

Medical Pluralism in Practice: A narrative review of community-based integration of indigenous healing traditions in U.S. healthcare settings

Nancy Akomaniwaa Andoh *

University of North Carolina at Chapel Hill, USA.

Magna Scientia Advanced Research and Reviews, 2026, 17(01), 058-065

Publication history: Received on 02 April 2026; revised on 09 May 2026; accepted on 11 May 2026

Article DOI: <https://doi.org/10.30574/msarr.2026.17.1.0073>

Abstract

Medical pluralism remains a lived reality in many Indigenous communities, where people move between biomedical services and Indigenous healing traditions in ways that reflect culture, spirituality, history, and community-defined understandings of wellness. In U.S. healthcare settings, however, formal integration of Indigenous healing traditions remains limited, uneven, and often constrained by biomedical norms, weak policy recognition, and colonial structures that continue to shape health systems. This narrative review synthesizes the provided literature on community-based integration of Indigenous healing traditions, with a primary focus on implications for U.S. healthcare settings and with comparative lessons drawn from Canada, Australia, and broader Indigenous health scholarship. The review shows that integration works best when it is community-led, grounded in self-determination, supported by Elders and Knowledge Holders, and structured around holistic models of health rather than narrow disease-focused care. The evidence also points to persistent barriers, including racism, biomedical dominance, policy gaps, tokenistic inclusion, and attempts to make Indigenous healing conform to Western standards. The review identifies five convergent themes: the shift from biomedical exclusivity to holistic care; community governance as the foundation of integration; practical integration through ceremonies, traditional foods, cultural supports, and Indigenous practitioners; structural barriers within mainstream institutions; and the emergence of Indigenous frameworks such as the Medicine Wheel and nation-based determinants of health. A conceptual framework of community-governed medical pluralism is proposed to guide more respectful and effective integration in U.S. healthcare settings.

Keywords: Medical pluralism; Indigenous healing; Community-based healthcare; U.S. healthcare; Traditional healing

1. Introduction

Medical pluralism is a term used to refer to the presence and utilization of multiple systems of healing in the same social environment. Practically, it explains the cases when individuals turn to biomedical practitioners and, at the same time, Indigenous healers, rituals, traditional medicine, spirituality, and other community-based healing sources (Singh, 2023; Hirsch, 2011; Hartmann and Gone, 2012; Ouellet et al., 2018). This does not contradict many Indigenous people. It represents a broader concept of wellness whereby body, mind, spirit, family, land, and community are closely interrelated (Carroll et al., 2022; Mack, 2024; Greer and Lemacks, 2024).

This expanded definition of health is particularly significant in Indigenous health, where healing is frequently relational, collective and place-based (Iwama et al., 2009). The physical illness is not typically divided into emotional, cultural, spiritual and social conditions using indigenous approaches. Rather, healing is associated with balance, identity, continuity, kinship, and land and culture connection (Mack, 2024; Greer and Lemacks, 2024). These views contrast significantly with mainstream biomedical systems, which often value diagnosis, clinical care, and institutionalized power more than community knowledge and traditional medicine (Hirsch, 2011; Roher et al., 2025).

* Corresponding author: Nancy Akomaniwaa Andoh

This tension is of particular significance in the United States, as Indigenous health cannot be completely described by traditional health models only. Carroll et al. (2022) insist that the U.S. Indigenous health must be viewed through the prism of a wider range of determinants that extend beyond the traditional social determinants of health. Their model consists of culture, traditional practices and ceremonies, language, Elders, relationships to the land, intergenerational knowledge, sovereignty, and self-determination. This implies that Indigenous healing practices are not merely cultural extensions of healthcare. They belong to the pillars on which health and well-being are created and sustained within Indigenous communities (Carroll et al., 2022).

Nonetheless, there is little formal incorporation of Indigenous healing practices into the U.S. healthcare. According to Hirsch (2011), the United States does not have any obvious official policy frameworks that would sufficiently acknowledge Indigenous healing within the mainstream healthcare framework. Consequently, traditional healing is usually undervalued, understudied and under-guaranteed in institutions (Hirsch, 2011). In the situations when Indigenous healing is recognized, it is frequently perceived as an adjunct to biomedical care instead of a legitimate and significant system of care on its own (Hartmann and Gone, 2012; Allen et al., 2020).

