THE CULTURE IS PREVENTION PROJECT: MEASURING CULTURE AS A SOCIAL DETERMINANT OF MENTAL HEALTH FOR NATIVE/INDIGENOUS PEOPLES

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Abstract: This paper reports Phase 4 of the Culture is Prevention Project where we validated the Cultural Connectedness Scale – California (CCS-CA) with a sample of 344 Indigenous adults in the San Francisco Bay Area, California. In Phase 3 of this project, the CCS-CA was modified from the original Canadian Cultural Connectedness Scale (CCS) developed by Dr. Angela Snowshoe and colleagues to be a better fit for the more multi-tribal communities in urban California. Both the CCS-CA and CCS consist of 29 items that measure culture on 3 sub-scales: identity, traditions, and spirituality. The project demonstrated a positive link between cultural connectedness and mental health/well-being using the Herth Hope Index. We report results similar to the original CCS study by Snowshoe et al., where we found the CCS-CA to be a valid and reliable strength-based instrument and to support the conclusion that culture is a social determinant of mental health/well-being for Indigenous/Native peoples.

BACKGROUND

What tore the Indian world apart and how did it impact health?

Prior to colonization, Indigenous/Native[1] peoples across the North American continent maintained health and wellness for thousands of years through culturally-based practices. According to Indigenous worldviews, the environment, mind, body, and emotional health are inextricably linked to collective human behavior, practices, wholeness, and, hence, wellness (Brave Heart, Chase, Elkins, & Altschul, 2011; Walters, Beltran, Huh, & Evans-Campbell, 2011).

[1] In this paper we use 'Native/Indigenous' or 'American Indian/Alaska Native [AI/AN]' interchangeably to represent the original peoples of North America prior to colonization. The term 'cultural connectedness' refers to the degree to which an AI/AN (Indigenous person) is integrated within his or her Native/Indigenous culture.

For example, health in Indigenous communities was the result of living in the community; participating in traditional ceremonial practices, which involved foods, medicines, songs, dances; and revering the land and all her inhabitants as relatives (Menzies & Lavallee, 2014; Tucker, Wingate, & O'Keefe, 2016). For generations, Indigenous people have practiced what we now call "Population Health" where traditional practices promoted health for community members by increasing collective strengths and decreasing inequities. This approach is very different compared to the Western individualistic approach (e.g., deficit-based or disease-based) to promoting health by increasing strengths at multiple levels (King et al., 2019).

Colonization had a devastating impact on eroding Native culture through government policies that broke the Indian world apart (Stamm & Stamm, 1999; Brave Heart & DeBruyn, 1998). Decades of strategic colonization methods resulted in the subsequent down-stream impact on ill-health across Native/Indigenous communities. Examples where colonization negatively impacted these determinants of health include: 1) ethnic cleansing as operationalized by the Indian Removal Act of 1830; 2) removing children from homes for involuntary attendance at Boarding Schools where children were brutally punished for speaking their language or "behaving Native" (1879-1980's); and 3) government policies making it illegal to practice Native culture (Stamm & Stamm, 1999; Irwin, 1997). The long-term health and social consequences of colonization include: a) multi-generational trauma; b) loss of land and culture; c) unresolved grief; d) high prevalence rates for chronic disease, suicide, and substance abuse; and e) poor social outcomes such as homelessness, unemployment, family violence, and incarceration (Caster et al., 2006; Chartier & Caetano, 2010; Ehlers, Gizer, Gilder, & Yehuda, 2013; Kolahdooz, Nader, Kyoung, & Sharma, 2015; Kenny & Singh, 2016; Mitchell, 2012; Snowshoe, Crooks, Tremblay, Craig, & Hinson, 2015; Snowshoe, Crooks, Tremblay, & Hinson, 2017).

What will help bring the Native world back together and help to restore health?

Government and Western medical model responses to Indigenous/Native health and social disparities have not proven to be very effective and, in many circumstances, have been harmful (Tucker et al., 2015; Walters & Beltran et al., 2011). Factors attributed to this outcome include the historical disrespect and subsequent lack of understanding by the dominant culture about the important cultural determinants of health for Indigenous/Native peoples, such as the strong and interdependent relationships between health, cultural traditions, spirituality, and the connection to traditional land, diets, and community. This dismissal of Native knowledge has contributed to the

ineffectiveness of many Western modalities in reducing health and social disparities for Indigenous communities (Tucker et al., 2016; Walters & Mohammed et al., 2011; McCormick, 1995). Given this, restoration and reconnection to the strengthening of culture or Indigenous/Native identity, is an important part of the solution (Chandler & Lalonde, 1998; Chandler, 2014; Coser, Sittner, Walls, & Handeland, 2018; Gone, 2009; Snowshoe et al., 2017; Snowshoe et al., 2015). However, a paradigm shift in the dominant culture is also needed. This is best described by King:

> Government, academia, and Western medicine should be cognizant that Indigenous culture historically manufactured good health. Therefore, government, academia, and Western medicine should try to better understand and promote Indigenous epistemology and community-defined evidenced practices and not undermine it. (King et al., 2019, p. 120)

What is the *Culture is Prevention Project* and why was it initiated?

The *Culture is Prevention Project* is a research/instrument development project (see Table 1) that derived from a Substance Abuse and Mental Health Services Administration (SAMHSA) funded project to address youth alcohol and prescription drug abuse. The project was initiated by the "Community Advisory Workgroup," comprised of staff and community members from six Urban Indian Health Organizations. The *Culture is Prevention Project* was designed as a 6-phase community-based participatory research (CBPR) project to address issues identified by the Community Advisory Workgroup, with a focus on: i) the lack of culturally informed methods to evaluate, from an Indigenous/Native perspective, the positive health outcomes of culture-based programs to improve health and well-being; and ii) interest in providing an approach that recognized the relationship between Indigenous/Native culture and health.

Each phase in the project was guided by the Community Advisory Workgroup. A main goal was to develop and implement a more culturally informed approach to demonstrating that the programs and interventions being delivered were achieving their objectives, which included both restoring/reconnecting to culture and improved strengths, resiliency, mental health, and well-being. Methods and results from Phases 1-3 are presented in a previous paper (King et al., 2019).

Table 1
Culture is Prevention Project

Phase 1	Consensus Generating Workshop
Phase 2	Literature Search & Knowledge Synthesis
Phase 3	Adapting the Snowshoe Cultural Connectedness Scale (CCS) for in Multi-Tribal Communities in California
Phase 4	Pilot Testing/Validation of the Cultural Connectedness Scale – California (CCS-CA) and Evaluation of the Relationship between Culture and Mental Health
Phase 5	Exploring the Predictive Properties of the CCS-CA
Phase 6	Cultural Connectivity, Integration, Health (Physical/Mental), & Health Services Utilization

What are the Cultural Connectedness Scale and the Cultural Connectedness Scale-California (CCS-CA)?

