



Unsettling Settler Colonialism in Research: Strategies Centering Native American Experience and Expertise in Responding to Substance Misuse and Co-occurring Sexual Risk-Taking, Alcohol-Exposed Pregnancy, and Suicide Prevention Among Young People

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Abstract

Native American (NA) populations in the USA (i.e., those native to the USA which include Alaska Natives, American Indians, and Native Hawaiians) have confronted unique historical, sociopolitical, and environmental stressors born of settler colonialism. Contexts with persistent social and economic disadvantage are critical determinants of substance misuse and co-occurring sexual risk-taking and suicide outcomes, as well as alcohol exposed pregnancy among NA young people (i.e., adolescents and young adults). Despite intergenerational transmission of resistance and resiliencies, NA young people face continued disparities in substance misuse and co-occurring outcomes when compared to other racial and ethnic groups in the USA. The failure in progress to address these inequities is the result of a complex set of factors; many of which are structural and rooted in settler colonialism. One of these structural factors includes barriers evident in health equity research intended to guide solutions to address these disparities yet involving maintenance of a research status quo that has proven ineffective to developing these solutions. Explicitly or implicitly biased values, perspectives, and practices are deeply rooted in current research design, methodology, analysis, and dissemination and implementation efforts. This status quo has been supported, intentionally and unintentionally, by researchers and research institutions with limited experience or knowledge in the historical, social, and cultural contexts of NA communities. We present a conceptual framework illustrating the impact of settler colonialism on current research methods and opportunities to unsettle its influence. Moreover, our framework illustrates opportunities to resist settler colonialism in research. We then focus on case examples of studies from the Intervention Research to Improve Native American Health program, funded by the NIH, that impact substance use and co-occurring health conditions among NA young people.

Keywords Native American · Alaska Native · American Indian · Native Hawaiians · Young people · Substance misuse · Sexual risk-taking · Alcohol-exposed pregnancy · Suicide · Settler colonialism

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Native American (NA) populations in the USA (i.e., those native to the USA which include Alaska Natives, American Indians, and Native Hawaiians) have confronted unique historical, sociopolitical, and environmental stressors born of settler colonialism (Dunbar-Ortiz, 2014; Thornton, 1987). Settler colonialism is a system of oppression, motivated by imperialism and cultural hegemony that for centuries has attempted to eliminate Indigenous peoples, language, ways of knowing, and culture (Glenn, 2015; Heart, 2003; Kauanui, 2016). This system is both pernicious and persistent and is reflected in pervasive structural disadvantages such as increased rates of neighborhood poverty and poorly resourced school systems that are disproportionately experienced by NA communities when compared to non-Hispanic white populations in the USA (Anastario et al., 2020; Barker, 2012; Brown, 2019). Contexts with persistent social and economic disadvantage are critical determinants of substance misuse and co-occurring sexual risk-taking and suicide outcomes, as well as alcohol-exposed pregnancy (AEP) among NA young people (i.e., adolescents and young adults) (Davis, 2020; Gonzales et al., 2021; Liu & Alameda, 2011; Wu et al., 2020; Yoder, 2022). Further, despite intergenerational transmission of resistance and resilience, the legacy of settler colonialism continues to have an impact on the lives and well-being of NA populations (Heart, 2003; Heart & DeBruyn, 1998; Paradies, 2016; Steinman, 2016). NA young people face disparities in substance misuse, along with co-occurring sexual risk-taking and suicide outcomes, and AEP, when compared to other racial and ethnic groups in the USA (Hanson et al., 2020; Kenyon et al., 2019; Shrestha et al., 2019; Skewes & Blume, 2019; Tingey et al., 2021). And just as these outcomes are themselves tied to settler colonialism, efforts to address these inequities are undermined by this same system (Smith, 2021).

Settler Colonialism Ingrained in the Fabric of Research

Health equity research, intended to guide solutions to address disparities, involve the maintenance of a status quo that has proven to be ineffective. Well-intentioned studies seeking to guide health promotion interventions, programs, and policies for NA young people have been constrained by pervasive settler colonialism ingrained in the fabric of their research methodologies (Simonds & Christopher, 2013). That is, explicitly or implicitly, westernized values, perspectives, and practices are deeply rooted in research design, measurement, analysis, dissemination, and implementation efforts, propagating biases that undermine the rigor of research (Smith, 2021). The status quo has been supported, intentionally and unintentionally, by researchers and research institutions with limited or underutilized

Indigenous experience or knowledge in the historical, social, and cultural contexts of NA communities (Walters et al., 2020).