This narrative review explores the discussion and practice of community-based integration of Indigenous healing traditions and how this practice can be applied to the U.S. healthcare context. Since the literature used is not U.S.-only, the review also relies on the comparative evidence of Canada and Australia, where some recent studies give detailed examples of the attempts to integrate Indigenous healing into the primary care and hospital setting (Corso et al., 2022; Rooney et al., 2023; Roher et al., 2025; Mack, 2024).

To be more specific, the chosen literature on medical pluralism, Indigenous health, and community-based models of care is synthesized in this review to determine the primary patterns that define the incorporation of Indigenous healing traditions into healthcare settings, with a specific focus on the implications of the same to the United States. The review explores the ways in which the literature contextualizes the concept of holistic Indigenous conceptualizations of wellness, the importance of community governance and self-determination, the practical manifestations of integration in the primary care and hospital context, and the structural issues that still restrict meaningful incorporation of Indigenous healing practices. Through these themes, the review will aim to identify the strategies that can facilitate respectful and community-led integration of Indigenous healing in U.S. healthcare contexts and suggest a conceptual framework of community-governed medical pluralism to practice healthcare more culturally grounded and equitably.

The review holds that medical pluralism in American healthcare can only be effective when it is not symbolically included. It needs community-based models of care that acknowledge Indigenous healing as a key to health, well-being, and self-determination.

2. Literature Search Strategy and Inclusion Criteria

In this study, a narrative review method was used to summarize the literature that was available on the subject. The use of a narrative review was justified by the fact that the sources available to it consisted of conceptual papers, rapid scoping reviews, integrative reviews, qualitative studies, and policy-oriented analyses, as opposed to a single body of empirical intervention research. It also overlaps with the domains of public health, primary care, Indigenous health governance, and community wellness, which is why a thematic narrative synthesis is more appropriate than a strictly designed systematic review methodology.

Since the topic of the review is focused on the U.S. healthcare settings, the U.S.-focused literature was utilized to frame the discussion where feasible, particularly, Carroll et al. (2022), Greer and Lemacks (2024), and Hirsch (2011). Meanwhile, comparative studies in Canada and Australia were also incorporated since they provide viable examples of how Indigenous healing traditions are being incorporated in community-based primary care and hospital environments.

Sources were added when they touched on Indigenous conceptualizations of health and wellness, self-determination in healthcare, community-based or hospital-based incorporation of traditional healing, or structural issues at large that influence the acknowledgment of Indigenous healing traditions in mainstream healthcare systems.

The studies offer valuable insights to the U.S. healthcare systems, particularly concerning governance, cultural safety, structural barriers, and community authority (Corso et al., 2022; Rooney et al., 2023; Roher et al., 2025; Mack, 2024).

2.1. Data Analysis

The reviewed and analyzed literature was based on thematic synthesis. Repetitive concepts, practice models, integration strategies, obstacles, and conceptual frameworks were found and categorized into general thematic groups. This iterative process led to the emergence of major themes that define the current discourses on medical pluralism and the community-based incorporation of Indigenous healing traditions into healthcare contexts, particularly in the U.S. healthcare contexts.

2.1.1. Theme 1: From Biomedical Exclusivity to Holistic and Relational Care

One of the themes in the literature is the necessity to transcend narrowly biomedical conceptualizations of health. The indigenous healing systems are always characterized as holistic systems that embrace physical, emotional, mental, spiritual, social, and ecological aspects of well-being in an integrated manner as opposed to being isolated (Mack, 2024; Greer and Lemacks, 2024; Hirsch, 2011). In this perspective, healing does not just concern treatment of the disease. It also concerns the re-establishment of equilibrium in the individual and in association with the family, the community, culture and land.

