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LITERATURE REVIEW

Indigenous Culture-as-Health: A Systematized Literature Review

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Abstract

This paper has two goals regarding cultural rigor, defined as privileging cultural ways of knowing and being as a means to achieving health and well-being for future generations. First, we move the continuum of health practices beyond cultural grounding to include Indigenous Culture-as-Health. Second, this project expands the concept of Indigenous Culture-as-Health in addiction and recovery to include a broader range of health, inclusive of prevention, to further understand this emerging model. Our review of the literature yielded an expanded cultural continuum that includes Indigenous Culture-as-Health, which appears to rely on four modalities: 1) Indigenous ways of knowing, 2) Indigenous cultural practices, 3) place-based/sacred sites, and 4) Indigenous spirituality. For Indigenous health, standards are defined by centuries of ancestral consciousness among Indigenous people across generations, in spite of settler-colonial systems that do not serve them. In other words, Indigenous Culture-as-Health practices contribute to self-determination, sovereignty, and liberation. Incorporating these strategies also will ameliorate other problems related to White supremacy and health, such as epistemic exploitation. Additional implications for prevention practice and policy are described.

Keywords Culture-as-Health · Cultural interventions · American Indian/Alaska Natives · First Nations · Indigenous · Native Hawaiian

Please note that the Hawaiian language is used several times in this manuscript. The Hawaiian language is one of two official languages (also English) in the State of Hawai`i, so it is not a foreign language and therefore Hawaiian words have not been italicized.

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Introduction

An estimated 370 million Indigenous people worldwide represent a unique diversity of cultural traditions, languages, knowledges, and spiritual beliefs (Bassett et al., 2012; Pulver et al., 2010). The United Nations defines Indigenous people as those who identify as the original caretakers, sometimes referred to as Native or Aboriginal; are recognized as community members; and who advance pre-colonial, historical continuity with strong links to their homelands. Indigenous populations are defined as living within a geographical region with a shared unique cultural history, and their practices are rooted in generations prior to western colonial contact (Pulver et al., 2010). Indigenous people who have moved from their ancestral homelands by force or choice may retain their Indigenous identity.

In comparison to many non-Indigenous populations, Indigenous people face greater social disadvantages, disproportionate burdens of diseases, and deleterious social determinants of health, much of which are related to forced migration and colonization (Pulver et al., 2010; Wilk et al., 2017). The colonization of Indigenous people and spaces has led to historical and contemporary cultural trauma. This includes intergenerational transmission of traumatic events, which result in myriad emotional and psychological disruptions (Brave Heart et al., 2011; Walters et al., 2002; Whitbeck et al., 2009). Contemporary preventive interventions with Indigenous communities must address this history, including related cultural trauma (Lewis & Myrha, 2017; Safran et al., 2009), because these disparities are evidence of ongoing systemic racism in public health (Echo-Hawk, 2019). To partially mitigate the contemporary and intergenerational impacts of colonization, genocide, and related trauma, we develop a framework for Indigenous Culture-as-Health. For the purpose of this paper, we are defining Culture-as-Health (C-as-H) as an extension of culturally grounded approaches in which cultural assets remain intact as opposed to extracting cultural assets.

The Cultural Intervention Continuum

Public health includes both the prevention of disease and life-prolonging interventions that encompass activities ranging from health promotion to prevention, treatment, rehabilitation, and recovery (World Health Organization, 2021). To align with the public health literature, we are using the term intervention as an umbrella term to encompass health promotion, prevention, treatment, rehabilitation, and recovery. We acknowledge that some Indigenous communities have expressed concerns about the term intervention because it signifies that outsiders are defining a problem that the outsiders intend to solve. We further acknowledge that some people consider the term intervention to be synonymous with treatment, including rehabilitation and recovery, but excluding prevention and health promotion. To be clear, we are using the term intervention to be inclusive of both prevention and health promotion.

There is a growing interest in Indigenous interventions, particularly developing interventions with, by, and for Indigenous people that privilege their respective

cultural knowledge systems to emphasize sovereignty from the past to present (Cochran et al., 2008; Echo-Hawk, 2019; Kaholokula et al., 2018; Mokuau, 2011; O'Keefe, 2019). An excellent overview of the existing cultural intervention continuum may be found in Okamoto and colleagues (2014). Current literature has focused on interventions that are either culturally adapted or culturally grounded to a specific ethnocultural group (Castro et al., 2017; Kaholokula et al., 2018; Mokuau, 2011; Okamoto et al., 2014). Culturally adapted interventions are tailored from an existing intervention designed for a specific cultural group to fit a different cultural group. However, this has been shown to have limited effectiveness for Indigenous and minority populations (Dixon et al., 2007; Okamoto et al., 2014). A primary critique of adapted interventions is that they retain the world view of the originally targeted group, and therefore may have iatrogenic effects, as well as be less likely to be sustained in other cultural contexts.

Culturally-grounded interventions are designed from the ground up, starting with population-specific epistemologies, such that the intervention is rooted in specific cultural values, beliefs, and ways of knowing (Lee et al., 2013; Mokuau, 2002, 2011; Okamoto et al., 2014). While a benefit of culturally-grounded interventions is that they identify and extract key cultural elements for use in interventions, the process of extraction limits cultural authenticity. A benefit of extracting and transporting cultural assets for use in an intervention is that others may use these assets in other settings, including others who are not particularly familiar with the culture. However, the extract/transport strategy represents a primary critique of cultural grounding because the inherent worth of intergenerational knowledge transmission that occurs in culturally significant settings often is excluded.