The Cultural Connectedness Scale-California (CCS-CA) is presented in Appendix A, ordered by the three subscales. It was adapted from the original Cultural Connectedness Scale (CCS) developed for First Nations/Indigenous youth in Canada by Dr. Angela Snowshoe, an Indigenous professor/scholar (Snowshoe et al., 2015). Snowshoe and colleagues developed the CCS to measure the degree of cultural connectedness with the objective of also demonstrating the link to mental health/well-being outcomes. This was based in the historical knowledge that "culture is prevention" and that a culturally specific protective factor within the epistemology of First Nations/Indigenous culture could be identified, measured, and verified (Walters & Anderson, 2013).

The CCS and the adapted CCS-CA are 29-item instruments with three sub-scales (Identity, Traditions, & Spirituality). We identified the CCS in Phase 2 (literature search) and adapted it in Phase 3 of the *Culture is Prevention Project* (see King et al., 2019).

Snowshoe and colleagues validated the CCS in a sample (N = 319) of First Nations/Indigenous youth (Snowshoe et al., 2015; King et al., 2019). The study also reported that culture (measured by the CCS) was positively and significantly associated with measures of mental health/well-being (Zimmerman, Ramirez-Valles, Washienko, Walter, & Dyer, 1996). Strengths associated with the original CCS were that: 1) it was developed by Indigenous persons for Indigenous persons using what Snowshoe describes as Indigenous Quantitative methods (Walters & Anderson, 2013), that used a "strengths-based approach within a First Nations epistemology that can be scientifically measured and verified" (Snowshoe et al., 2015, p. 1); 2) working with multiple First Nations/Indigenous communities to investigate what is culture such as asking

community members to identify: a) what does being First Nations/Native mean to you; b) what does culture look like/sound like/feel like; and c) the multi-phased approach to identifying and refining the items generated into the reliable and valid final 29-item instrument.

A problem associated with using the Snowshoe et al., (2015) CCS in an urban California population was that urban communities are much more heterogeneous (i.e., multi-Tribal and diasporic) compared to the communities in the original CCS validation study. For example, there are over 100 Tribes represented in the San Francisco Bay Area (California Consortium for Urban Indian Health, nd). Given these differences in populations and following consultations with Dr. Snowshoe, it was clear we needed to adapt the instrument to be valid and reliable for the diasporic and multi-Tribal characteristics of urban California. This was completed in Phase 3 of the *Culture is Prevention Project* and is described in a previous paper (King et al., 2019).

Phase 4 - Pilot Testing/Validation of the CCS-CA and Evaluation of the Relationship between Culture and Mental Health

Our main purpose in Phase 4 of the *Culture is Prevention Project* was to replicate (in part) the original innovative Snowshoe et al. (2015) study conducted in Canada using the adapted version of the CCS instrument. Our objectives were to 1) validate the CCS-CA and evaluate whether it demonstrates similar characteristics as the original CCS instrument in a multi-Tribal community in California, and 2) investigate the relationship between culture (measured by the CCS-CA) and mental health/well-being (measured by the modified Herth Hope Index [mHHI]) to evaluate if we could also conclude (as did Snowshoe and colleagues) that culture is a social determinant of mental health/well-being for this population of Indigenous/Native peoples.

METHODS

Sampling

We implemented a two-step approach to participant recruitment. Inclusion criteria were that participants self-identified as Native American/Indigenous and were 18 years or older. In step one, we recruited 300 adults at cultural events held throughout the San Francisco Bay Area. These included Pow Wows, Round Dances, other Native/Indigenous community events, and seminars held at Native/Indigenous cultural centers. The research team set up tables at these events where the study was mentioned by the announcers, and participants were invited (thus could self-select)

to complete the instrument package. In step two, we were interested in recruiting urban Indigenous adults who were not frequent participants at the cultural events utilized in step one. To recruit this group, we worked with the local Community Advisory Board (CAB). CAB members are well connected to the urban Indigenous community in the San Francisco Bay Area. CAB members went to the community with specific instructions to identify and invite community members who self-identified as Native/Indigenous and were not likely to frequently attend the cultural events in step one. CAB members were known and trusted in the community and, thus, were successful in recruiting an additional 100 participants. Participants in both steps were offered raffle tickets for $25.00 gift cards as incentives. Participants were informed of the purpose of the project and that it was approved by the Indian Health Service. When participants agreed to complete the instruments, informed consent was obtained verbally.

Participants

Participants sample was taken from a diasporic urban dwelling Native/Indigenous population in the San Francisco Bay Area and surrounding areas (N = 344). In total, 407 people agreed to participate in the study. Of these, 40 participants were excluded for not meeting the criteria, and an additional 23 participants were excluded for leaving five or more items blank on measures. The resulting sample size was 344. Of these participants, the mean age was 43.3 years (range = 18-79 years, SD = 14.9). In the sample, 61% (n = 211) identified as female, 36% (n = 124) identified as male, and 3% (n = 9) identified as two-spirit or other. Participants could self-identify multiple Tribal affiliations. There were 107 individual tribal affiliations represented in our sample in which 76.7% identified one Tribal affiliation, 19.2% with two Tribes, and 4.1% with three Tribes or more (see Table 2).

Measures

The instrument package consisted of three instruments: 1) demographic questionnaire; 2) CCS-CA; and 3) mHHI. Demographic questions included gender, age, and Tribal affiliation. Participants could identify multiple Tribes based upon their ancestry. Instrument packages were paper-based and administered to the participants by research staff after achieving informed consent. Participants frequently reacted positively when they were informed that the original CCS and CCS-CA were developed by Indigenous persons for Indigenous persons.

Table 2
Self-identified Tribal Affiliations (*N* = 107)

Tribe	*n*	Tribe	*n*	Tribe	*n*	Tribe	*n*
Acoma Pueblo	1	Dine	23	Navajo	56	Shawnee	1
Agua Caliente Band of Cahuilla	1	Gabrielino	12	Northern Cheyenne	3	Sherwood Valley Rancheria	1
Algonquian	3	Grindstone Rancheria	1	Ohlone	1	Shoshoni	4
Apache	17	Hoopa	12	Ojibwe	6	Sioux	7
Arikara	3	Hopi	3	Oneida	2	Siqua	1
Athabasken	2	Huichol	1	Osage	1	Taino	2
Azteca	3	Inupiaq	1	Otomí	1	Tepehuan	1
Blackfeet	6	Jemez Pueblo New Mexico	1	Pacheedaht	1	Tewa	1
BSR Mono	2	Kanik	1	Paiute	11	Tlingit	2
Caddo Delaware	1	Karuk	4	Pame	1	Tohono O'odham	8
Calaveras County Mountain Miwak	1	Kashia Pomo	2	Pascua	1	Tongra	2
Caynee	1	Kewa	4	Pawnee	1	Torres Martinez Desert Cahuilla	1
Cheraw	1	Kickapoo	1	Pima	1	Tribe of Huslia	1
Cherokee	30	Klamath	5	Piqute	1	Tsalagi	2
Cheyenne River Sioux	3	Lakota	16	Piru	1	Tulumne Mewuk	1
Chickahominy	1	Lumbee	2	Piscatawa Nation	1	Umatilla	1
Chickasaw	2	Maidu	4	Pit River	8	Umpqua	2
Chippewa	2	Maya	2	Pomo	27	Waho	1
Choctaw	15	Maya Xicana	1	Ponca	3	Washoe	3
Chukchansi	3	Maya Yucateco	5	Pueblo	3	Winnebago	1
Chumash	5	Metis	3	Purepecha	3	Yaqui	2
Cloverdale Rancheria	1	Minnesota Chippewa Tribe	1	Rajamuji	1	Yavapai	1
Comanche	1	Miwuk	5	Redwood Valley Rancheria	1	Yupik	3
Confederated Tribes of Grand Ronde	1	Mohawk	4	Round Valley Concow	2	Yuroh	1
Coyote Valley	1	Mono	5	Sac and Fox	1	Zapoteco	2
Cree	2	Moor	1	Salish	1	Zuni	2
Creek	3	Muscogee	7	Shasta	1		