More recently, however, NA scholars, and non-NA scholars in collaboration with NA communities, have developed a resilience that has led to identifying ways in which to navigate and negotiate the intersection of westernized and NA frameworks in research focused on NA young people (Werito & Belone, 2021). This pluralistic perspective recognizes that different frameworks give rise to contradictory ideas that are to be honored and cannot be reconciled (Smith, 2021). Notably, this stance brings about many contested arguments and challenges. For instance, there has been debate on how to best place equal value on these contrasting ideologies, and if equality is not possible, decisions on whose epistemology should lead are forced (Cech et al., 2017; Paton et al., 2020). Most often, NA epistemologies are considered inferior and invalid when compared to westernized ones (Cech et al., 2017). Westernized epistemologies center individualistic assumptions and value quantifiable and ahistorical methodologies that decontextualize individuals and their communities (Ahenakew, 2016; Kubota, 2020; Vickers, 2020).

Nonetheless, several scholars, both NA and non-NA, whose work focuses on addressing health equity among NA young people, have found ways to resist settler colonialism in research. They have incorporated the social history and cultural knowledge of NA communities (Ivanich et al., 2020), identified relevant interventions (Walters et al., 2020), and developed feasible ways to assess and interpret associated outcomes (Allen et al., 2006). These scholars have expertise in westernized research frameworks gained through their academic curriculum and training and have an understanding that westernized methodologies and designs are more likely to be meritoriously evaluated for promotion in academia, funded by scientific review committees, and publishable in peer reviewed journals. In response, they have leveraged their western training and expertise alongside their deep understanding of NA communities and ways of knowing to produce NA-focused equitable research. Their aim has been to produce research that is considered scientifically rigorous according to the westernized standards of the general field of health research while also displaying a similar level of rigor in its responsiveness to cultural and community contexts and understandings.

NA and non-NA scholars who understand the importance of centering Indigenous views and the strengths of NA communities have produced a substantial body of literature on how best to engage NA communities throughout all aspects of research with NA young people and bring NA perspectives and worldviews to the foreground. This literature describes NA community engagement in developing relevant research questions and conceptual and theoretical frameworks (Dickerson et al., 2020; Stanley et al., 2020; Walters

et al., 2020; Werito & Belone, 2021); study designs that are scientifically rigorous and feasible in NA communities (Walters et al., 2020; Whitesell et al., 2020); utilization of reliable and valid measures (Beals et al., 2003; Bowker et al., 2023; Lowe et al., 2019); application of appropriate analytic approaches (Ivanich et al., 2022; Walter & Andersen, 2016); accurate interpretations of findings (Allen et al., 2006; Rasmus et al., 2019; Zuberi & Bonilla-Silva, 2008); and effective dissemination and implementation efforts (Belone et al., 2020; Gameon & Skewes, 2020; Kerrigan et al., 2021; Rasmus, 2014).

Efforts that move beyond and resist status quo research to meet the health needs of NA communities requires familiarity with this extant literature as a starting point. Of equal importance is a critical understanding and acknowledgment of the underlying structures and processes of status quo research. Moreover, an understanding of the impact of epistemicide—the silencing, eradication, and devaluing of non-western knowledge systems—on these structures is vital to recognizing how settler colonialism eradicates Indigenous knowledge systems (Sandoval et al., 2016). Absent to this understanding, the current worldviews and assumptions that guide contemporary research can limit innovation by perpetuating methodologies inadequate for addressing substance misuse and associated outcomes among NA young people.