Mack (2024) highlights that Indigenous conceptualizations of health go much further than the lack of illness and imply social, familial, spiritual, community, and ecological aspects of life. The paper observes that the Traditional Healing is based on a worldview which aims at achieving harmony within the individual as well as between the individual, society and nature. The same preoccupation with balance can be seen in Greer and Lemacks (2024) who introduce the Medicine Wheel as a community health model of Indigenous people in North America. Their discussion states that Western health interventions are usually too fragmented and too abstract, whereas the teachings of the Medicine Wheel provide a more comprehensive and flexible approach based on the Indigenous perspectives on health and well-being.

Carroll et al. (2022) develop this argument by demonstrating that the U.S. Indigenous health has to be interpreted beyond the traditional social determinants of health. Their framework revolves around culture, ceremony, language, Elders, natural resources, resilience, relationality, sovereignty and self-determination. This is important in that it establishes the Indigenous healing traditions on the bases of health itself and not as optional cultural additions. Practically, this implies that healthcare systems that do not consider Indigenous healing are also not considering what are considered as key determinants of health in Indigenous circles.

Another approach that Hirsch (2011) criticizes is the one that concentrates on health services but does not take into account broader political, cultural, and ecological realities. She claims that Indigenous health needs an interdisciplinary and holistic approach that encompasses social, political, economic, educational, and environmental situation. Similarly, Singh (2023) demonstrates that indigenous healing systems tend to remain significant due to being more available, culturally based, and more sensitive to the lived experience of illness and healing as compared to biomedical systems.

Combined, these studies indicate that community-level incorporation of Indigenous healing tradition necessitates a shift in the definition of care as itself by healthcare systems. Cultural activities should not be occasionally added to the normal clinical treatment. The relationality, spirituality, cultural continuity, and collective well-being need to be considered in a broader context of health in order to be meaningfully integrated with biomedical care. This underlies the arguments of having healthcare systems that are able to incorporate more than a single legitimate healing tradition without diminishing Indigenous care to a symbolic addition (Kyoong et al., 2021).

2.1.2. Theme 2: Community Governance and Self-Determination as the Key to Integration.

The second theme that is prevalent in the literature is that integration is best established when it is based on Indigenous community authority. Self-determination is not only introduced as a political value but introduced as a feasible requirement of successful and trusted healthcare integration (Hirsch, 2011; Carroll et al., 2022; Roher et al., 2025).

According to Hirsch (2011), Indigenous nations need to be the source of solutions to most of the Indigenous health issues. The research associates the enhancement of health with self-government, involvement, and Indigenous peoples right to determine the rightful health services and policies. Based on this, health strategies are more acceptable and successful when there is a significant level of control over the way they are designed and implemented by the Indigenous communities. This argument is quite pertinent to the healthcare context of the U.S. where Indigenous healing has frequently been recognized without the institutional safeguard or control of Indigenous groups.

Carroll et al. (2022) support this view and pinpoint self-determination and sovereignty as determining factors of Indigenous health in the U.S. According to their framework, health systems cannot purport to uphold the well-being of

Indigenous people when they do not include Indigenous authority in the administration of care. This implies that community-based decision making is not distinct of health improvement. It belongs to health improvement in itself.

Corso et al. (2022) have a robust rationale as they discovered in their rapid scoping review that collaborative and Indigenous-led approaches were more probable to enable integration of Indigenous healing practices into community-based primary healthcare. They emphasize in their review that community involvement, rituals, customs and care of the elderly are essential. The findings indicate that integration is successful when the healthcare providers collaborate with the communities instead of foisting models upon them.

This is the direct evidence of this problem presented by Roher et al. (2025) in hospital-based Indigenous wellness services. Their analysis concluded that despite the positive outcome of wellness services to link patients with cultural supports, more integration of Indigenous healing remained constrained by policy and governance frameworks and by the influence of racism, colonialism, and biomedical dominance. Their results emphasize that Indigenous communities have to establish how and whether Indigenous healing is introduced into care. In the absence of this, integration will be incomplete and weak.