Alternatively, Culture-as-Health has emerged as the next step in the culturally informed intervention continuum (Arroyo, 2014). As an umbrella term, Culture-as-Health may include culture-as-intervention, -prevention, and -treatment. As an emerging concept, the definition, operationalization, and evaluation of C-as-H is becoming clear. For example, Gone and Calf Looking (2011) assert that Indigenous interventions that rely on centuries or millennia of self-knowledge do not require the addition of contemporary western empirical evidence for effectiveness. In other words, Indigenous knowledges and knowledge construction may be privileged over western approaches, rather than vice-versa (Gone & Calf Looking, 2011). Essentially, the idea of Culture-as-Health is linked to the nuances that define culture such as values, beliefs, practices, norms, and ways of knowing; these cultural characteristics are expressed by individuals and groups across generations, such that one's sense of self and group membership are considered culture-bound (Matsumoto & Juang, 2017). Cultures have evolved over time to preserve and perpetuate the health and well-being of members of the group, and thus cultural practices have health benefits. Furthermore, intentional health practices are culturally rooted. By acknowledging that health is a cultural phenomenon, it follows that health interventions must explicitly acknowledge that they are culturally rooted.

As an example, an early scoping review conducted by Rowan and colleagues (2014) identified characteristics of culture-based substance use interventions in which Indigenous populations had participated. Their review highlighted specific cultural practices such as sharing traditional knowledge of health, drumming, prayer,

and sweat lodges. Each of the 19 interventions identified by Rowan and colleagues had paired Indigenous practices with western practices. The Rowan et al. review did not offer a model of what works in Indigenous C-as-H as much as it provided support that Indigenous practices, as a whole, contribute to wellness in addiction recovery. A limitation of this review was its focus exclusively on addiction interventions as opposed to a broader array of health disparities as well as its focus on treatment as opposed to prevention. Nonetheless, the paper has served as an inspiration for our study. The concept of Culture-as-Health, as described herein, provides insight into the need to move beyond cultural grounding (Okamoto et al., 2014), which seems to rely on a cultural extract and transport approach. Our study builds on the knowledge that C-as-H works (Rowan et al., 2014), and what is meant by C-as-H in Indigenous interventions.

Our Study

This study is a systematized literature review that aligns with the concept of cultural rigor, which has been defined as privileging specific cultural ways of knowing and being as a means to achieving health and well-being for future generations among specific cultural groups (Echo-Hawk, 2019). Our study has two main purposes. First, by building on the Rowan et al. (2014) review mentioned above, we move the continuum of public health practices beyond cultural grounding (Okamoto et al., 2014) to include Culture-as-Health. Second, we expand the concept of C-as-H in addiction and recovery (Rowan et al., 2014) to include a broader range of health (e.g., cardiovascular health) that is inclusive of prevention to further understand the model. Our focus encompasses papers published in the peer-reviewed literature that describe interventions as C-as-H, or are otherwise based on traditional healing. To this end, we conducted a systematized literature review, which has the benefit of including many of the rigorous "elements of [the] systematic review process while stopping short of a systematic review. Typically [it would be] conducted as postgraduate student assignment" (Grant & Booth, 2009, p. 95). In other words, we adhere to the process of identifying, screening, selecting, and analyzing relevant literature, but our scope is reduced to what an emerging scholar may accomplish with minimal supervision and in a specified time period. This review was conducted by a single primary reviewer (student) in consultation with a single secondary reviewer (faculty). The current review was primarily conducted by an emerging Indigenous, Native Hawaiian scholar and was supported by the second author who is Euro-American, White, and non-Indigenous.[1]

[1] With respect to positionality, the authors recognize that being within an academic setting is a privilege, where their job is to co-construct and disseminate knowledge. In this paper, the authors are collating and disseminating a multitude of Indigenous knowledges in the form of a literature review. The authors recognize that neither they nor this review are representative of all Indigenous scholarship because Indigenous communities are unique in their own customs, values, and beliefs. The authors want to be transparent and intentional when discussing Indigenous peoples, and they want to identify that this privilege requires them to learn, re-learn and un-learn so that the work honors, privileges and respects the Indigenous communities that originated these knowledges.

Methods

Systematized Literature Review Search Strategy

For this systematized literature review, we followed PRISMA (2020) guidelines for reporting literature appraisal and assessment where appropriate. Specifically, we identified peer-reviewed articles, then screened using inclusion and exclusion criteria, and reviewed the selected articles. Notably, PRISMA guidelines emphasize intervention outcome appraisals and assessments (e.g., effect sizes, meta-analyses), and to an extent also provide insight on appraisals of intervention processes.

To expedite the systematized review, we identified peer-reviewed publications using the following three strategies. First, we searched PubMed Central as the sole database for selecting biomedical and health sciences peer-reviewed articles. Second, we included articles dated 2012 through the end of 2017. We selected the year 2012 as the starting point because the addiction and mental health review by Rowan and colleagues (2014) concluded in 2012, and a goal of our study was to expand their findings to include more recent descriptions of interventions. Boolean forms of search terms included: a) culture and ways of knowing; b) prevention, intervention, treatment, and health; and c) Indigenous population identifiers including Indigenous, Aboriginal, First Nations, Alaska Native, American Indian, Māori, Native American, and Native Hawaiian. Although this project focuses on prevention, we included a range of health intervention strategies to enhance a broad understanding of Culture-as-Health. Our search strategy resulted in a total of 908 articles which we screened using the following inclusion and exclusion criteria.