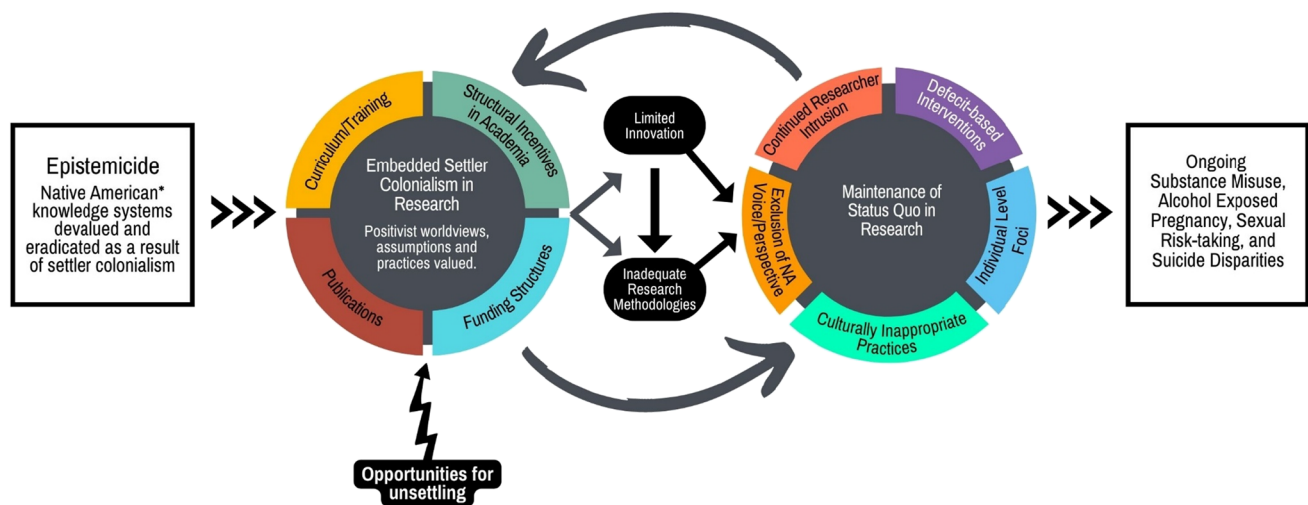
In this paper, we present a conceptual framework that contextualizes the legacy of settler colonialism. The framework describes contemporary processes maintaining status quo research in NA communities and illustrates opportunities to resist status quo research. We then focus, specifically, on strategies to unsettle settler colonialism in funding structures through examples provided from studies funded by the

National Institutes of Health (NIH) Intervention Research to Improve Native American Health (IRINAH) program (Crump et al., 2020).

Settler Colonialism in Research: Structures and Processes That Maintain Status Quo

Conceptual Framework Overview

Our conceptual framework—illustrated by Fig. 1—is an adaptation of a framework created by Golden (2020) to describe embedded biomedical assumptions and practices influencing health equity research and practice (Golden, 2020). We expand the Golden (2020) framework by contextualizing it within social and historical factors that establish and maintain status quo research in NA communities. We modified the framework to show both direct and indirect associations between epistemicide and status quo research. Further, our conceptual framework defines status quo research as an approach that produces research that (a) continues to intrude on Indigenous communities by doing research “on” as opposed to “with” the community; (b) focuses on deficit-based interventions as opposed to leveraging the strengths of the community; (c) applies culturally inappropriate practices that fail to address epistemicide and limits the conception of well-being to westernized perspectives; (d) focuses solely on the individual without adequate consideration of sociopolitical, historical, and cultural factors; and (e) excludes NA voice, experiences, and perspective. Together, this has resulted in frequent obscurations and misinterpretations of behaviors and experiences



*Native American includes American Indian, Alaska Native and Native Hawaiian

Fig. 1 Opportunities to unsettle structures and processes that maintain status quo in substance misuse and associated outcomes among NA young people

within NA communities. This has limited the impact of the research conducted in its ability to create effective solutions to address substance misuse and co-occurring sexual risk-taking, and suicide, as AEP inequities experienced by NA young people.

Epistemicide and Status Quo Research

Underlying status quo research with NA communities originates from epistemicide; that is, forced removal of land from Indigenous people is unequivocally linked to epistemicide (Bang, 2017). Further, a long history of federal policies, beginning with the Indian Removal Act of 1830 and broken treaties, led to forced migration of eastern tribes to the west (Cave, 2003; Stewart, 2007). NA communities were pushed to increasingly shrinking tracts of tribal lands. From the 1950s into the 1970s, many NAs were moved from tribal reservations to urban areas under the Bureau of Indian Affairs Direct Relocation Program, a policy that reduced U.S. government economic support to reservations by assimilating NAs into the urban workforce (Kent-Stoll, 2022). While this policy officially ended with the Self-Determination and Educational Assistance Act of 1975, forced land removal persists (Wilson, 2012). As settler colonialism seized Indigenous land, Indigenous culture, language, and knowledge systems became colonized as well. Soon after forced removal of land commenced, widespread use of boarding schools to forcibly assimilate NA youth began (Piccard, 2013; Zephier Olson & Dombrowski, 2020). NA children were removed from their families and communities to non-Indian residential schools where they were physically and emotionally abused and stripped of their culture, language, and traditional practices (Piccard, 2013). The Indian Adoption Project, enacted in 1958, removed NA children from their families and communities and adopted them out to non-Indian families and communities (Palmiste, 2011). These genocidal practices greatly impacted traditions and Indigenous knowledge systems. Indigenous ways of knowing were relegated to superstition, witchcraft, and deemed inferior to westernized knowledge systems (Kubota, 2020).