Cultural Connectedness Scale-California (CCS-CA)

The CCS-CA is a 29-item instrument modified from the CCS developed in Canada (Snowshoe et al., 2015) that measures connection to Indigenous/Native culture and includes three sub-scales: i) Identity, ii) Traditions, and iii) Spirituality. The CCS-CA differs from the original CCS due to the inclusion of the "Examples Lists" page. These examples were developed as part of the adaptation of the CCS-CA in order to be more appropriate for the multi-tribal communities in the San Francisco Bay Area (King et al., 2019). The Examples Lists were developed to support the link in the original CCS questions, which often addressed culturally-specific knowledge, plans,

beliefs, or activities, that connects Tribal/Indigenous characteristics. Additionally, some terms were changed to be more inclusive of multi-Tribal communities. For example, the CCS question: "I use tobacco for guidance" was changed to "I use ceremonial/traditional medicines (See Example List 1) for guidance or prayer or other reasons (See Example List 2)" in the CCS-CA adaptation. These lists are illustrated in Appendix 1.

Modified Herth Hope Index (mHHI)

The HHI is a well-known 12-item validated instrument. For example, a simple Google Scholar search provided 3,040 results and indicated that it has been widely used, has good psychometric properties, and has been adapted for multiple populations (Van Gestel-Timmermans, Van Den Bogaard, Brouwers, Herth, & Van Nieuwenhuizen, 2010). Cronbach's alpha for the original HHI was 0.97 (Herth, 1989 & 1991) with a two-week test retest reliability of 0.91 (Herth, 1992). It measures the multidimensional aspects of hope on three subscales: 1) temporality and future, 2) positive readiness and expectancy, and 3) interconnectedness. Hope serves as a proxy measure for mental health and well-being. Hope is known to influence the onset, duration, prognosis, and recovery from mental and physical illnesses (Obayuwana et al., 1982; Herth, 1992). In our study, we used the modified Herth Hope Index where in item number 5, the word 'faith' was changed to 'spiritual' to be more culturally appropriate. The revised version is "I have a spiritual belief that gives me comfort" (Kraus, Bartgis, Lahiff, & Auerswald, 2017).

RESULTS

Analysis

We performed correlation and confirmatory factor analysis of the adapted CCS-CA to determine its efficacy for use in diasporic urban dwelling Native/Indigenous communities. Descriptive statistics are provided for total CCS-CA, subscales, and mHHI in Table 3. Results also show correlations between the CCS-CA, its subscales, and the theoretically linked measure, the HHI (e.g., proxy for mental health/well-being), were significant at the *ps < 0.001 (*using a Pearson Correlation on SPSS Version 21.0, see Table 4) and in the expected direction, providing evidence for criterion validity (see King et al., 2019). In addition, Standardized factor loadings for the 29 items grouped by sub-scales are illustrated in Table 5**.**

Chi-square goodness-of-fit test was conducted to determine whether an equal number of participants from each of the gender types were recruited to the study. The goodness of fit test

indicated that the number of females, males, two spirit, and other participants were equally represented by the participants recruited to the study, χ^2 (2) = 77.334, p = 1.[2]

Table 3
Cultural Connectedness Scale – California, CCS-CA Subscales, and Herth Hope Index

	n	Range	Mean	Median	*SD*
CCS-CA Total Score	344	37.0 - 145.0	124.26	129.00	18.51
Traditions	344	11.0 - 55.0	46.44	49.00	8.91
Identity	344	15.0 - 55.0	49.05	51.00	6.94
Spirituality	344	7.0 - 35.0	28.79	30.00	5.59
HHI	344	16.0 - 48.0	41.78	43.00	4.78

Table 4
Correlations between the Cultural Connectedness Scale – California and Herth Hope Index

	CCS-CA Total Score	Traditions	Identity	Spirituality
CCS-CA Total Score	-			
Traditions	. 856*	-		
Identity	. 836*	.482*	-	
Spirituality	. 884*	.625*	.733*	-
HHI	.326*	.260*	.282*	.282*

We did a visual check of the histogram, and there was no evidence that the CCS-CA scores were skewed. However, the CCS-CA is made up of 29 items consisting of three subscales. Prior to analysis of Confirmatory Factor Analysis (CFA), we checked multivariate normality (MVN) using the Mardia test. The multivariate and univariate normality were violated. Given that the data are not multivariate normal and that variables are not univariate normal, a maximum likelihood estimation with robust (MLR) standard errors was selected for the CFA. Research has shown that MLR best estimates the model with smaller sample sizes and violations of MVN, which is common in social science research (Boomsma, 1982; Green, 1984). Model fit as well as model comparison were conducted; as expected, and as found in Snowshoe et al. (2015 & 2017), the three-factor model (i.e., Tradition, Identity, & Spirituality) had the best fit (CCS, $\chi 2$ (3) = 64.138, $p < .001$; CMIN = 2.56; CFI = 0.913; AGFI = 0.988; and RMSEA of 0.077 90% C.I. (0.071, 0.084).

[2] p-value had to be simulated due to the small observed frequencies (i.e., with Two Spirit and Other). This simulation of p-values can be thought of being a version of Fisher's exact test, which does not rely on a chi-square approximation.