Inclusion & Exclusion Criteria

First, article titles and abstracts were reviewed. We included articles if an identified Indigenous intervention was implemented and evaluated for health outcomes, as opposed to simply describing an intervention or an intervention development concept. Both qualitative and quantitative empirical intervention studies were included, whereas purely conceptual articles were excluded. Next, we retained articles if the title and abstract referred to an Indigenous intervention as culturally-grounded or described as culturally relevant/specific, or included "deep" cultural structure (Kaholokula et al., 2018; Okamoto et al., 2014), whereas culturally-adapted interventions were excluded. Finally, articles among the 908 were excluded for several logistical reasons: article was open access or the article was not available in our institutional library, the manuscript was not written in English, or culture referred to biological samples. Applying these inclusion/exclusion criteria at the level of titles and abstracts, we winnowed the 908 articles to 133.

Second, we reviewed the remaining 133 full-text articles to determine if the intervention was culturally-grounded or culturally-adapted, due to the fact that many authors use these terms interchangeably (Okamoto et al., 2014). This step reduced the total to 46 articles that described Indigenous interventions as culturally grounded, while 87 articles on adapted interventions were excluded. The third step

included reviewing the remaining articles to distinguish culturally-grounded interventions that extracted cultural assets and transported them into other spaces from culturally-grounded interventions in which cultural assets largely were intact. Step three yielded six culturally-grounded intervention implementation studies: Adams et al. (2015), Dickerson et al. (2016), Donovan et al. (2015), Dupuis, Ritenbaugh, Joe and Young (2014), Maskarinec et al. (2015), and Schultz et al. (2016).

Given so few articles, we decided to add a fourth step to expand inclusion criteria to include intervention development studies on the cusp of implementation. Therefore, six articles were added back into the review: Bassett et al. (2012), Chief et al. (2016), Danto and Walsh (2017), Flicker et al. (2015), Graham and Martin (2016), and Helm et al. (2017). These 12 articles were then subjected to a content analysis (Barnett-Page & Thomas, 2009) to identify themes that distinguished them as Indigenous C-as-H with the cultural assets intact. These four themes are described in the results section.

Results

Twelve peer-reviewed articles met the expanded inclusion criteria for the content analysis presented here. Based on the content analysis, we developed a more robust definition of Indigenous Culture-as-Health. Given that culture is the foundation of health, the results of the review indicate that Indigenous C-as-H may be defined to include these four modalities: 1) Indigenous ways of knowing (IWoK), 2) Indigenous cultural practices (ICP), 3) place-based/sacred sites (PB/SS), and 4) Indigenous spirituality (IS). These are outlined in Table 1 and depicted in Fig. 1.

Each intervention is listed in Table 1 by intervention name and article authors, as well as the respective Indigenous population targeted, area of health, and brief description of the intervention and the ways in which it has privileged Indigenous culture. Each of the 12 intervention studies from which this Indigenous C-as-H definition emerged were conducted in collaboration with, by, and for Indigenous communities, including American Indian/Alaska Natives (Navajo, Choctaw), First Nations (Cree, Inuit, Métis), and Native Hawaiian populations. These interventions focused on alcohol, tobacco, and other drugs; cardiovascular disease; mental health; and other chronic, communicable, and injury-related disparities. Intervention names are italicized in the results and discussion. Each of the four modalities is described below and illustrated with examples from these 12 interventions.

Modality 1: Indigenous Ways of Knowing

Indigenous knowledge systems exemplified in each of the 12 interventions recognized implicitly or explicitly the role of Elders and respected Indigenous cultural practitioners in knowledge transmission. The extent to which Indigenous Ways of Knowing were explicitly or implicitly identified as a way to perpetuate intergenerational knowledge transmission from Indigenous Elders or leaders to the intervention participants is noted in Table 1. These knowledge systems served as the foundation

Table 1 Indigenous Culture-as-Health Manuscripts for Systematized Literature Review

Intervention name manuscript author	Intervention focus	Indigenous culture-as-health	
1 Cartier EAL Program Adams et al., 2015	First Nations Substance Use Equine assisted learning (EAL) to increase trust and spiritual functioning through traditional storytelling	IWoK	Traditional, culture-based storytelling Implicit: intergenerational knowledge transmission
		ICP	Connection to horses
		PB/SS	White Buffalo Treatment Center, War Sturgeon Lake Land roles in healing
		IS	Encompasses spirituality and spiritual functioning (individual, spiritual belief, sense of being, inner spirit)
2 HIV CBR Flicker et al., 2015	First Nations, Inuit, Mestiz HIV Elder knowledge transmission of ceremonial practices and spiritual grounding as a source of healing	IWoK	Indigenous Elder/practitioner knowledge translation of cultural, ceremonial practices for healing Explicit: intergenerational knowledge transmission
		ICP	Recommended ICP: traditional dietary intake and practices (i.e., swimming, food cultivation, preparation, etc.)
		PB/SS	Flathead land reservation camp on 1.3 million acre land
		IS	Spiritual grounding, healing, and celebration in ceremonial practices

Table 1 (continued)

Intervention name manuscript author	Intervention focus	Indigenous culture-as-health	
3 James & Bay Communities Danto & Walsh, 2017	Cree Nation Mental Health Issues (SI, SA, Depression) Semi-structured interviews with Aboriginal leaders (Elders, mental health workers, and other community leaders) around the medicine wheel to drive conversations around the importance of land, traditions and spirituality	IWoK	Focuses on Indigenous knowledge around mental health (i.e., support, relations, language, etc.), emotional health (i.e., focus on acceptance, future generations, etc.), and other perspectives (i.e., adversities, etc.) Explicit: intergenerational knowledge transmission
		ICP	Cultural practices of using the medicine wheel
		PB/SS	James and Hudson Bay area All places are considered sacred, with intentionality, Land is the foundation to all aspects of medicine wheel
		IS	Respect to all beliefs (i.e., Traditional spiritual beliefs, Christianity, etc.) All belief systems are unified through the shared beliefs of the community and land
4 KaHolo Project Maskarinec et al., 2015	Native Hawaiians and Non-Native Hawaiians Coronary Arterial Disease (CAD) Hula, songs and chants taught by a Kumu Hula (hula teachers) to lower blood pressure	IWoK	Chants, songs, and Hawaiian language Teachings of hula links history and stories Explicit: intergenerational knowledge transmission
		ICP	Hula as intervention, taught by kumu hula (hula teachers) Connects songs and chants to concepts of mālama ʼāina (care for the land), and cultural expressions
		PB/SS	Transitory sacred space through hula protocols
		IS	Spiritual connection through hula, chant and songs Mentions improved sense of spirituality