The Legacy of Epistemicide

Continued epistemicide of Indigenous knowledge systems is evident in current status quo research by placing high value and esteem on theories, methodologies, and approaches that center western worldviews and exclude Indigenous-centered paradigms. Further, at its core, status quo research and knowledge development are grounded in positivism—a scientific paradigm derived from westernized hegemonic worldviews and assumptions that inhibits the articulation of alternative paradigms (Park et al., 2020). Positivist research assumes the ascendancy of determinism, linear cause and

effect thinking, and reductionism, which narrow the focus of studies to the association among discrete and measurable variables that are often examined out of context (Baum, 1995). Failure to consider historical, sociopolitical, and cultural contexts in research with NA young people limits the ability to reduce substance misuse and associated outcomes, and AEP. Additionally, status quo research is driven by sequential individual contributions, while relational methods are more aligned with many NA community viewpoints (Chilisa et al., 2017; Kovach, 2015; Lavallée, 2009; Simonds & Christopher, 2013; Smith, 2021). In contrast, NA frameworks center teachings and understandings that include spirituality, history, culture, holistic, and relational ways of knowing and being. The pervasiveness of westernized worldviews in research is maintained by a subset of privileged voices who institute research structures that maintain the power and privilege of westernized, non-Indigenous scholars (Smith, 2021). These structures include curriculum and training of researchers, publications, structural incentives in academia, and funding (Golden, 2020). Moreover, funding structures reinforce the maintenance of status quo in curriculum and training, publications, and structural incentives in academia.

Embedded Settler Colonialism in Research

Research to reduce substance misuse and co-occurring sexual risk-taking and suicide outcomes and AEP among NA young people has faced substantial barriers in challenging or innovating westernized assumptions and practices. Funding structures and requirements regularly value westernized scientific paradigms and approaches to research (Bowleg, 2021). Relatedly, the imperative to “publish or perish” requires that researchers adhere to expectations established by editorial boards—which often hold a bias toward positivist methodologies (Cooke et al., 2022). This reality feeds a cycle in which epistemicide and positivism continue to influence the design and methodologies of research, and in result, the status quo is maintained. The pervasiveness of settler colonialism in research leads to limited innovation of methods and continued use of inadequate practices which devalue Indigenous knowledge systems and methodologies. These practices generate multiple obstacles to reducing inequities seen in substance misuse and associated outcomes among NA young people. Findings based on these practices continue to be published and funded—further solidifying the structural incentives related to their use and further embedding them into curricula and researcher training and incentives in academia. Researchers and leaders of academic institutions, editorial boards, and funding agencies have maintained these structures by their overt and inadvertent actions as well as inactions to acknowledge and critique these structures. If these practices continue, and structures

are maintained, progress toward health equity for NA young people will be limited. Therefore, embedded settler colonialism in research must be acknowledged, critiqued, and altered by individuals with the power and privilege to make essential structural changes. Once acknowledged, there are multiple opportunities for those in power and with privilege to unsettle these structures in research exist (Fig. 1).

Opportunities to Unsettle Settler Colonialism in Research

Within academic and research institutions, resistance to settler colonialist structures can include support and mentorship of researchers preferring Indigenous approaches to research that fortifies scientific rigor while honoring cultural relevance and community-supported outcomes (Duran et al., 2019; Dutta, 2007; Wallerstein et al., 2019; Werito & Belone, 2021). Concomitantly, altering promotion review criteria to focus on impact instead of award amounts or sources may improve flexibility of researchers to engage in a variety of scholarly activity. Certainly, impact is a common attribute already identified in many promotion review criteria, but often NIH (or federal equivalent) awards are used as a proxy measure. A reframing or re-orientation of promotion reviewer standards could assist in broadening the valuation and assessment of faculty portfolios. Of course, federal level awards come with substantial funding for most institutions via indirect cost support; the institutional financial model requires injection of federal monies. Incentivizing riskier research may thus require innovation in financial models. For example, increasing indirect rates for particular mechanisms may increase an institution's interest in supporting faculty developing such proposals. Results of grant reviews tend to favor large, generally urban, institutions in making awards. For example, between FY 2014 and FY 2018 among the 268,355 awards distributed by NIH, the vast majority (98.8% in FY 2018) went to grantees in urban areas (Dorwin, 2019). This also reflects the biases produced by historical accumulation of resources, both intellectual and material, a cost paid by smaller or rural institutions which may be more reflective of underserved communities, closer to them, and without an intellectual loss to urban centers. In this case, specifically, Indigenous researchers are compelled to leave their communities to realize the opportunities of urban centers, rather than being able to lead research from within their communities. NIH has been expanding support to such institutions, including support for research infrastructure. While these efforts are important first steps, sustainability is often short-lived; without the capacity of leveraging resources from a large number of grants, such institutions do not have the means to continue support of the infrastructure and have to re-build with each new grant.

