is not in session. Although there were no significant findings, youth overall tended to have increased cultural identity, sense of community, and decreased levels of depression and anxiety (Table 8). Youth also had zero cigarette use, alcohol use (over 5 drinks), and prescription drug use at the conclusion of NADDAR. There were no significant findings among children (Table 9). However, all measures had observed improved outcomes including less feelings of historical loss, historical loss symptoms, increased hope, and increased sense of community.

**Table 7 Effects of NADDAR at End of Treatment for Adults**

| | Adults | | | |
|---|---|---|---|---|
| **Outcome** | **Pre-Mean (SD)** | **Post Mean (SD)** | **P-value (T-test)** | **Correlation (p-value)** |
| PHQ-9 | 4.56 (4.63) | 3.68 (4.06) | 0.30 | 0.48 (<.001) |
| GAD-7 | 1.34 (2.81) | 3.3 (3.56) | <.0001* | 0.53 (<.0001) |
| Historical Loss** | 41.35 (16.69) | 44.02 (17.26) | 0.48 | 0.47 (<.0001) |
| Hist. Loss Symptoms | 32.77 (12.82) | 30.89 (11.45) | 0.3 | 0.5 (<.0001) |
| Herth Hope | 36.10 (6.04) | 35.87 (7.40) | 0.91 | 0.46 (<.0001) |
| Cultural & Racial Socialization Self-Efficacy Scale | 84.56 (27.74) | 83.24 (25.96) | 0.53 | 0.38 (<.01) |
| Multigroup Ethnic Identity Measure | 2.18 (0.82) | 3.36 (0.817) | <.0001* | 0.42 (<.0001) |
| Sense of Community Index-2 (SCI-2) | 72.74 (16.65) | 76.90 (15.85) | 0.026* | 0.64 (<.0001) |
| AIAN Cultural Identity Scale (Part 1) | 7.94 (2.59) | 8.69 (2.33) | 0.0017* | 0.74 (<.0001) |
| AIAN Cultural Identity Scale (Part 2) | 50.29 (14.39) | 51.98 (12.54) | 0.37 | 0.55 (<.0001) |
| Cigarette Use | 0.42 (1.26) | 0.49 (1.45) | 0.62 | 0.72 (<.0001) |
| Alcohol Use | 0.93 (1.42) | 0.87 (1.33) | 0.92 | 0.58 (<.0001) |
| Alcohol Use (>5 drinks) | 0.27 (0.78) | 0.23 (0.64) | 0.84 | 0.53 (<.0001) |

| | | | | |
|---|---|---|---|---|
| Marijuana | 0.45 (1.49) | 0.51 (1.61) | 0.1 | 0.98 (<.0001) |
| Prescription Medication | 0.67 (0.41) | 0.049 (0.38) | 0.82 | -0.02 (0.86) |

*Indicates significant value (p<0.05)

**Increase value means less frequently thinking of historical loss

**Table 8 Effects of NADDAR at End of Treatment for Youth**

| | Youth | | | |
|---|---|---|---|---|
| **Outcome** | **Pre-Mean (SD)** | **Post Mean (SD)** | **P-value (T-test)** | **Correlation (p-value)** |
| PHQ-9 | 3.62 (3.28) | 2.57 (3.71) | 0.22 | 0.41 (0.06) |
| GAD-7 | 4.21 (9.08) | 3.76 (8.35) | 0.21 | 0.89 (<.0001) |
| Historical Loss** | 34.21 (13.81) | 41.25 (14.55) | 0.07 | 0.31 (0.25) |
| Hist. Loss Symptoms | 26.40 (12.33) | 24.00 (10.14) | 0.25 | 0.78 (<.0001) |
| Herth Hope | 35.65 (5.32) | 36.19 (4.69) | 0.86 | 0.2 (0.38) |
| Multigroup Ethnic Identity Measure | 9.60 (6.60) | 10.28 (7.71) | 0.69 | 0.60 (<.001) |
| Sense of Community Index-2 (SCI-2) | 65.74 (15.91) | 70.86 (15.27) | 0.49 | 0.15 (0.52) |
| AIAN Cultural Identity Scale (Part 1) | 6.79 (1.99) | 7.52 (2.87) | 0.36 | 0.36 (0.13) |
| AIAN Cultural Identity Scale (Part 2) | 47.9 (16.47) | 47.29 (14.35) | 0.58 | 0.52 (0.01) |
| Cigarette Use | 0.05 (0.21) | 0 (0.00) | 0.33 | -- |
| Alcohol Use | 0.28 (0.78) | 0.09 (3.00) | 0.3 | 0.09 (0.69) |
| Alcohol Use (>5 drinks) | 0.48 (0.22) | 0 (0.00) | 0.33 | -- |
| Marijuana | 0.47 (0.22) | 0.33 (0.86) | 0.11 | 0.45 (0.04) |
| Prescription Medication | 0.38 (0.80) | 0 (0.00) | 0.04 | -- |