Table 1 (continued)

Intervention name manuscript author	Intervention focus	Indigenous culture-as-health	
5 MI and Culture for Urban Native American Youth Dickerson et al., 2016	American Indian/Alaska Native Alcohol and Other Drugs (AOD) MICUNAY: Motivational Interviewing of AI/AN youth, parents, providers and a community advisory board (made up of Elders and community leaders) to determine traditional cultural activities to be implemented in youth interventions	IWoK	Cultural traditional practices in balance with the medicine wheel Explicit: intergenerational knowledge transmission
		ICP	Recommendations for ICP: Beading, AI/AN traditional cooking, and prayer/sage ceremonies
		PB/SS	AI/AN populations living in urban California post-Indian Relocation Act of 1956
		IS	Spirituality through Traditional prayer, sage ceremonies encompass spirituality in the medicine wheel, cultural practices and prayer sessions
6 Puni Ke Ola (PiKO) Helm et al., 2017	Native Hawaiians Substance Use Culturally immersed activities in a loko i`a (fish pond) guided by cultural practitioners, using photovoice lead group discussions in the creation of an SA intervention	IWoK	Kapu aloha (sacred love) values, value of the relationships, knowledge and stewardship of kupuna (elders) and the environment Explicit: intergenerational knowledge transmission
		ICP	Huaka'i (immersive field trips, journey) in a loko i'a (fishpond) Under the guidance of elders/practitioners (intergenerational knowledge) Family support during the "ohana nights" and community celebration
		PB/SS	Place-based community (unidentified due to confidentiality)

Table 1 (continued)

Intervention name manuscript author	Intervention focus	Indigenous culture-as-health	
		IS	Kapu aloha (sacred love), was honored during this intervention process
7 Są'áh Naagháí Bik'eh Hózhóó (SNBH) framework Chief et al., 2016	Navajo Nation Smoking/Second Hand Smoke (SHS) Navajo worldviews were incorporated the in SNBH framework and circular model Thinking, planning, life, reflection (stability and restoration of balance), positive forms and negative forms as well as duality of life	IWoK	K'e and Ho'zho was the traditional knowledge foundations that created the SNBH circular model Balance, harmony, home, thoughts, body, emotions, beauty, order—binds present with the future, concern and passion, respect for all life forms on earth in the cosmos, environment, body, mind and spirit Cycle of thinking, planning, life, reflection, positive and negative forms, and duality of life Knowledge, respect for Elders to understand right from wrong, knowledge translation across generations Implicit: intergenerational knowledge transmission
		ICP	Speaking Native Navajo language Cultural and familial teachings and kinship
		PB/SS	Navajo Nation, 3 unidentified communities Specific places, sacred sites not identified, though tribal lands referenced
		IS	Traditional smoking practices, the nat'oh, which is traditional mountain smoke used in ceremonies within tribal lands to promote spirituality and health. Was not used in this project, but identified cultural practices in comparison to commercial practices

Table 1 (continued)

Intervention name manuscript author	Intervention focus	Indigenous culture-as-health	
8 Staying Connected Bassett et al., 2012	AI/AN Traumatic Injury Recovery In-depth focus group interviews on Native healer's perspectives/concepts of health and traumatic injury, help-seeking. Identify potential risk factors, protective factors and barriers to accessing care and receiving treatment post-trauma	IWoK	Whole body approach to health, connecting spirituality to the whole person, culture, and overall wellbeing Explicit: intergenerational knowledge transmission
		ICP	Native healers' perspectives and concepts of health, but cultural practices unspecified
		PB/SS	Place-based/sacred sites were not mentioned
		IS	Spirituality relates to psychological and overall wellbeing Risk factors have jeopardized that spiritual concepts Culture and spirituality are one and the same
9 The Healing of the Canoe Project Donovan et al., 2015	Native American, Suquamish and Port Gamble S'klallam Tribal communities Substance Use Culturally-Grounded social skills intervention Increased cultural belonging, identity, and positive youth development	IWoK	Suquamish tribal traditions, values, beliefs, teachings, and stories Honors ancestors, embraces Indigenous values and traditions, and "teaches the community traditional cultural ways of being" Implicit: intergenerational knowledge
		ICP	Journey includes stops at tribal communities along the way to dance, drum, sing, and share stories until arriving at a final hosting community, where there is a weeklong potlatch or celebration
		PB/SS	Pacific Northwest Tribes
		IS	Traditional Suquamish spiritual concepts and increasing spiritual self

Table 1 (continued)