Finding data on sustainment of interventions and other products of research, however, is a challenge. For example, a recent evaluation of Native American Research Centers for Health, an NIH initiative established in 2001, included no metrics of research product sustainment (National Institute for General Medical Sciences, 2021).

Additionally, health equity researchers face pressure to obtain funding, especially NIH funding. They are increasingly required to cover some or all their own salaries in this way, and NIH awards are held in particular prestige by promotion review committees (Ginther et al., 2018; Sheridan et al., 2017). Yet, while NIH has recently initiated new funding opportunities in the address of structural racism and disadvantage (Collins et al., 2021), scoring of applications of most funding opportunities still tends to favor western, positivist methodologies, perpetuating an individualistic view of health, divorced from context, history, and Indigenous approaches to research. Further, federal funding for health equity could benefit restructuring of focus. Currently, national level awarding systems use a biomedical model lens to assess the value of research. The names of the institutes within NIH are a strong example: “drug use,” “diabetes and digestive and kidney diseases,” and “allergies and infectious disease.” Moreover, researchers who elevate Indigenous frameworks and innovative methodologies in traditional NIH funding programs compete with those submitting grants aligned with biomedical, western, and colonialist research practices. They are at risk of forfeiting financial support for themselves and the projects they created with NA communities. Thus, a focused transition from a disease-based model to one that encompasses social and structural determinants of health, relational and complex systems, intersectionality, and interconnectedness of health and well-being will go some ways toward supporting innovative research that accounts for historical context and diverse (including non-western) frameworks to find feasible and sustainable solutions.

Settler colonialism in research is pervasive, and as such, we acknowledge that dismantling a system of oppression that is deeply ingrained in the fabric of research, as described above, will require years of arduous effort. Nonetheless, an attainable and progressive approach to begin to resist and unsettle settler colonialism embedded in funding is the Intervention Research to Improve Native American Health program (IRINAH), funded by the NIH (Crump et al., 2020). IRINAH is a funding program that attempts to reconcile the traditional NIH funding structure with NA culture, language, and ways of knowing. Notably, the IRINAH program invites scholars who work with and have expertise in NA populations to serve on the review panels and provides extensive reviewer instructions that center Indigenous-led innovations in research. Such guidance in the review process can assist reviewers in rethinking their research biases by making

explicit review criteria expectations. Moreover, IRINAH funded studies profile resistance through strategies to disrupt the research status quo (Table 1). Studies funded by IRINAH engage the community in study design and analytic approach. These studies contextualize research in social history and cultural knowledge of the NA community in which it is conducted; focus the research on the strengths, resistance, and resiliencies of the NA community; and acknowledge and integrate Indigenous concepts of health. Here, we present examples of IRINAH funded projects that exemplify resistance of settler colonialism in research.

Examples of IRINAH Funded Studies

Thiwáhe Gluwáš'akapi (Sacred Home in Which Family Is Made Strong)

Dr. Nancy Rumbaugh Whitesell (non-NA scholar) and Dr. Alicia Mousseau (NA scholar) worked together with a team of researchers at the University of Colorado and on a Northern Plains Reservation to develop an early substance use prevention program that focuses on engaging family to support youth as they transition into adolescence and face new challenges related to risk behaviors. The Thiwáhe Gluwáš'akapi program was developed in the wake of research documenting early initiation of substance use among youth and community calls to action in response to those findings. Dr. Whitesell and her team worked closely with community advisors to review available evidence-based prevention programs, to select one (the Iowa Strengthening Families Program for Parents and Youth 10–14) that resonated in the community, aligning with kinship values and traditional ways of learning (Hartsook & Molgaard, 2020). Dr. Whitesell's team then obtained grant funding to support cultural adaptation and initial testing. With the award of funding, Dr. Alicia Mousseau joined the faculty team to lead the adaptation, balancing retention of core effective components with integration of key cultural elements. Throughout this process, she lived and worked in the community and drew heavily on community input, as well as on both the scientific literature (e.g., on rigorous adaptation) and Lakota literature (e.g., on kinship roles and responsibilities) (Ivanich et al., 2020). The initial Thiwáhe Gluwáš'akapi program that resulted from this process was tested using a multiphase optimization trial design to determine which adaptation elements were more essential to retain (funded by the National Institutes on Drug Abuse, R01DA035111) (Whitesell et al., 2019). The optimized Thiwáhe Gluwáš'akapi program is now being evaluated in a randomized controlled trial (funded by the National Institute on Drug Abuse, R37DA047926).