Mack (2024) also introduces a more practical governance aspect where he demonstrates how an Indigenous-led accreditation framework can be used to safeguard Traditional Healing knowledge, enhance mentorship, and assist in formalizing traditional practitioners without losing control of the community. Her work indicates the idea that sustainable integration relies on systems that uphold Indigenous norms of legitimacy and knowledge transmission and not subjecting healers to a Western and exclusive scheme of certification.

In general, the literature indicates that meaningful medical pluralism is based on community governance. The indigenous healing traditions cannot be respectfully incorporated when the decision by healthcare institutions is the exclusive determinant of what can be considered as a valid healing, who should do it, and in which circumstances it can be present.

2.1.3. Theme 3: Integration in Practice is Relational, Cultural, and Community-Based

The other theme that is apparent in the literature is that integration is most evident in practice in terms of relationships, cultural supports, and day-to-day forms of care. Integration can be achieved, instead, through the involvement of elders, traditional healers, ceremonies, medicines, traditional foods, storytelling, counselling, and community-based healing spaces (Corso et al., 2022; Rooney et al., 2023; Roher et al., 2025).

In community-based primary healthcare, Corso et al. (2022) discovered that strategies of integration often involved elder support, ceremony, traditions, and collaboration between the regulated health professionals and the Indigenous healing practices. It is evident in their review that integration goes beyond co-location of services. It also entails trust, teamwork, cultural relevance, and systems that embrace Indigenous healing to everyday care.

Rooney et al. (2023) give more examples in Australia, where the integration of the First Nations traditional therapies into the Western healthcare involved bush medicine, traditional healers, traditional healing practices, bush tucker, spiritual healing, yarning, and storytelling. Although their research is conducted in non-United States, it is useful in this review since it demonstrates that integration is frequently achieved by culturally relevant and significant practices that render care safer, more accessible, and more acceptable to Indigenous patients.

One of the most vivid illustrations of the way integration may manifest itself in hospital care is presented by Roher et al. (2025). They argue that Indigenous wellness services can establish valuable connections between patients and cultural supports, but they observe that they tend to be insufficient where hospitals have not yet implemented Indigenous healing as the structure of care. They find that visible and material resources, including Indigenous counsellors, patient advocates, traditional foods, ceremony spaces, and organizational dedication to Indigenous healing are important.

Greer and Lemacks (2024) continue discussing this debate into the field of public health by demonstrating how the teachings of the Medicine Wheel can inform lifestyle interventions in a manner that respects spiritual, emotional, physical, and intellectual balance. Their efforts are particularly applicable to community-based care since they imply that healthcare interventions cannot be simplified to individual behaviour change. Family, community and cultural context should also be considered in the healing process.

These studies imply that integration works best when Indigenous healing traditions are not a standalone and occasional add-on to daily care relationships. Community-based medical pluralism is achievable as the cultures and traditional medicines are integrated into the process of providing care, experience, and trust.

2.1.4. Theme 4: Structural Barriers Still Hinder Integration.

Though the literature is in favor of integration, it also indicates significant obstacles that persist in defeating integration. These obstacles are not practical only. These are profoundly structural and associated with racism, colonialism, policy gaps and the perpetuation of biomedical ways of thinking (Hirsch, 2011; Roher et al., 2025; Singh, 2023).

As Hirsch (2011) points out, traditional healing has been underestimated and under-researched in the United States where the Indigenous healing has not been formally recognized as policy. She says that policy guidance to ensure that Indigenous healing practices are accorded the same reverence as Western approach has little guidance. This complicates the issue of integration since traditional healing can be respected by communities but institutionally invisible or unrecognized.

Roher et al. (2025) demonstrates the way these barriers work in reality. Their work revealed that racism, colonialism, and biomedical dominance influenced the structure of hospitals and the possibility of transferring Indigenous healing practices into the hospital services. Indigenous wellness services were not exempt as in cases where they existed, they were impacted by a lack of Indigenous governance, restrictive policies and low institutional priority. Their discussion indicates that integration is not possible when healthcare institutions still consider Indigenous healing as peripheral.