Intervention name manuscript author	Intervention focus	Indigenous culture-as-health	
10 The Traditional Living Challenge Dupuis et al., 2014	American Indian/Alaska Natives Cardiovascular Disease CBPR Cultural practices were implemented amongst the 5 different camp groups Conducted around traditional diet Traditional physical activity	IWoK	Cultural and knowledge translation of activities/ways of knowing passed down from indigenous Elders/ practitioners Explicit: intergenerational knowledge transmission
		ICP	Traditional dietary intake (dried meats, berries, fish, crackers) Traditional practices (swimming, fishing, picking berries, river floating, traditional food preparation, etc.)
		PB/SS	Flathead Land Reservation camp on 1.3 million acre parcel
		IS	Tobacco used in ceremonial practices Perceptions of people's mental, physical, emotional and spiritual wellbeing and health
11 The Walk Schultz et al., 2016	American Indian/Alaska Natives Choctaw tribal members Health Disparities Wilderness experience programs and Indigenous knowledges to address health disparities by rewalking the Trail of Tears	IWoK	Ceremonial knowledge transmission Explicit: intergenerational knowledge transmission
		ICP	8–10 mile walk along Trail of Tears, representing duration walked by ancestors Historical lessons of route, vocabulary lessons Yappalli Ceremonial practices

Table 1 (continued)

Intervention name manuscript author	Intervention focus	Indigenous culture-as-health	
		PB/SS	Trail of Tears, 254 miles Arkansas Space associated with ancestral knowledges, culture, and historically significant to population
		IS	Interrelations of all things, and the relationships among them
12 Untitled–Thunderchild Graham & Martin., 2016	Canadian Indigenous populations Néhiyawak (Plains Cree People) Mental Health Semi-Structured Interviews Indigenous perspectives, strengths and resilience, in a holistic approach utilization to address the social determinants of health and mental health issues in Indigenous Canada	IWoK	Indigenous Perspectives: Relationships (i.e. sense of belonging, respect for self and culture, etc.) Spiritual Beliefs and Cultural Practices (i.e. connects spiritual events with cultural activities to promote healing, self-identity, build strengths, restore balance, etc.) Worldviews (i.e. how you see life, take personal responsibilities to help oneself, etc.) Implicit: intergenerational knowledge transmission
		ICP	Ceremonial practices, use of medicine wheel, sweat lodges, sun dance, and pow wows
		PB/SS	Place-based/sacred sites were not mentioned
		IS	Spirituality, prayer, cultural events (sweat lodges, sun dancing, pow wow, etc.) used to improve mental health, social support, transformation, promoting health, restoring balance, and building strengths

Abbreviations: IWoK: Indigenous Ways of Knowing, ICP: Indigenous Cultural Practices, PB/SS: Place-Based/Sacred Sites, IS: Indigenous Spirituality

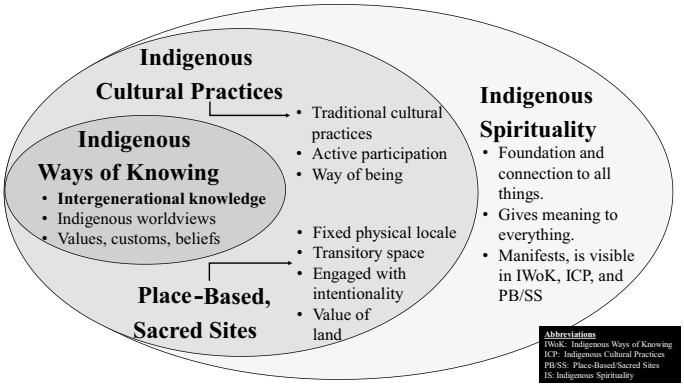

Fig. 1 Indigenous Culture-as-Health. Four Modalities

for creating, applying, and privileging Indigenous epistemologies and ontologies (ways of knowing, being and doing) in terms of ancestral consciousness to guide the development, implementation, and dissemination of interventions as a means of solidifying Indigenous pedagogies (teaching and learning practices). For example, in *Staying Connected*, Native healers provided perspectives on whole-body approaches to health (Bassett et al., 2012). This intervention described connection to spirituality, culture, whole person, and overall well-being to increase, improve, and inform western and conceptual medicine about traumatic injury recovery and help-seeking (Bassett et al., 2012). The *Są'áh Naagháí Bik'eh Hózhóó framework* (SNBH) is an Indigenous, Diné (Navajo) belief system of harmonious living and Indigenous well-being (Chief et al., 2016). SNBH drew upon Elder knowledge, reflecting on K'e and Ho'zho traditional knowledges, to serve as a guide for understanding the balance between the spirit, self, and different cycles of thinking (Chief et al., 2016). These Indigenous knowledges and systems were utilized to inform commercial smoking cessation practices (Chief et al., 2016). The *HIV CBR* project highlighted First Nations, Inuit, and Métis Elder knowledges and practices to emphasize the importance and types of ceremonial practices and ways of knowing in interventions with tribal members (Flicker et al., 2015).

Modality 2: Indigenous Cultural Practices

Indigenous cultural practices are activities in which core concepts in health are grounded in intergenerationally perpetuated epistemologies, ontologies, cosmologies, and generally practiced *in situ*. Well over half (10/12) of the interventions focused on participants actively engaging in Indigenous Cultural Practices as a core component of the health intervention. For example, the *Cartier Equine Assisted Learning (EAL) Project* worked with First Nations youth and used a connection with horses to prevent solvent use (Adams et al., 2015). For the *KaHOLO* Project, Native Hawaiians danced hula in order to reduce blood pressure among participants who had coronary arterial disease (Maskarinec et al., 2015). In *The Walk*, Choctaw tribal

members practiced their traditional knowledge, Indigenous history of place, language, and Yappalli ceremonial practices as an act of harnessing their sovereignty while walking the Trail of Tears (Schultz et al., 2016). These different cultural intervention programs privileged and perpetuated their traditional cultural practices through active participation and ways of being.