Throughout the three linked studies that have (1) laid the foundation for Thiwáhe Gluwáš'akapi (through epidemiological and etiological research), (2) created the

program (through the optimization trial), and (2) now testing the program (in the effectiveness trial), university and community researchers have worked closely together. This partnership has been essential to making Thiwáhe Gluwáš'akapi relevant and responsive to community and cultural context. The community members who now deliver the program were partners in creating it. This research effort provides an example of how sustained partnerships with NA communities can support the rigorous development of preventive interventions that meet the needs of communities and reflect community cultures, thus amplifying the potential for effectiveness.

Native WYSE CHOICES

Native WYSE (Women, Young, Strong, and Empowered) CHOICES (NWC) is an AEP prevention project designed to address the limited culturally appropriate support available to young American Indian and Alaska Native (AIAN) women in urban areas through mobile technology (funded by National Institute of Alcohol Abuse and Alcoholism, R01AA025603) (Tuitt et al., 2023). The project builds on prior work which used intensive community-based participatory research (CBPR) methods with a Midwestern tribal community to adapt CHOICES, an evidence-based brief AEP intervention supported by the CDC, to an in-person program for youth in that community. NWC translated that adaptation to a mobile app for and with urban AIAN young women ages 16–20, with the goal to test the app in a randomized trial across urban areas nationally (population 50,000+). With important exceptions, the urban AIAN population has been largely ignored in health equity research, even though more than 70% of all AIANs live in urban areas. This project has the opportunity to reach young women in these areas where very little or no resources are available to support healthy choices in AEP prevention. The key to our project is our social media engagement across multiple platforms designed to affirm and celebrate urban AIAN young women and their communities. With almost 4000 followers on Instagram alone, building a social media presence has offered us a way both to engage and to give back to this community. Along with social media engagement, we also partner with other urban AIAN-serving organizations to mutually reinforce messages of resilience and strength, and we engage with NA and non-NA scholars and practitioners to guide and give oversight to our work. The project promises expansive reach to AIAN young women to address significant yet preventable public health concerns—AEP and fetal alcohol spectrum disorder; importantly, the project also promises to advance a blueprint for preventive intervention research with urban AIAN populations largely ignored to date.

Table 1 IRINAH funded studies that resist settler colonialism in research

Title	PI	Health/behavior outcome of focus	Population (AI, AN, NH, age)	Summary	Theoretical framing (NA, westernized, integrated framework)	Strategies to resist settler colonialism
Thiwáhe Gluwáꞑ' akapi (sacred home in which family is made strong)	Dr. Nancy Rumbaugh Whitesell	Substance use, suicide	Northern plains AI, ages 10–13	Family-based early substance use prevention program built on a western evidence-based program infused with Indigenous kinship teachings and practices	Integrated western and NA	Integrating cultural teachings into prevention; addressing community priorities; engaging community deeply throughout research; study protocols responsive to community guidance
Native WYSE (women young strong empowered) CHOICES (NWC)	Dr. Carol E. Kaufman, Dr. Michelle Sarche	AEP	Urban AI, AN, ages 16–20	Testing the effectiveness of a culturally adapted mobile health intervention to prevent AEP, using social media to recruit AIAN young women from urban centers across the USA	Integrated western and NA	Affirming, engaging urban AIAN identity, celebrating community
Tribal Reservation Adolescent Connections Study (TRACS)	Dr. Jerreed Ivanich, Dr. Katie Schultz	Substance use, suicide, violence	Northern plains AI, ages 13–16	Understanding peer and multi-generational networks to improve future substance use, suicide, and violence prevention	Integrated western and NA	Expanding the roles of social networks beyond school-based peers to include relations that are culturally relevant. Expanding social network theory to be inclusive of non-Westernized perspectives of relations
Promoting Community Conversations About Research to End Suicide	Dr. Lisa Wexler	Suicide prevention, youth wellness promotion	Remote and rural AN community: mobilizing youth support systems	Locally led series of learning circles to mobilize scientifically informed, community led actions for youth wellness and suicide prevention	NA	Empowers local community members by considering scientific information and personal, cultural, and local knowledge in order to support self-determined personal and collective actions
<i>Nen'Umk'Umbi/EdaHiYeda</i> (“We Are Here Now”)	Dr. Elizabeth Rink	Sexual and reproductive health	AI youth ages 14 to 18	Multilevel intervention to reduce SRH disparities among AI youth	Integrated western and NA	Individual, school, community, systems level intervention, CBPR, cultural teachings, adaptations of curricula for local tribal context, shared decision-making, development of contextually relevant data collection methods