Table 5
Items and Standardized Factor Loading

Q#	Subscales	CCS-CA Standardized Loads
	Traditions - 11 Items CCS-CA	
4	I use ceremonial/traditional medicines (See List 1) for guidance or prayer or other reasons. (See List #2)	0.805
5	I have participated in a traditional/cultural ceremony or activity. (See List #3)	0.855
6	I have helped prepare for a traditional/cultural ceremony or activity in my family or community. (See List #3)	0.749
8	Someone in my family or someone I am close with attends traditional/cultural ceremonies or activities. (See List #3)	0.588
9	I plan on attending a traditional/cultural ceremony or activity in the future. (See List #3)	0.619
7	I have shared a meal with community, offered food or fed my ancestors for a traditional/cultural or spiritual reason.	0.752
27	How often do you offer a ceremonial/traditional medicine for cultural/traditional purposes? (See List #1)	0.648
28	How often do you use ceremonial/traditional medicines? (See List #1)	0.725
29	How often does someone in your family or someone you are close to use ceremonial/traditional medicines? (See List #1)	0.593
2	I can understand some of my Native American/Indigenous words or languages.	0.485
11	I have a traditional person, elder or other person who I can talk to. (See List #5)	0.431
	Identity - 11 Items CCS-CA	
10	I plan on trying to find out more about my Native American/Indigenous culture, such as its history, Tribal identity, traditions, customs, arts and language.	0.281
12	I have spent time trying to find out more about being Native American/Indigenous, such as its history, tribal identity, traditions, language and customs.	0.652
13	I have a strong sense of belonging to my Native American/Indigenous family, community, Tribe or Nation.	0.725
14	I have done things that will help me understand my Native American/Indigenous background better.	0.818
15	I have talked to community members or other people (See List #5) in order to learn more about being Native American/Indigenous.	0.77
16	When I learn something about my Native American/Indigenous culture, history or ceremonies, I will ask someone, research it, look it up, or find resources to learn more about it.	0.703
17	I feel a strong attachment towards my Native American community or Tribe.	0.742
18	If a traditional person, counsellor or Elder who is knowledgeable about my culture spoke to me about being Native American/Indigenous, I would listen to them carefully. (See List #5)	0.737
19	I feel a strong connection to my ancestors and those who came before me.	0.771
20	Being Native American means I sometimes have a different perception or way of looking at the world.	0.767
22	It is important to me that I know my Native American/Indigenous or Tribal language(s).	0.718
	Spirituality - 7 Items CCS-CA	
1	I know my cultural, spirit, Indian or Traditional Name.	0.174
3	I believe things like animals, rocks (and all nature) have a spirit like Native American/Indigenous People.	0.385
21	The eagle feather (or other feathers - See Example List #6) has a lot of traditional meaning for me.	0.711
23	When I am physically ill, I look to my Native American/Indigenous culture for help.	0.854
24	When I am overwhelmed with my emotions, I look to my Native American/ Indigenous culture for help	0.916
25	When I need to make a decision about something, I look to my Native American/ Indigenous culture for help.	0.889
26	When I am feeling spiritually disconnected, I look to my Native American /Indigenous culture for help.	0.881

There were two items that did not have significant factor loading. Item 10: "I plan on trying to find out more about my Native/Indigenous culture, such as history, Tribal identity, traditions, customs, art and language (.281)." and Item 1: "I know my cultural, spirit, Indian or Traditional Name (.174)," They were each below (.3), which is considered the standard threshold (Cronbach, 1951; DiStefano, Zhu, & Mindrila, 2009). These two items were left in as their removal served no practical purpose, and their inclusion did not affect the final analysis (Heene, Hilbert, Draxler, Ziegler, & Bühner, 2011). The lower factor loadings on these two items can be interpreted as an effect of colonization upon urban dwelling Native Americans. This diasporic population is dislocated from historical lands and cultural practices and therefore finding or accessing knowledge is difficult and sometimes not even possible (Walters, Beltran et al., 2011; Walters & Simoni, 2002; Whitbeck, Hoyt, Stubben, & LaFromboise, 2001). There were also significant positive correlations among all three latent factors (see Table 5). Lastly, overall reliability was evaluated with Cronbach Alpha $\alpha = .941$.

Research Staff Observations of Participants' Experience

During pilot testing, participants were observed by the research team while completing the instrument. Research staff reported that participants commonly appeared interested and frequently wrote comments on the questions pages or the Examples Lists regarding cultural elements. Participants also 'checked off' items on the Examples Lists. Research staff, who were not trained clinicians, reported that there seemed to be a therapeutic effect while completing the CCS-CA and that participants appeared positive and appreciative when returning the package. After returning a completed CCS-CA, research staff asked what participants thought about their experience. Frequent responses reported by research staff included: a) indicating that they liked completing the instrument; b) participants asking for a copy of the instrument; c) indicating the instrument was aligned with being Native/Indigenous; d) expressed appreciation for the thoroughness/ inclusiveness of the medicines and ceremonial practices listed; e) indicated that they felt more connected to their culture after learning about cultural concepts and practices through completing the instrument; and f) adding options familiar to their own tribal practices to the various answer lists. (Note – The methods did not include preplanning of an implementation analysis that included a systematic approach to evaluating and documenting participants' perceptions about the CCS-CA. The participants' frequent responses described in the list above derived from consensus decisions from research staff at team meetings following data collection.)

DISCUSSION

The main aim of Phase 4 of the *Culture is Prevention Project* was to investigate the psychometric characteristics of the CCS-CA and to evaluate the associations among cultural connectedness and mental health/well-being. We wanted to find out if, after working with our communities to adapt the CCS to be more community-specific (i.e., appropriate for our multi-tribal communities), the new CCS-CA worked as well as the CCS demonstrated in the Snowshoe et al. (2015) study. The results indicate that the CCS-CA performed as intended and also confirmed Snowshoe et al.'s conclusion that Indigenous/Native culture (i.e., cultural connectedness) is a social determinant of mental health/well-being (Snowshoe et al., 2015). Our results indicated that the CCS-CA is a valid and reliable measure within diasporic, urban-dwelling, and multi-Tribal Indigenous/Native communities.

These results further demonstrate the high degree of value and importance of the previous and innovative work, conducted by Dr. Snowshoe and colleagues, in the development and testing of the original CCS. We can now report that two large sample studies conducted in two countries, among different populations demonstrated similar results. This was accomplished using similarly operationalized definitions of culture, but differently adapted instruments. For example, in the Snowshoe et al., (2015) study (N = 319, ages 12-29, mean age 15.3) from Saskatchewan and Southwestern Ontario, the participants were First Nations, Métis, and Inuit. In that study, 78% of participants identified as living on-reserve; whereas, in our northern California study, participants were urban-dwelling adults (N = 344, ages 18-79, mean age 43.3) and were much more multi-Tribal with representation from 107 Tribes. Given the above, one strength of the methods employed by Snowshoe et al. (2015) is the portability and adaptability to other Indigenous communities. In our previous paper (King et al., 2019), we present a relatively simple local adaptation approach that could be implemented by other interested Indigenous/Native communities.

Implications for Native/Indigenous Communities in Other Areas

Indigenous peoples around the world are taking similar courses of action in movement towards cultural revitalization and connectivity across Indigenous territories. Mending collective memory and addressing the harm of colonization and historical trauma to reclaim and nurture what remains and what has been lost provides a pathway that Indigenous peoples around the

world go to for the betterment and health of their people. Through language, dance, teachings, or reclaiming and reinvention of traditions for solutions to contemporary problems, Indigenous communities can rectify continuing disavowal of Indigenous identity and language loss, and introduce belonging to those constructing their identity within the diaspora. In the case of Snowshoe and colleague's (2015) original CCS and the adapted multi-Tribal CCS-CA (King et al., 2019), we believe that indigenizing screening and evaluation materials that measure positive overall health outcomes and that link culture and better mental health and/or well-being has the potential to expand into culturally relevant adaptations across Turtle Island/Abya Yala.[3]

Western interpretations of illness onto Indigenous peoples and research with Indigenous peoples has led to a historical disconnect that is seen throughout Indigenous territories in North America, Central/South America, Australia, and New Zealand (Collier, Farias-Campero, Perez, & White; 2000; Martín & Millares, 2013; da Silva, Gabert-Diaz, & da Silva, 2015; Waterworth, Pescud, Braham, Dimmock, & Rosenberg, 2015). Indigenizing evaluation and assessments by adapting the CCS with an accompanying assessment tool to understand traditional definitions of mental health symptoms can assess and sustain well-being through blending culture and processing through the distressing and traumatic nature of development in these regions.