Modality 3: Place-Based/Sacred Sites

Place-Based and Sacred Sites emerged as a fundamental component of Indigenous C-as-H. The majority of these interventions (10/12) emphasized places, spaces, and sites in terms of the value of the land. Among these, seven were specifically place-based approaches, while three suggested that spaces become sacred through the presence of human interaction. Primarily, sacredness was bestowed in specific, fixed physical locations for a variety of Indigenous-recognized reasons. Secondarily, sacredness was manifested in designated sites as a result of enacting Indigenous practices or protocols. In other words, these designated sites were not inherently sacred but became so as a result of a specified Indigenous protocol enacted at a particular moment. In this sense, these spaces may be considered transitory sacred sites. As examples, *Puni Ke Ola (PiKO)* and the *Healing of the Canoe* occurred in fixed, sacred spaces (Donovan et al., 2015; Helm et al., 2017), while the *MICUNAY* intervention is a transitory sacred space (Dickerson et al., 2016). In the *PiKO* substance use prevention program, Native Hawaiian youth learned the traditional cultural practices of working in a loko i`a (fish pond), which is a form of aquaculture in a fixed seaside location (Helm, et al., 2017). Traditional loko i`a are fish ponds known to be historically sacred sites that continue to be preserved and utilized (Helm, et al., 2017). The *Healing of the Canoe* is another substance use curriculum; in this case, intervention participants took an annual canoe journey across the Suquamish and Port Gamble S'klallam tribes (Donovan et al., 2015). The *MICUNAY* program is an alcohol and other drug use intervention with American Indian/Alaska Native populations who have been relocated to urban cities and has created a space for traditional cultural practices to flourish (Dickerson et al., 2016). The *MICUNAY* program is an example of how Indigenous communities may practice their culture in spaces that are not traditionally sacred sites (Dickerson et al., 2016). In this way, through the act of practicing sacred traditions, the space becomes sacred in that moment. Together, these interventions show the importance of cultural connectedness to sacred spaces. For Indigenous populations that have been displaced, the act of making a space sacred is as relevant as being in spaces that are historically sacred.

Modality 4: Indigenous Spirituality

Spirituality was evident in each of the other three modalities: Indigenous Ways of Knowing, Indigenous Cultural Practices, and Place-Based/Sacred Sites. For example, in the *Cartier Equine Assisted Learning (EAL) Program*, the intervention specified the importance of encompassing individuals' spirituality and spiritual functioning through their beliefs, sense of being, and their inner spirit to support a substance

use intervention with First Nations (Adams et al., 2015). In addition, just over half (7/12) of the interventions supported the role of spirituality as integral to understandings of life forms and human interactions. *The James & Bay Communities* project referenced both spiritual and religious beliefs (Danto & Walsh, 2017). Regardless of differing beliefs, the program stressed mutual respect for spiritual discipline, and for reaffirming of unified experiences, connection, and grounding with the land to promote healing for First Nations (Danto & Walsh, 2017). The *Untitled—Thunderchild First Nations* intervention was based on the premises that spirituality, prayer, and cultural events are important aspects for improving mental health, healing, and self-identity with Néhiyawak, Plains Cree People (Graham & Martin, 2016). The *Traditional Living Challenge* described the traditional uses of tobacco in relation to ceremonial practices grounded in spirituality (Dupuis et al., 2014). These examples show that spirituality is embedded within a diversity of aspects of Indigenous culture and is integral to Indigenous conceptions of health.

Discussion

Defining Indigenous Culture-as-Health

A total of 12 peer-reviewed articles met the inclusion criteria for the analysis presented here. Based on the review, Indigenous Culture-as-Health may be defined by these four modalities: 1) Indigenous Ways of Knowing, 2) Indigenous Cultural Practices, 3) Place-Based/Sacred Sites, and 4) Indigenous Spirituality. Indigenous Ways of Knowing refers to intergenerational knowledge transmission guided by Elders and traditional practitioners. Indigenous Ways of Knowing are interconnected with Indigenous Cultural Practices, and a sense of place as sacred, specifically Place-Based/Sacred Sites. Furthermore, these articles described an ontological turn, which refers to privileging Indigenous ways of being. In this case, Indigenous Cultural Practices, rely on active participation in intact, authentic Indigenous practices. Indigenous Cultural Practices are tangible and traditional activities original to the Indigenous population that are integral to the intervention. Place-Based/Sacred Sites are defined as either a fixed physical location or a transitory location in which specific cultural practices occur. Fixed locations generally are of historical and cosmological significance to an Indigenous population, in which its culture is practiced intentionally. Transitory locations refer to sites for cultural practices that are not fixed to a specific location, but in the act of practicing the culture, the space becomes sacred for that moment (e.g., hula). Throughout the articles, Indigenous Spirituality gives meaning and purpose to Indigenous ways of knowing, cultural practices, and places.

The development and dissemination of each of the twelve Indigenous C-as-H programs featured in this literature review primarily were developed through various forms of community-based participatory action research practices (CB/PAR) (Adams et al., 2015; Bassett et al., 2012; Chief et al., 2016; Danto & Walsh, 2017; Dickerson et al., 2016; Donovan et al., 2015; Dupuis et al., 2014; Flicker et al., 2015; Graham & Martin, 2016; Helm et al., 2017; Maskarinec et al., 2015; Schultz et al., 2016). In conducting CB/PAR, Elders, respected cultural practitioners, and

other Indigenous community members guided the processes of identifying relevant cultural assets and did so in a way that allowed the culture to remain intact. From a public health and prevention science standpoint, CB/PAR is essential (Mckinley et al., 2019). Through the wisdom of Elders and respected cultural practitioners, we acknowledge that Indigenous C-as-H is emerging in public health and prevention, and future CB/PAR will develop this concept further. By privileging and perpetuating Indigenous epistemologies, these Indigenizing processes may expand the "tool box of epistemologies"[2] (Martinez et al., 2010, pp. 14) beyond those that favor linear, non-relational, empirical ways of knowing in the evidence-based practices paradigm (Nebelkopf et al., 2011; Rehuher et al., 2008). In this way, CB/PAR, community-defined evidence, and practice-based evidence as guided by Elders, respected cultural practitioners, and other Indigenous community members may be viewed as intentional acts of sovereignty and Indigenous liberation (Cruz, 2003; Kūlana Noiʻi Working Group, 2021).