Tribal Reservation Adolescent Connections Study (TRACS)

The Tribal Reservation Adolescent Connections Study (TRACS) was funded through IRINAH in 2021 as an R21 (National Institute on Drug Abuse, R21DA053789). Prior literature has established that American Indian (AI) youths demonstrate early initiation of substance use and subsequently high rates of substance misuse (Stanley et al., 2014; Whitesell et al., 2014). Less established, however, are successful prevention and intervention strategies that capitalize on the strengths of AI culture.

Rich cultural and traditional practices, including collateral kinship networks, make interpersonal relationships particularly vital for AI youth. In the face of geographic isolation and lack of resources, social relations and multi-generational networks (i.e., peer, family, kinship, and community) remain a salient fixture of AI culture and survival in reservation communities. Research in other populations has demonstrated how social networks impact youth risk and resilience (Friedman & Aral, 2001; Goodreau, 2007), but data is lacking on AI adolescent social networks and how networks influence substance use in this population.

TRACS is a mixed-methods social network study aimed at exploring the social connections of AI youth and the possible cultural strengths found in youth networks for substance use prevention and intervention. While some connections may foster increased exposure to substance use and therefore increase the likelihood of use among AI youth, as found in non-AI social network studies (Ali et al., 2014; Valente et al., 2004, 2005), it remains an empirical question if the unique culture and reservation-based lived experience provides unique social connections that buffer risk among AI youth.

To this end, an explanatory sequential mixed method design (QUAN → Qual) will be used to accomplish two specific aims: (1) describe peer, kinship, and community social networks of AI adolescents and (2) explore how social network characteristics predict risk and protective factors for substance use independently and in combination with violence and suicide. The insights from this work will establish the foundation for targeted prevention and intervention efforts that are relationally dependent to reduce substance use, suicide, and exposure to violence.

Promoting Community Conversations About Research to End Suicide (PC CARES)

PC CARES developed out of a collaboration between Dr. Lisa Wexler (non-NA scholar), Evon Peter (NA leader) and long-term collaborations with tribal organizations and research partners in Northwest and Bering Strait Alaska who were determined to learn from each other to find new ways to address the tragedy of youth suicide (National Institute

on Mental Health, R01MH112458). The model grew out of years of collaborative trial, reflection, and revisions and landed on a balance between structure and tailoring that occurs at community and facilitator levels.

Within the process of knowledge dissemination, this balance between order and freedom is an important way in which this community educational model unsettles the status quo (Trout et al., 2018; White et al., 2022). The content of the curriculum is developed in partnership with local community leaders so that it reflects local priorities and understandings (Wexler et al., 2022). The menu of curricular options includes history and context and represents practices from across the prevention spectrum: universal and selective strategies in order to offer actionable, as-local-as-possible, and “bite-size” information to a variety of community members (Wexler et al., 2017). In resulting locally led PC CARES learning circles, the scientific research shared is not meant to “disseminate” or impart specific knowledge and predetermined practices to participants but rather to spark dialog, deepen relationships, and provide opportunities for research-informed mobilization (Wexler et al., 2016). Resisting the oppressive idea of the “banking education,” whereby knowledgeable teachers impart knowledge to the “empty” participants (Freire, 2018), with its accompanying hierarchical assumptions that mirror colonial worldviews; PC CARES invites participants—parents, tribal leaders, community health workers, clinicians, teachers, etc.—to consider suicide research evidence in light of their own understandings, experiences, and relationships in order to translate (or not) the research to action, based on their social role and their lives (White et al., 2022).

Typically, dissemination and implementation research has been done in clinical settings with professionals and is tracked for fidelity—following the procedures outlined—and successful when the predetermined intervention is replicated as originally designed (Rabin et al., 2008). The personal, relational, cultural, and contextual factors that affect the meaning of the intervention are typically either controlled for, identified by researchers as they adapt the intervention, or are ignored. In contrast, PC CARES uplifts local, cultural, personal, and experiential knowledges of the participants and invites them to consider how research-based information intersects and applies to their own understandings. In this way, the model prioritizes the participants’ positional-ity, relationships, and meaning systems as essential to their suicide prevention efforts. The model acknowledges participants’ perspectives about how best to use evidence-based practices in their lives and communities.