When other Indigenous communities are interested in or motivated to adapt the CCS-CA to their local population, there are several things to be considered in that process. Most steps have been delineated in our previous work on the development of and adaptation of the measure (see King et al., 2019). We are including the following for consideration during that process as well. The first is how the local team is chosen and the process to implementation. The team needs to be an integrated part of the process and understand they are working collaboratively with their advisory board. Second, the advisory board should reflect on the process of colonization and the specific historical impact upon their community. To assist in this matter, a third consideration is that the advisory board should consist of members of the local community who understand that colonization has a strategy but so does Indigenous healing and resiliency. The team needs to be the right team, at the right place, during the right time, and guided by prayer. Lastly, the recognition of the importance of interdependence in the process between the community informing the process, the advisory members being liaison, and the chosen team (i.e., no one

[3] Turtle Island comes from multiple Indigenous groups (Anishinaabe/Lenape/Mohawk) and across what is known as Canada and northeast United States to describe the North American continent. Similarly, Abya Yala comes from the Kuna people in what is now known as Panama to mean "land in its full maturity," and is used to refer to the entirety of the South American continent.

part is more important than another). This is a community-based participatory research approach for adaptation.

Future Directions

In 1946, the World Health Organization stated that culture is a social determinate of health (WHO, 1946). Since that time, effort has been made to better understand culture and its influence upon health outcomes. This then led to a better appreciation that Native/Indigenous culture is an important factor in preventing the development of health disparities, maintaining healthy communities, and returning Native/Indigenous people to health. However, it remains important to recognize that Indigenous/Native communities are very diverse, and one size does not fit all.

Future research could support the use of the CCS to inform interventions and programs. Culturally informed programs within the local Indigenous population have the potential to improve outcomes through strength-based and resilience-based interventions. For example, with further research, the Cultural Connectivity Scale (e.g., CCS or CCS-CA) may have the potential to be used as a screening instrument, diagnostic tool, or a guide for treatment plans. As part of this, we ask the questions: a) Can the CCS-CA identify persons who are doing well or not doing well; b) Do persons who are doing well, or not doing well, have different CCS-CA total response profiles or sub-scale specific profiles (e.g., Identity, Traditions, and Spirituality); and c) What if (at least initially) we could use the CCS-CA and did not have to ask questions about risk? We have received funding to begin addressing these questions which are aligned with Phases 5 and 6 of the *Culture is Prevention Project* indicated in Table 1.

Limitations

Our interests in this study included replication (in part) of the Snowshoe et al. (2015) study with the objectives of validating the CCS-CA and evaluating the relationships between culture/cultural connectedness and a proxy for mental health/well-being as measured by the HHI. Our plan was to begin preliminary investigation into links between culture and health outcomes as well as implement a strength-based approach, developed by Native/Indigenous persons for Native/Indigenous persons, within our limited resources. (Note, this project did not have 'project-specific' funding and was leveraged from other funded programs.) Given this, we did not attempt

to measure or control for historical trauma or perceived discrimination which impact mental health and, thus, would have influenced responses on the HHI. We only performed preliminary correlations analysis, and future research can investigate the predictiveness of the CCS-CA upon multiple health outcome dependent variables (e.g., depression, substance use disorders).

The CCS was developed by Indigenous/Native persons for Indigenous/Native persons; however, the HHI is not an instrument developed by Indigenous/Native persons or for multi-Tribal communities. Although the HHI is well-known and widely used, a more culturally appropriate proxy measure for mental health and well-being could have been more helpful for the purpose of our study.

In addition, although there were over 100 Tribes represented in our urban California sample, the CCS-CA cannot be generalized to any one Tribe or other urban communities. We then recommend that communities interested in using the CCS-CA also adapt the CCS-CA or CCS to be community/culturally appropriate.

CONCLUSION

This study and the study by Snowshoe and colleagues (2015) provide support for and add to the evidence as well as historical knowledge that culture is an important determinant of health for Indigenous peoples. Both studies demonstrated the capacities of the original CCS and the modified CCS-CA to measure cultural connectedness. This study successfully demonstrated the relative ease with which the original CCS, or for that matter the CCS-CA, could be modified to be a valid and reliable community or Tribal-specific instrument.

It has been established that culture (i.e., cultural connectedness) can be measured and that it is a social determinant of health. Strengthening connections or re-connecting to culture can be a viable program objective (and outcome measure) in developing programs and interventions for Indigenous/Native peoples. Going forward, governments, academia, and Western medicine should be cognizant that Indigenous/Native cultures historically manufactured good health. They should try to better understand and promote Indigenous epistemology and community-defined evidence practices (CDEPs) that support health and do not undermine traditional approaches to health. There should be more support for interventions developed by Indigenous persons for Indigenous persons and less emphasis on Western models of ‘evidence-based practices’ that were not developed by Native/Indigenous persons for Native/Indigenous persons. Governments and researchers should

recognize and do better at comprehending and understanding the value of strength-based resiliency models and culturally appropriate approaches to program evaluations and measuring health outcomes. It is possible to show a person or community is doing better by measuring more of the good (e.g., strengths and well-being) versus less of the bad (e.g., risk behavior and illness).

REFERENCES

Boomsma, A. (1982). The robustness of LISREL against small sample sizes in factor analysis models. *Systems under indirect observation: Causality, structure, prediction*, 149-173.

Brave Heart, M. Y. H., Chase, J., Elkins, J., & Altschul, D. B. (2011). Historical trauma among Indigenous peoples of the Americas: Concepts, research, and clinical considerations. *Journal of Psychoactive Drugs*, *43*(4), 282-290. http://dx.doi.org/10.1080/02791072.2011.628913

Brave Heart, M. Y. H., & DeBruyn, L. M. (1998). The American Indian holocaust: Healing historical unresolved grief. *American Indian and Alaska Native Mental Health Research*, *8*(2), 56-78. http://dx.doi.org/10.5820/aian.0802.1998.60

California Consortium for Urban Indian Health. (n.d.). *Urban Indians.* Retrieved from http://ccuih.org/our-community/

Castor, M. L., Smyser, M. S., Taualii, M. M., Park, A. N., Lawson, S. A., & Forquera, R. A. (2006). A nationwide population-based study identifying health disparities between American Indians/Alaska Natives and the general populations living in select urban counties. *American Journal of Public Health*, *96*(8), 1478-1484. https://dx.doi.org/10.2105/AJPH.2004.053942

Chandler, M. J., & Lalonde, C. (1998). Cultural continuity as a hedge against suicide in Canada's First Nations. *Transcultural Psychiatry*, *35*(2), 191-219. https://doi.org/10.1177/136346159803500202

Chandler, M. J. (2014). Cultural continuity and the social-emotional well-being of first nations youth. In F. Trovato & A. Romaniuk (Eds.), *Aboriginal populations: Social, demographic and epidemiological perspectives* (pp. 187-196). Edmonton: University of Alberta Press.