The Cultural Intervention Continuum–Expanded

The Indigenous Culture-as-Health model presented here expands the prior cultural intervention continuum described by Okamoto and colleagues (2014). This continuum distinguished cultural adaptations, both surface structure and deep structure, from culturally-grounded interventions (Okamoto et al., 2014). A drawback to both adapted and grounded interventions is that the intervention development process risks compromising cultural integrity. Often, intervention development requires the identification and mining of cultural assets originating within a culturally authentic setting for use in other settings that are not necessarily culturally specific (e.g., a school or clinic) or for use by people who are not cultural experts. Although adapted and grounded interventions draw upon Indigenous Ways of Knowing, they often must exclude Indigenous Cultural Practices, especially those that are Place-Based/Sacred Sites that are inextricably and explicitly linked with Indigenous Spirituality. What distinguishes Indigenous C-as-H is that the Indigenous Ways of Knowing are not extracted, but rather are left intact and carried forward through intergenerational knowledge transmission and remain embedded within Indigenous cultural practices and place-based/sacred sites through the healing power of spirituality. These modalities contribute to the notion of cultural rigor referenced by Echo-Hawk (2019), in that they collectively provide a model (Fig. 1) based on Indigenous knowledge systems. This model contributes to jettisoning an overreliance on western empiricism (Martinez et al., 2010) embedded in the evidence-based practices paradigm and serves to embrace practice-based evidence and community driven evidence paradigms (Freisen et al., 2012; Nebelkopf et al., 2011; Rehuher et al., 2008). Therefore, the cultural intervention continuum may expand from cultural grounding to Culture-as-Health (see Fig. 2).

[2] Community-defined evidence can be viewed as a complementary option in a growing tool box of epistemologies and methodologies to define "evidence," especially in diverse communities.

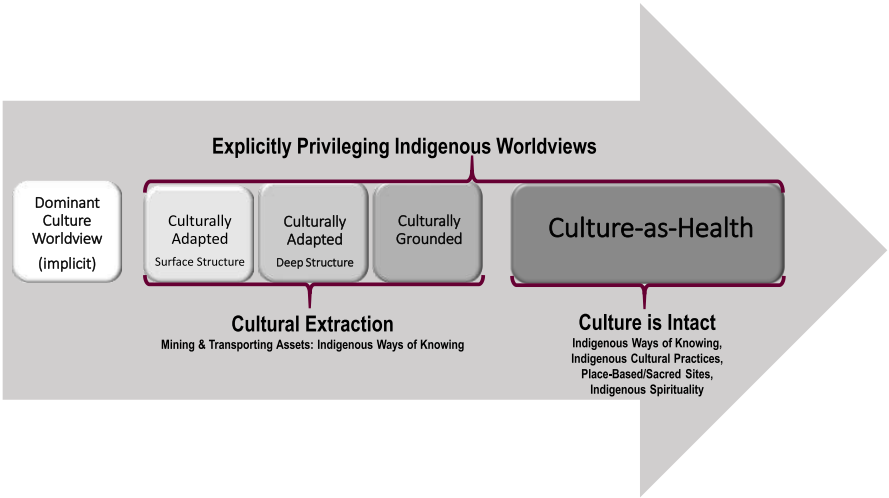

Fig. 2 Cultural Interventions Continuum–Expanded to include Culture-as-Health

Indigenizing Prevention Practice

As the field of prevention moves beyond culturally-grounded to Indigenous Culture-as-Health, intervention design and implementation will privilege and perpetuate Indigenous Ways of Knowing as well as Indigenous Cultural Practices, Place-Based/Sacred Sites and Indigenous Spirituality. There appears to be a growing need and desire amongst some Indigenous populations to reconnect and center Indigenous epistemologies, ontologies, and praxeology (ways of knowing, being and doing) in cultural interventions for improving health and wellness (Echo-Hawk, 2019; Fernandez et al., 2020; Rowan et al., 2014). It should be noted that centering Indigenous culture may constitute a pan-Indigenous perspective that should be viewed carefully, due to fear of reprisal among many Indigenous populations. Fear of reprisal stems from historical and contemporary acts of colonial violence against Indigenous and other historically minoritized communities who oppose injustices which upholds systems of White supremacy. This literature review has important implications for informing cultural prevention development that targets various health disparities by incorporating the four modalities in the decolonizing, Indigenizing, resiliency, and sovereignty processes. These intervention studies often employ decolonizing methodologies or Indigenizing methodologies that sustain Indigenous sovereignty through intentional acts of self-determination (Smith, 1999; Tuck & Yang, 2012).

Furthermore, in light of renewed national acknowledgment of institutionalized racism and its negative health consequences that are disproportionately impacting Black, Indigenous, and People of Color (CDC, 2021), prevention practices must include strategies that privilege a range of world views. The prevailing narrative in public health and prevention sciences regarding equity and social determinants focuses on between-group differences in which the hierarchy privileges whiteness. Solutions based on rectifying group differences relative to a white standard

do not serve Indigenous health. These group-differences solutions are related to an evidence-based practices (EBP) paradigm that favors reductionistic, linear, western empiricism. EBPs have also been critiqued for contributing to the ongoing lateral violence within communities, marginalization, and pan-racialization of diverse communities because it does not honor Indigenous epistemologies.