NenŪnkUmbi/EdaHiYedo (“We Are Here Now”)

NenŪnkUmbi/EdaHiYedo (“We Are Here Now,” or *NE*) is grounded in a 16-year collaborative research partnership

between the Assiniboine and Sioux Tribes of the Fort Peck Reservation in Northeastern Montana and Montana State University (MSU) (funded by the National Institute on Minority Health and Health Disparities, R01MD01276). The name of our intervention is derived from the Nakoda (*NenŪnkUmbi*) and Dakota (*EdaHiYedo*) words describing traditional coming-of-age ceremonies, when American Indian males and females were believed to be ready for adulthood, having children, being a parent, and taking on specific roles within their family and tribe. NE is a multilevel intervention designed to prevent STIs, HIV, HCV, and teen pregnancy among AI youth ages 14 to 18 years old. NE is based on the Fort Peck Tribal Executive Board's desire to implement a holistic, tribally driven sexual and reproductive health (SRH) intervention for AI youth.

NE is implemented using a stepped wedge design within a community-based participatory research (CBPR) framework. A five-member community advisory board and tribal research team housed at Fort Peck Community College partnered with a MSU-based research team to develop NE's multilevel design which is reflective of traditional Nakoda and Dakota beliefs supporting the interconnectedness of young people with their family, community, culture, and the social and historical spaces in which they live. NE is implemented in a tribal ecological context that promotes connection to community, cultural teachings, the knowledge of elders, family empowerment, and accessibility of cultural applicable SRH clinical services. NE's multiple levels include individual level: adaptation of Native Stand; family level: parent-youth communication and education about SRH; community level: cultural teachings from elders on topics related to SRH; and systems level: coordination of SRH services for AI youth living on the Fort Peck Reservation.

NE decenters western research approaches by grounding the intervention delivery with families, schools, and health care agencies as opposed to focusing solely on the individual as well as utilizing diverse methods of data collection and analysis. For example, surveys are administered to youth and parents to assess the study's outcome variables and implementation efficacy. The intervention fidelity, acceptability, and potential for sustainability is evaluated using a combination of tracking forms to document how the intervention is being implemented, focus groups to ascertain how participants experienced the intervention, and community-centered intervention storytelling to describe the context in which the intervention is taking place in real time. Decision-making regarding all aspects of NE's implementation including intervention delivery, data collection, and data analysis and dissemination of the intervention's findings are shared equitably between the CAB, members of the tribal research team, and the MSU research team through an iterative, open dialog. Our inclusive engagement allows for intentional reflection and

constructive decision-making that privileges tribal beliefs and practices related to raising healthy American Indian youth.

Conclusion

Explicitly or implicitly biased values, perspectives, and practices—born of settler colonialism—are deeply rooted in current research design, methodology, analysis, and dissemination and implementation efforts to reduce substance use and associated sexual risk-taking, AEP, and suicide outcomes among NA young people. There are several opportunities for researchers and leaders of academic institutions, editorial boards, and funding agencies to unsettle settler colonialism in research with NA young people. Here, we focused on the NIH-funded IRINAH program as an attainable approach to unsettle research status quo. The IRINAH program is an attempt to reconcile the traditional NIH funding structure with NA culture, language, and ways of knowing. IRINAH funded projects profile resistance through strategies to unsettle settler colonialism in studies to reduce NA youth substance use and associated outcomes, among other health outcomes in NA populations. For example, the Thiwáhe Gluwáš'akapi project integrated cultural teachings and community priorities into prevention by engaging community deeply throughout all aspects of the research. Native WYSE CHOICES engaged urban AIAN identifying young women in an AEP prevention program that celebrates NA community and culture. TRACS explored expanded roles of social networks beyond school-based peers to include relations that are culturally relevant and examined the potential of these roles to reduce substance use, suicide, and violence among NA youth. TRACS also expanded social network theory to be inclusive of non-Eurocentric perspectives of relations. PC CARES empowered local community members by considering scientific information and personal, cultural, and local knowledge in order to support self-determined personal and collective actions. Last, NE decentered Western research approaches by grounding the intervention delivery with families, schools, and health care agencies as opposed to focusing solely on the individual as well as utilizing diverse methods of data collection and analysis. These IRINAH studies present actionable practices that health equity researchers can emulate and that institutes can encourage through requests for proposals that require these components as evidence of rigor in research in NA communities.

Declarations

Competing Interests The authors declare no competing interests.

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