Mack (2024) notes a similar obstacle in the unwillingness of most mainstream providers to appreciate Traditional Healing. She cites issues of resource, training, infrastructure and official appreciation. In the absence of these, the conventional healing services will be susceptible and hard to maintain. Her accreditation framework addresses these challenges directly, in its attempt to establish structured, fair recognition without inoculation of Indigenous knowledge systems.

Rooney et al. (2023) also demonstrate that Western healthcare systems remain unable to establish culturally safe and accessible spaces with the First Nations. Their review attributes the problem of limited integration to the wider inability to decolonize healthcare and the necessity to deal with the damage caused by colonial histories. Even though they are situated in Australia, the organizational challenges they present are very applicable to the U.S. healthcare facilities.

Another warning is provided by Singh (2023), who mentions that Indigenous healing systems are occasionally criticized as uncontrollable and unscientific. Although this criticism might sound impartial, it is usually a part of a broader politics of knowledge where Indigenous healing is evaluated by a set of standards not produced by Indigenous communities. This may breed token inclusion and token exclusion.

Combined, the literature indicates that it will not be possible to achieve integration without healthcare institutions addressing the historical and structural factors that persist in marginalizing Indigenous healing. Without a fundamental change in the hierarchy between biomedical care and Indigenous healing, the technical reforms will not suffice.

2.1.5. Theme 5: Emerging Indigenous Frameworks Offer Direction for U.S. Healthcare Redesign

The last theme presented in the literature is the development of Indigenous conceptual frameworks that provide direction in redesigning healthcare in the future in the United States. These frameworks shift their focus off universal biomedical models and focus on Indigenous determinants of health, relationality, balance, land, and self-determination (Carroll et al., 2022; Greer and Lemacks, 2024; Mack, 2024).

The most powerful U.S.-specific framework in the source set is represented by Carroll et al. (2022). Their model recognizes special determinants of the health of Indigenous people which include culture, language, traditional practices and ceremonies, and natural resources, which can be used in health and healing. It also contains mutual determinants like resilience, collective orientation, Elders, relationality, self-determination, sovereignty and colonization. The significance of this framework is that it provides U.S. healthcare systems with an opportunity to interpret Indigenous healing as a part of health and not as an external or secondary concern.

Another useful model provided by Greer and Lemacks (2024) is the Medicine Wheel. They define it as the Indigenous-based approach to public health that could be used to design more comprehensive interventions among Indigenous

people in North America. Their model is particularly useful since it gives prominence to balance on the spiritual, emotional, physical, and intellectual levels, as well as providing flexibility in tribal-specific teaching and priorities.

Mack (2024) adds a governance and workforce model to her accreditation system of Traditional Healing Practitioners. As in her work, integration is not merely about ideas. It also demands mentorship systems, curriculum development, recognition, evaluation and cross generational knowledge protection systems. In this way, her framework can be used to convert holistic and Indigenous-led principles into an institutional practice.

Corso et al. (2022) and Roher et al. (2025) are also helpful as they demonstrate that meaningful integration requires the existence of Indigenous governance, community collaboration, and care models that introduce traditional healing into primary care and hospital environments in both visible and sustained manners. Their results indicate that the redesign of care based on Indigenous priorities and relationships should be the focus of U.S. healthcare settings not occasional cultural accommodation.

These models are directed towards a future where U.S. healthcare facilities will transition to a place of symbolic acknowledgment of Indigenous healing to more tangible expressions of cooperation, assistance, and collective authority.

2.1.6. Conceptual Integration: A Community-Governed Medical Pluralism Framework

All five themes in the community-governed medical pluralism framework converge on the goal of promoting respectful and meaningful integration of Indigenous healing traditions within U.S. healthcare settings. Holistic Indigenous understandings of wellness provide the foundation for this integration, while community governance and self-determination ensure that Indigenous peoples retain authority over how healing traditions are recognized and practiced. Practical models of integration, including the involvement of Elders, traditional practitioners, ceremonies, and culturally grounded supports, make this integration visible in everyday care. At the same time, addressing structural barriers such as racism, biomedical dominance, and weak policy recognition is necessary for sustaining meaningful change. Together, these elements create a healthcare system in which Indigenous healing is not treated as peripheral, but as a valid and essential part of equitable, culturally grounded, and community-led care. This framework provides a foundation for strengthening medical pluralism in U.S. healthcare in ways that are respectful, inclusive, and responsive to Indigenous realities.