Instead, many health equity and social justice scholars advocate for the rise of practice-based evidence (PBE) and community-driven evidence (CDE) to ensure that they are grounded in the specific cultures of Indigenous communities (Friesen et al., 2012; Martinez et al., 2010; Nebelkopf et al., 2011; Rehuher et al., 2008). In doing so, a community-driven, practice-based evidence approach embraces a relational worldview and retains wholistic systems thinking in which indicators, outcomes, and successes are community-defined. This relational worldview includes wellness rooted in mind–body-spirit and is grounded in self, family, community, and societal relationships. In addition to this concept, and specifically for Indigenous communities, Indigenous identity and well-being inextricably connect with ancestral lands, and sacred spaces that serve as a setting for community values, cultural heritage, and historical perspectives to thrive (Friesen et al., 2012; Kūlana Noiʻi Working Group, 2021).

Although the health (in)equity narrative, in which group differences are spotlighted, helps to identify problems in systemic racism, it does not suggest culturally rigorous solutions. Instead, cultural rigor in prevention entails shifting the gaze back to dismantling structural racism. For Indigenous health, standards are defined by centuries of ancestral consciousness and the cultural rigor among Indigenous people across generations, in spite of the settler-colonial systems that do not serve them. In other words, Indigenous C-as-H practices contribute to self-determination, sovereignty, and liberation. Incorporating these strategies by embracing practice-based and community-driven evidence, Culture-as-Health approaches may ameliorate other problems related to white supremacy and health. Indigenous C-as-H primarily serves to privilege Indigenous ways of knowing, being, and doing. In settler-colonial systems of oppression and white supremacy, non-Indigenous privileged groups explicitly and implicitly expect the cognitive and emotional labor of Indigenous communities which reinforces differences in power dynamics. By elevating Indigenous C-as-H as a standard priority alongside other approaches on the cultural intervention continuum (Okamoto et al., 2014), epistemic exploitation in which "privileged persons compel marginalized persons to produce an education or explanation about the nature of the oppression they face" (Berenstain, 2016 page 570) becomes a system in which Indigenous communities no longer need to engage.

Indigenizing Prevention Policy

Prevention practices are only as strong as the public health policies that support them. The United Nations Declaration on the Rights of Indigenous Peoples provides for them to maintain and perpetuate their traditional medicine and health practices (Bates et al., 2013; Pulver et al., 2010; UN, 2016; World Health Organization, 2011). Included is the right to develop programs that are culturally fit and safe for their communities

(Bates et al., 2013; Pulver et al., 2010; UN, 2016; World Health Organization, 2011). Therefore, Indigenous C-as-H in prevention may be considered a public health right for Indigenous liberation and sovereignty.

Exercising this right requires collaborative partnerships between Indigenous communities and prevention professionals who specialize in health care policy related to intervention development and dissemination (Fiedeldey-Van Dijk et al., 2017; Rowan et al., 2014; Walls et al., 2017). This is particularly important in mental health and addictions due to well-documented disparities among Indigenous populations (Lewis & Myhra, 2017; Safran et al., 2009). Strong policies that include Culture-as-Health have implications for the preservation of sacred lands for spiritual connectedness that are vital to the health of Indigenous people and may set the foundation for cultural revitalization through cultural practices, including speaking native languages. Privileging Indigenous epistemologies and pedagogies in prevention policy would allow for the further development of models to improve Indigenous health and would facilitate Indigenous sovereignty and self-determination.

Limitations

This review was conducted by a primary researcher in consultation with a secondary researcher. Therefore, our review does not meet all of the rigorous standards of a systematic literature review (Grant & Booth, 2009). Furthermore, the articles for this review were identified in 2018, covering a relatively narrow six-year period from 2012 to 2017. Additional articles likely have been published on intervention studies since then, in which case it is probable that other modalities will be identified in the future to further develop the definition of Culture-as-Health. The article yield for this study was not large due to our emphasis on interventions identified as culturally grounded, to the exclusion of those that are culturally adapted. The rationale to include cultural grounded interventions was to exclude interventions in which culture was described as intact (i.e. Culture-as-Health) as opposed to those that used a cultural assets extraction approach (culturally grounded). The rationale for excluding culturally adapted interventions thought to be pertinent to health is because the interventions from which they were adapted involved extracting and then transporting specific elements of Indigenous culture. In addition, only peer-reviewed publications were included, which limited the range of potentially pertinent public health literature identified. It should be recognized that Indigenous C-as-H may be described in other databases, or through reviews that used more inclusive search strategies, than those used in this review. We also limited our review to English language publications. Finally, the search highlighted Indigenous ways of knowing in prevention, treatment, and intervention. However, additional terms may have been useful, such as culture-as-medicine (Bassett et al., 2012).

Conclusions

Culturally grounded interventions generally incorporate culturally relevant ways of knowing in terms of cultural assets embedded in specific values, beliefs, and world views. These are conceptual assets that often are mined, extracted, and then resettled into a non-Indigenous health intervention setting. These assets may represent either surface or deep structure cultural assets, as initially described by Resnicow and colleagues (2000). The four modalities that emerged from our content analysis expand the continuum of cultural interventions beyond cultural grounding to Indigenous Culture-as-Health. In addition, our project expands on the Rowan et al. (2014) scoping review on Indigenous cultural interventions for substance use by including a broader range of health interventions. Thus our review supports prior findings that Indigenous health practices are vital to well-being, and further suggests that Indigenous Culture-as-Health may be useful in-and-of-itself, not only in combination with western prevention.

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Declarations

Conflict of interest The authors declare they have no conflicts of interest.

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(Asterisks indicate articles in the review)

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