Chartier, K., & Caetano, R. (2010). Ethnicity and health disparities in alcohol research. *Alcohol Research & Health*, *33*(1-2), 152. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3887493/

Collier, G. A., Farias Campero, P. J., Perez, J. E., & White, V. P. (2000). Socio-economic change and emotional illness among the Highland Maya of Chiapas, Mexico. *Ethos, 28*(1), 20-53. https://www.jstor.org/stable/640700

Coser, A., Sittner, K. J., Walls, M. L., & Handeland, T. (2018). Caregiving stress among American Indians with type 2 diabetes: The importance of awareness of connectedness and family support. *Journal of family nursing*, *24*(4), 621-639. https://doi.org/10.1177/1074840718810550

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, *16*(3), 297-334. http://dx.doi.org/10.1007/BF02310555

DiStefano, C., Zhu, M., & Mindrila, D. (2009). Understanding and using factor scores: Considerations for the applied researcher. *Practical Assessment, Research & Evaluation*, *14*(20), 1-11. Retrieved from https://eric.ed.gov/?id=EJ933679

da Silva, H. B., Gabert Diaz, C. M., & da Silva, K. F. (2015). Culture and indigenous women's health: integrative review. *Journal of Research Fundamental Care – Online.* Federal University of Rio de Janeiro State. Translated into English, original Brazilian Portuguese. http://seer.unirio.br/index.php/cuidadofundamental/article/view/3374/pdf_1689.

Ehlers, C. L., Gizer, I. R., Gilder, D. A., & Yehuda, R. (2013). Lifetime history of traumatic events in an American Indian community sample: Heritability and relation to substance dependence, affective disorder, conduct disorder and PTSD. *Journal of Psychiatric Research*, *47*(2), 155-161. http://dx.doi.org/10.1016/j.jpsychires.2012.10.002

Gone, J. P. (2009). A community-based treatment for Native American historical trauma: Prospects for evidence-based practice. *Journal of Consulting and Clinical Psychology*, *77*(4), 751. http://dx.doi.org/10.1037/a0015390

Green, P. J. (1984). Iteratively reweighted least squares for maximum likelihood estimation, and some robust and resistant alternatives. *Journal of the Royal Statistical Society: Series B (Methodological)*, *46*(2), 149-170. https://doi.org/10.1111/j.2517-6161.1984.tb01288.x

Heene, M., Hilbert, S., Draxler, C., Ziegler, M., & Bühner, M. (2011). Masking misfit in confirmatory factor analysis by increasing unique variances: A cautionary note on the usefulness of cutoff values of fit indices. *Psychological Methods*, *16*(3), 319-336. https://doi.org/10.1037/a0024917

Herth, K. (1989). The relationship between level of hope and level of coping response and other variables in patients with cancer. *Oncology Nursing Forum*,*16*(1), 67-72. Retrieved from https://europepmc.org/abstract/med/2911529

Herth, K. (1991). Development and refinement of an instrument to measure hope. *Research and Theory for Nursing Practice*, *5*(1), 39. Retrieved from https://search.proquest.com/openview/26bef71b4e3dbf8f219016254b790c3f/1?pq-origsite=gscholar&cbl=28849

Herth, K. (1992). Abbreviated instrument to measure hope: Development and psychometric evaluation. *Journal of Advanced Nursing*, *17*(10), 1251-1259. https://www.ncbi.nlm.nih.gov/pubmed/2063043

Irwin, L. (1997). Freedom, law, and prophecy: A brief history of Native American religious resistance. *American Indian Quarterly*, *21*(1), 35-55. http://dx.doi.org/10.2307/1185587

Kenny, M. K., & Singh, G. K. (2016), Adverse childhood experiences among American Indian/Alaska Native Children: The 2011-2012 National Survey of Children's Health, *Scientifica*, Article ID 742439, 1-14. http://dx.doi.org/10.1155/2016/7424239

King, J., Masotti, P., Dennem, J., Hadani, S., Lockhart. B., Linton. J., & Bartgis, J. (2019). The Culture is Prevention Project: Adapting the Cultural Connectedness Scale for multi-tribal communities. *American Indian and Alaska Native Mental Health Research*, *26*(3), 104-135. http://dx.doi.org/10.5820/aian.2603.2019.104

Kolahdooz, F., Nader, F., Kyoung, J. Y., & Sharma, S. (2015). Understanding the social determinants of health among Indigenous Canadians: Priorities for health promotion policies and action. *Global health action*, *8*(1), 1-16. https://doi.org/10.3402/gha.v8.27968

Kraus, C., Bartgis, J., Lahiff, M., & Auerswald, C. L. (2017). The Gathering of Native Americans Intervention: Cultivating Hope and Meaningful Relationships for Urban American Indian Adolescents in California. *Journal of Adolescent Health*, *60*(2), S1. https://doi.org/10.1016/j.jadohealth.2016.10.024

Martín, I. Z., & Miralles, P. M. (2013). Aportaciones de la etnografía doblemente reflexiva en la construcción de la terapia ocupacional desde una perspectiva intercultural. *AIBR: Revista de Antropología Iberoamericana*, *8*(1), 9-48. https://doi.org/10.11156/aibr.080102

McCormick, R. (1995). Culturally appropriate means and ends of counselling as described by the First Nations people of British Columbia. *International Journal for the Advancement of Counselling*, *18*(3), 163-172. http://dx.doi.org/10.1007/BF01407960

Menzies, P., & Lavallee, L. (2014) Preface. In Menzies and Lavallee (Eds.) *Journey to healing Aboriginal people with addiction and mental health issues: What health, social service and justice workers need to know* (pp. xi - xiii). Toronto: Centre for Addiction and Mental Health.

Mitchell, F. M. (2012). Reframing diabetes in American Indian communities: A social determinants of health perspective, *Health and Social Work*, *37*(2), 71-79. http://dx.doi.org/10.1093/hsw/hls013

Obayuwana, A. O., Collins, J. L., Carter, A. L., Rao, M. S., Mathura, C. C., & Wilson, S. B. (1982). Hope Index Scale: An instrument for the objective assessment of hope. *Journal of the National Medical Association*, *74*(8), 761. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2552959/

Snowshoe, A., Crooks, C. V., Tremblay, P. F., Craig, W. M., & Hinson, R. E. (2015). Development of a cultural connectedness scale for First Nations youth. *Psychological Assessment*, *27*(1), 249-259. http://dx.doi.org/10.1037/a0037867

Snowshoe, A., Crooks, C. V., Tremblay, P. F., & Hinson, R. E. (2017). Cultural connectedness and its relation to mental wellness for First Nations youth. *The Journal of Primary Prevention*, *38*(1-2), 67-86. https://link.springer.com/article/10.1007/s10935-016-0454-3

Stamm, B. H., & Stamm, H. E. (1999). Trauma and loss in Native North America: An ethnocultural perspective. In K. Nader, N. Dubrow, & B. H. Stamm, *Honoring differences: Cultural issues in the treatment of trauma and loss*, (pp. 49-75). Philadelphia, PA: Taylor & Francis.