**Increase value means less frequently thinking of historical loss

**Table 9 Effects of NADDAR at End of Treatment for Children**

| | Child | | | |
|---|---|---|---|---|
| **Outcome** | **Pre-Mean (SD)** | **Post Mean (SD)** | **P-value (T-test)** | **Correlation (p-value)** |
| Historical Loss** | 54.16 (14.88) | 56.10 (14.68) | 0.93 | 0.86 (<.0001) |
| Hist. Loss Symptoms | 27.34 (12.79) | 29.25 (15.90) | 0.74 | 0.54 (<.01) |
| Herth Hope | 75.70 (25.43) | 79.84 (23.01) | 0.3 | 0.54 (<.01) |
| Sense of Community Index-2 (SCI-2) | 70.96 (21.06) | 76.22 (17.90) | 0.36 | 0.81 (<.0001) |

**Increase value means less frequently thinking of historical loss

Quantitative results reveal significant increase in cultural identity among AI/AN adults ($p<0.001$). However, AI/AN adults experience significantly more anxiety upon completion of NADDAR ($p<0.001$). Among AI/AN youth, less prescription drug use was observed upon completion of their participation in NADDAR ($p=0.04$). No additional significant findings were found with regard to depression among either adults or youth. Also, no significant findings were noted with regard to Herth Hope, Multigroup Ethnic Identity Measure, Cultural and Racial Socialization, or cigarette, marijuana, or alcohol use among either adults or youth. Among children, their parents did not demonstrate any significant changes with regard to their cultural and racial socialization.

Unexpectedly, adults reported significantly more anxiety upon their completion in the NADDAR program. Higher anxiety levels experienced by AI/AN adults are unexpected. A potential reason for this may be due to experiences associated with the anxiety associated with COVID-19. Our Community Advisory Board believes that a potential reason for this finding may be…Future enhancements to address anxiety may needed to help decrease anxiety-related symptoms among adults.

Only a decrease in prescription drug use among youth were observed as being statistically significant ($p=0.04$) as it relates to substance use. However, our sample among adults were small (60 individuals) and approximately 20 youth. Studies conducted among large samples are needed to analyze and determine the potential benefits of NADDAR.

Promising findings were found based on our correlation findings among adults, youth, and children. Among adults, promising findings about sense of community, cultural identity, cigarette use, and marijuana use. Among youth, promising findings were found regarding anxiety symptoms and historical loss, and enhancement of ethnic identity Among children, promising findings were found with regard to sense of historical loss and sense of community. Future studies conducted among larger samples are needed to better understand the potential benefits of NADDAR among each of these groups.

### B. Qualitative Data Findings

All focus groups (pre and post) noted the role of culturally based interventions in contributing to positive mental health outcomes and resilience. Input from community members emphasized the following three overarching findings regarding participation in cultural-based programs: (1) such programs strengthen behavioral health, (2) these programs strengthen identity, and (3) engagement in such programs strengthen relational connections.

**Participating in Cultural-Based Interventions Strengthens Behavioral Health**

Most pre/post focus group participants reported that engaging in cultural-based programs help AI/ANs with addressing behavioral health challenges and maintaining positive behavioral health. AI/AN providers, facilitators, and Community Advisory Board (CAB) members discussed the long-term impact culturally tailored programs have on mental health and substance use. It is also important to note that UAII is uniquely positioned to provide an internal referral system between the behavioral health department and cultural interventions. This infrastructure ensures that community members feel supported between programs, streamlines communication, and enables providers to stay engaged through an integrated support structure.

Through the internal referral system, providers noted the sustained progress visible through engagement in cultural interventions such as NADDAR. One provider stated in a pre-focus group: *"I feel that clients who participate in cultural services do better with their mental health, substance use and overall health."* Another provider discussed the importance of this intervention's intergenerational approach and noted how this has helped shape a healthy example of parenting for AI/AN parents. *"[NADDAR] gave them somewhere to be [where] their families came together...What I've often seen is some families didn't know how to connect. They don't know how to engage and how to teach their children. And by looking at the instructors and the staff that's there, this is what you do … A lot of times families would come in very high anxiety from trying...to get there in time … get their food and get all settled and make sure their children were dressed. It's kind of fascinating how we don't preach or talk about the structure, so to speak, of NADDAR, but families adapt to it, and they learn. And because of that, it brings calmness to their house."* Multiple providers noted how this program incorporated traditional teachings and provided space for creating structure through a culturally centered approach which helps foster mental wellness beyond NADDAR.

Adult participants agreed sharing space with others from similar cultural backgrounds was helpful for their mental health. Many noted how this intertribal space was particularly impactful for AI/AN youth as they are often the only Native person in their classes. Participants emphasized that this setting provided a safe environment for children and adolescents who are at a critical stage of personal and identity development. Through this space, the youth can identify other community members/elders for social and emotional support outside of their household or extended family. Both youth and adults discussed how this program contributed to a sense of belonging and affirmed that cultural teachings from the NADDAR program help guide participants through Indigenous cultural values. One adult focus group participant shared, *"My kids have had a... mentor with the group that they participate with the drum...In the past they've also been invited to come and assist at the powwows. They feel a part of something. So yeah, I believe it does help them mentally. They also have, besides me as a parent to talk to, they have other people to guide them in the right direction."*

**Learning about Culture Strengthens Identity**

Participants discussed the importance of NADDAR's educational component. This component grounded each gathering in learning about shared histories, experiences, and resources to empower participants in understanding culture and

identity. Urban AI/ANs often do not have frequent contact or the ability to visit their tribe(s) and/or tribal lands. Programs like NADDAR provide an opportunity for AI/AN community members to learn more about their AI/AN culture and identity in Los Angeles. One adult pre-focus group participant noted, *"I do not know how to teach my kids how to dance or drum or other cultural activities, so it is important for us to have these workshops in urban areas--so our kids can learn about their culture. That will make them feel proud of who they are and help with their mental health."* The educational component provided space for communal input, shared stories and access to cultural teachings that positively impact participants' sense of identity.

NADDAR provides urban AI/ANs the opportunity to engage with other community members who have similar backgrounds and shared history. A youth pre-focus group participant stated, "*We are able to learn about our traditions and culture and apply it in personal life."* Adults shared this sentiment as one post-focus group participant stated: *"And the reason that I think it's important is because sometimes they don't have anywhere else to go to learn about themselves and to see others who look like them or to hear something that they've heard beforehand say, Oh, yeah, I'm part of that, that's part of me, so that they don't think that I'm the only one, no one else is like me."* This connection to culture and strengthening identity clearly must be offered consistently within the community as many participants noted how few of these opportunities exist within the area. Incorporating such teachings as a fundamental aspect of multiple programs within the community would further support positive mental health outcomes.

**Participating in Culture-Based Interventions Strengthens Connections**

Participants discussed the importance of connecting with other community members in a complex urban environment like Los Angeles. Historically, AI/AN have been strategically displaced in urban settings. This has resulted in AI/ANs residing in various parts of urban settings with no specific racial enclaves to find community as may be seen for other racial/ethnic groups. Learning about this shared culture in this setting is particularly important because inter-tribal cultural activities like powwows can present opportunities outside of the NADDAR intervention for Urban AIAN to connect with other community members and practice their cultural traditions thereby strengthening their social support and mental wellness. Participants noted that they looked forward to sharing the cultural knowledge they received at upcoming powwows and gatherings. Participants further noted how this knowledge contributed to their sense of connection and belonging at other community gatherings. A community advisory board member from the pre-focus group stated, *"[NADDAR] will help improve our connection. And [it] helps with mental, social, and cultural connections."*

Both adult and youth participants reported learning how to drum, dance, and make regalia. Participants also reported how the educational topics helped enhance their connection to their culture, tribe, and local community. A youth participant stated, *"Urban Natives do not have that sense of connection to our culture—these types of programs help us do that."* An adult participant stated, *"We are so isolated in LA county that these workshops help [us] stay connected."* Youth, adults, facilitators, clinicians, and Community Advisory Board members each recognized that the traditional teachings, educational components, and relational approach to NADDAR clearly contributed to protective factors and had a beneficial impact on overall mental health outcomes.