Tucker, R. P., Wingate, L. R., & O'Keefe, V. M. (2016). Historical loss thinking and symptoms of depression are influenced by ethnic experience in American Indian college students. *Cultural Diversity and Ethnic Minority Psychology, 22*(3), 350-358. https://dx.doi.org/10.1037/cdp0000055

Van Gestel-Timmermans, H., Van Den Bogaard, J., Brouwers, E., Herth, K., & Van Nieuwenhuizen, C. (2010). Hope as a determinant of mental health recovery: A psychometric evaluation of the Herth Hope Index-Dutch version. *Scandinavian Journal of Caring Sciences 24*, 67-74. http://dx.doi.org/10.1111/j.1471-6712.2009.00758.x

Walter, M., & Andersen, C. (2013). *Indigenous statistics: A quantitative research methodology*. Walnut Creek, CA: Left Coast Press.

Walters, K. L., Beltran, R., Huh, D., & Evans-Campbell, T. (2011). Dis-placement and dis-ease: Land, place, and health among American Indians and Alaska Natives. In L. Burton, S. Matthews, M. Leung, S. Kemp, & D. Takeuchi (Eds.), *Communities, neighborhoods, and health. Social disparities in health and health care*, Vol 1 (pp. 163-199). Springer, New York, NY. https://doi.org/10.1007/978-1-4419-7482-2_10

Walters, K. L., Mohammed, S. A., Evans-Campbell, T., Beltrán, R. E., Chae, D. H., & Duran, B. (2011). Bodies don't just tell stories, they tell histories: Embodiment of historical trauma among American Indians and Alaska Natives. *Du Bois Review: Social Science Research on Race, 8*(1), 179-189. https://doi.org/10.1017/S1742058X1100018X

Walters, K. L., & Simoni, J. M. (2002). Reconceptualizing Native women's health: An "indigenist" stress-coping model. *American Journal of Public Health*, *92*(4), 520-524. https://dx.doi.org/10.2105/AJPH.92.4.520

Waterworth, P., Pescud, M., Braham, R., Dimmock, J., & Rosenberg, M. (2015). Factors influencing the health behaviour of indigenous Australians: Perspectives from support people. *PloS one, 10*(11), e0142323. https://doi.org/10.1016/j.foreco.2008.01.004

Whitbeck, L. B., Hoyt, D. R., Stubben, J. D., & LaFromboise, T. (2001). Traditional culture and academic success among American Indian children in the Upper Midwest. *Journal of American Indian Education, 40*, 48–60. https://www.jstor.org/stable/24398333

World Health Organization (WHO). (1946, June). *Constitution*. Retrieved from https://www.who.int/about/who-we-are/constitution

Zimmerman, M. A., Ramirez-Valles, J., Washienko, K. M., Walter, B., & Dyer, S. (1996). The development of a measure of enculturation for Native American youth. *American Journal of Community Psychology, 24*(2), 295-310. https://doi.org/10.1007/BF02510403

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The Indian Health Service (IHS) National Institutional Review Board (NIRB) reviewed and approved this research [N17-N-02: Culture is Prevention]. The research and publication were also approved by the Community Advisory Board.

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APPENDIX

Appendix A – Cultural Connectedness Scale – California, Sub Scales

Traditions - 11 Items

- I use ceremonial/traditional medicines ***(See Examples List #1)*** for guidance or prayer or other reasons. ***(See Examples List #2)*** [a]
- I have participated in a traditional/cultural ceremony or activity. ***(See Examples List #3)*** [a]
- I have helped prepare for a traditional/cultural ceremony or activity in my family or community. ***(See Examples List #3)*** [a]
- Someone in my family or someone I am close with attends traditional/cultural ceremonies or activities. ***(See Examples List #3)*** [a]
- I plan on attending a traditional/cultural ceremony or activity in the future. ***(See Examples List #3)*** [a]
- I have shared a meal with community, offered food or fed my ancestors for a traditional/cultural or spiritual reason.[a]
- How often do you offer a ceremonial/traditional medicine for cultural/traditional purposes? ***(See Examples List #1)*** [c]
- How often do you use ceremonial/traditional medicines? ***(See Examples List #1)*** [c]
- How often does someone in your family or someone you are close to use ceremonial/traditional medicines? ***(See Examples List #1)*** [c]
- I can understand some of my Native American/Indigenous words or languages. [a]
- I have a traditional person, elder or other person who I can talk to. ***(See Examples List #5)*** [a]

Identity - 11 Items

- I plan on trying to find out more about my Native American/Indigenous culture, such as its history, Tribal Identity, traditions, customs, arts and language. [a]
- I have spent time trying to find out more about being Native American/Indigenous, such as its history, tribal identity, traditions, language and customs. [b]
- I have a strong sense of belonging to my Native American/Indigenous family, community, Tribe, or Nation. [b]
- I have done things that will help me understand my Native American/Indigenous background better. [b]
- I have talked to community members or other people ***(See Examples List #5)*** in order to learn more about being Native American/Indigenous. [b]
- When I learn something about my Native American/Indigenous culture, history or ceremonies, I will ask someone, research it, look it up, or find resources to learn more about it. [b]
- I feel a strong attachment towards my Native American community or Tribe. [b]
- If a traditional person, counsellor or Elder who is knowledgeable about my culture spoke to me about being Native American/Indigenous, I would listen to them carefully. ***(See Examples List #5)*** [b]
- I feel a strong connection to my ancestors and those who came before me. [b]
- Being Native American means I sometimes have a different perception or way of looking at the world. [b]
- It is important to me that I know my Native American/Indigenous or Tribal language(s). [b]

Spirituality - 7 Items

- I know my cultural, spirit, Indian or Traditional Name. [a]
- I believe things like animals, rocks (and all nature) have a spirit like Native American/Indigenous People. [b]
- The eagle feather (or other feathers - ***See Examples List #6***) has a lot of traditional meaning for me. [b]
- When I am physically ill, I look to my Native American/Indigenous culture for help. [b]
- When I am overwhelmed with my emotions, I look to my Native American/Indigenous culture for help. [b]
- When I need to make a decision about something, I look to my Native American/Indigenous culture for help. [b]
- When I am feeling spiritually disconnected, I look to my Native American/Indigenous culture for help. [b]

Response Format

[a] = Yes, No (or Not Applicable)
[b] = Strongly Disagree, Disagree, Do Not Agree or Disagree, Agree, Strongly agree
[c] = Never, once/twice past year, every month, every week, every day

Appendix B – Cultural Connectedness Scale – California

QUESTIONS 1 - 11, Circle the Most Accurate Answer

1. **I believe things like animals, rocks (and all nature) have a spirit like Native American/ Indigenous People.**
   Yes No
2. **I can understand some Native American/Indigenous words or language(s).**
   Yes No
3. **I know my Cultural, Spirit, Indian or Traditional Name.**
   Yes No Does Not Apply (We do not use these names)
4. **I use ceremonial/traditional medicines (See Examples List #1) for guidance or prayer or other reasons (See Examples List #2).**
   Yes No
5. **I have participated in a traditional/cultural ceremony or activity (See Examples List #3).**
   Yes No
6. **I have helped prepare for a traditional/cultural ceremony or activity in my family or community (See Examples List #3).**
   Yes No
7. **I have shared a meal with community, offered food or fed my ancestors for a traditional/cultural or spiritual reason (See Examples List #4).**
   Yes No
8. **Someone in my family or someone I am close with attends traditional/cultural ceremonies or activities (See Examples List #3).**
   Yes No
9. **I plan on attending a traditional/cultural ceremony or activity in the future (See Examples List #3).**
   Yes No
10. **I plan on trying to find out more about my Native American/Indigenous culture, such as its history, Tribal identity, traditions, customs, arts and language.**
    Yes No
11. **I have a traditional person, elder or other person who I can talk to (See Examples List #5).**
    Yes No

QUESTIONS 12 - 29, Circle the Most Accurate Answer

12. I have spent time trying to find out more about being Native American/Indigenous, such as history, tribal identity, traditions, language and customs.
Strongly Disagree Disagree Do Not Agree or Disagree Agree Strongly Agree

13. I have a strong sense of belonging to my Native American/Indigenous family, community, Tribe, or Nation.
Strongly Disagree Disagree Do Not Agree or Disagree Agree Strongly Agree

14. I have done things that will help me understand my Native American/Indigenous background better.
Strongly Disagree Disagree Do Not Agree or Disagree Agree Strongly Agree

15. I have talked to community members or other people (See Examples List #5) in order to learn more about being Native American/Indigenous
Strongly Disagree Disagree Do Not Agree or Disagree Agree Strongly Agree

16. When I learn something about my Native American/Indigenous culture, history, or ceremonies, I will ask someone, research it, look it up, or find resources to learn more about it.
Strongly Disagree Disagree Do Not Agree or Disagree Agree Strongly Agree

17. I feel a strong connection/attachment towards my Native American community or Tribe.
Strongly Disagree Disagree Do Not Agree or Disagree Agree Strongly Agree

18. If a traditional person, counselor or Elder who is knowledgeable about my culture, spoke to me about being Native American/Indigenous, I would listen to them carefully (See Examples List #5).
Strongly Disagree Disagree Do Not Agree or Disagree Agree Strongly Agree

19. I feel a strong connection to my ancestors and those that came before me.
Strongly Disagree Disagree Do Not Agree or Disagree Agree Strongly Agree

20. Being Native American/Indigenous means I sometimes have a different perception or way of looking at the world.
Strongly Disagree Disagree Do Not Agree or Disagree Agree Strongly Agree

21. The eagle feather (or other feathers) has a lot of traditional meaning for me (See Examples List #6).
Strongly Disagree Disagree Do Not Agree or Disagree Agree Strongly Agree

22. It is important to me that I know my Native American/Indigenous or Tribal language(s).
Strongly Disagree Disagree Do Not Agree or Disagree Agree Strongly Agree

23. When I am physically ill, I look to my Native American/Indigenous culture or community for help.
Strongly Disagree Disagree Do Not Agree or Disagree Agree Strongly Agree

24. When I am overwhelmed with my emotions, I look to my Native American/Indigenous culture or community for help.
Strongly Disagree Disagree Do Not Agree or Disagree Agree Strongly Agree

25. When I need to make a decision about something, I look to my Native American/Indigenous culture or community for help.

Strongly Disagree Disagree Do Not Agree or Disagree Agree Strongly Agree

26. When I am feeling spiritually ill or disconnected, I look to my Native American/Indigenous culture or community for help.

Strongly Disagree Disagree Do Not Agree or Disagree Agree Strongly Agree

Please answer how often you experience the following:

27. How often do you offer a ceremonial/ traditional medicine for cultural/traditional purposes? (See Examples List #1)

Never Once/Twice in the Past Year Every Month Every Week Every Day

28. How often do you use ceremonial/traditional medicines? (See Examples List #1)

Never Once/Twice in the Past Year Every Month Every Week Every Day

29. How often does someone in your family or someone you are close to use ceremonial or traditional medicines? (See Examples List #1)

Never Once/Twice in the Past Year Every Month Every Week Every Day

CCS-CA SCORING

Yes = 5 No = 1 NA = 3

Strongly Disagree = 1
Disagree = 2
Do Not Agree/Disagree = 3
Agree = 4
Strongly Agree = 5

Never = 1
Once/Twice Past Year = 2
Every Month = 3
Every Week = 4
Every Day = 5

CCS-CA Range: 29 – 145

Identity Subscale: 11 - 55
Traditions Subscale: 11 - 55
Spirituality Subscale: 7 - 35

Examples Lists: Cultural Connectedness Scale - California

List #1 Ceremonial & Traditional Medicines	List #2 Uses of Ceremonial & Traditional Medicines	List #3 Traditional, Tribal & Cultural Ceremonies or Activities	List #4 Cultural Uses of Food	List #5 Traditional Persons, Elders & Leaders
• Angelica Root • Bear Root • Cedar • Corn Pollen • Copal • Greasewood • Jimson • Milk Weed • Mountain Tea • Mugwort • Palo de Santo, • Peyote • Sage • Sweet grass • Tobacco • Women's Tea	• Asking for a blessing in a sacred manner • Calmness • Cultural connections • Gifting to show respect • Give thanks • Guidance • Help Sleeping • To honor • Personal Healing • Prayer • Smudge • Spiritual connections • Spiritual Offerings • Steady Mind • Talk to the creator • Keep bad spirits away	• Acorn Ceremony • Beading Class • Bear Dance, Sun Dance, Round Dance or other Cultural Dance • Big Time • Burning of Clothes • Coming of Age • Deer Gathering • Drumming • Feast Giveaway • Fiesta (South of Kern Valley) • GONA • Longhouse • Moon Ceremony • New Years • Pot Latch • Pow Wow • Puberty Ceremony • Repatriation • Running is my High • Spring Ceremony • Story Telling • Sunrise Ceremony • Sun Rise (Alcatraz) • Sweat Lodge • Traditional Tattoo • Washing of the Face • Wiping of Tears • Young Men's Ceremony • Yuwipi	• Spirit Plate • Thank You Ceremony • Special Feast • Community Feed • Other	• Ceremonial Leader • Cultural Teacher • Doctor • Elder • Father • Feather Man • Feather Woman • God Father • God Mother • Head Heir • Head Man • Head Woman • Medicine People • Mother • Mother Bear • Regalia Leader • Spiritual Person • Timiiwal • Top Doc

List #6 Feathers
• Eagle • Condor • Flicker • Hummingbird • Raven • Hawk • Turkey • Quail • Woodpecker