# VIII. Discussion and Conclusion

Work conducted on NADDAR illustrates how an urban AI/AN community in Los Angeles County can aid in the development and analysis of a promising new community based mental health intervention designed for urban AI/AN families. Utilizing research activities directed under the CRDP-II program, our research team was able to gather very valuable qualitative and quantitative data. Pre-intervention qualitative data explain why there is a need for culturally centered interventions that utilize traditional practices to help decrease the burden of mental health issues for urban AI/AN families. Quantitative data generated provide an opportunity to understand how a culturally centered intervention can benefit urban AI/AN families.

In our pre intervention focus groups conducted among urban AI/AN adults, youth, and providers, three main themes emerged: (1) Participating in Culturally Based Interventions Strengthens Behavioral Health, (2) Learning about Culture Strengthens Identity, and (3) Participating in Culture Based Intervention Strengthens Connection. Results from our focus groups resulted in a peer-reviewed publication in the Native American Issues in Behavioral Health special edition issue of The Behavior Therapist journal. We also completed five rounds of the NADDAR curriculum among 189 participants including 111 adults, 78 youth/children. Also, we collected 189 pre intervention baseline assessments and 116 post intervention assessments which provides us with a rare opportunity to learn more about urban AI/AN families and how NADDAR can help to address long-standing health disparities that have affected urban AI/AN people. Preliminary analyses of our local evaluation questionnaires (pre and post intervention) reveal that urban AI/AN families enjoyed participating in NADDAR. High retention rates were found in that 103 participants completed at least 50% of sessions and 44 completed all 8 sessions.

Findings from this study demonstrate the potential for NADDAR to help urban AI/AN people connect more with their community, to engage in AI/AN traditional practices that emphasize social connectedness and healthy behaviors and help to instill a high sense of cultural pride and resilience that will help to create and sustain healthy urban AI/AN families and communities. Research activities completed in this project demonstrate the benefits of cultural integration in programming and highlight the need for implementation of NADDAR throughout Los Angeles County and other urban AI/AN communities throughout California. Also, due to our partnership with the urban AI/AN community of Los Angeles, and very high positive response of NADDAR within the community, we are also planning on strategies for further implementation and studies that can help inform the field regarding the potential benefits of culturally centered programming for urban AI/AN families.

Significant improvements regarding cultural identity involvement among adults and decrease use of prescription drugs among youth were the only areas of improvement noted among adults and youth in this study. Also, significantly higher symptoms of anxiety were found among adults upon completion of their participation in NADDAR.

Higher anxiety levels experienced by AI/AN adults are unexpected. A potential reason for this may be due to experiences associated with the anxiety associated with

COVID-19. Our Community Advisory Board believes that a potential reason for this finding may be xxx. Future enhancements to address anxiety may needed to help decrease anxiety-related symptoms among adults. Also, exploring how COVID-19 may have affected urban AI/AN families may need to be further explored in order to understand why anxiety-related symptoms increased among adults in this study.

Only a decrease in prescription use among youth were observed as being statistically significant as it relates to substance use. However, our sample among adults were small (60 individuals) and approximately 20 among youth. Studies conducted among large samples are needed in order to analyze and determine the potential benefits of NADDAR.

Findings from this study are subject due to limitations. Our study was conducted in one large urban population setting. Thus, we are unable to generalize these results to all urban areas in the United States. Despite these limitations, this study provides rare information on the development of a family-based intervention for urban AI/AN families in a large metropolitan area in the U.S.

# IX. References


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# X. Appendices

1) Appendix 1A: Adult Pre Survey
2) Appendix 1B: Adult Post Survey
3) Appendix 2A: Youth Pre Survey
4) Appendix 2B: Youth Post Survey
5) Appendix 3A: Child Pre Survey
6) Appendix 3B:Child Post Survey