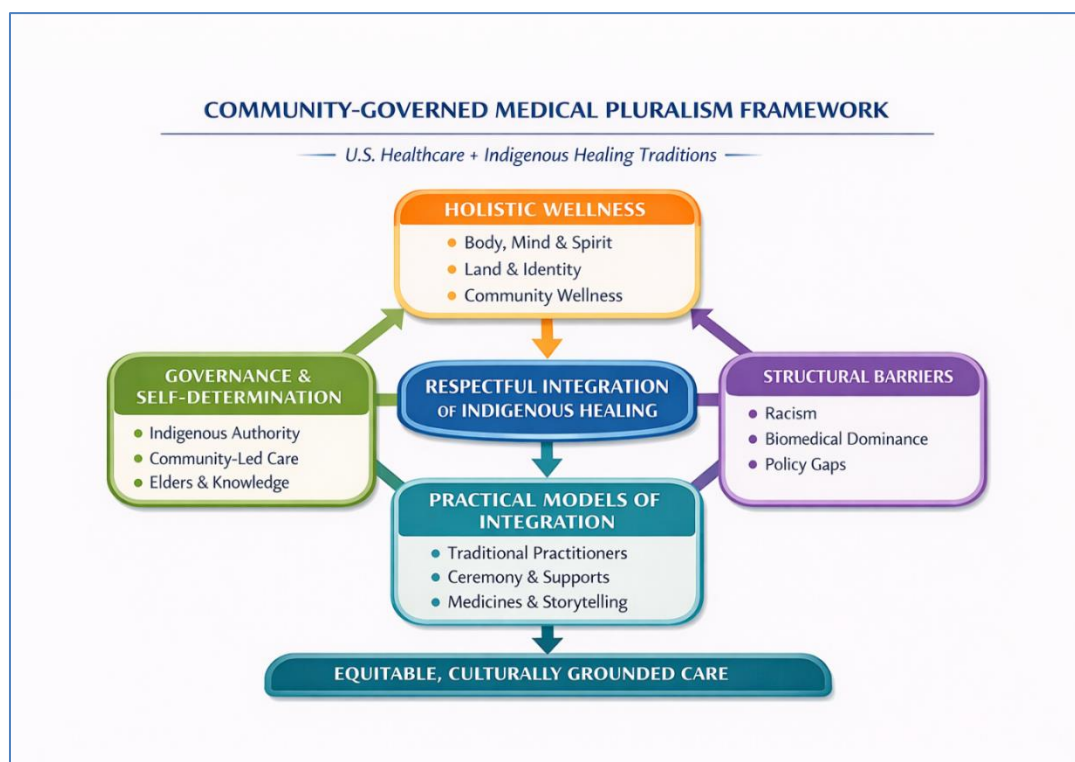


Figure 1 Conceptual Model of Community-Governed Medical Pluralism for Integrating Indigenous Healing Traditions in U.S. Healthcare Settings (Author's construct, 2026)

This integrated framework emphasizes that the meaningful integration of Indigenous healing traditions into U.S. healthcare is not simply a service delivery issue but a broader systemic one. It requires the shared commitment of Indigenous communities, Elders, traditional practitioners, healthcare professionals, policymakers, and institutions to create a respectful, culturally grounded, and community-led system of care in which Indigenous healing is recognized not as a symbolic addition, but as a valid and essential part of equitable healthcare.

3. Conclusion

The literature review demonstrates that medical pluralism is already established in the Indigenous health experience, but there is still an unequal integration of Indigenous healing traditions in mainstream healthcare in a formal and respectful manner. The question in the U.S. healthcare context is not just how to incorporate Indigenous healing but how this can be done without recreating the colonial and biomedical hierarchies that historically marginalized it.

The most powerful message of the reviewed studies is that integration has to be community-based. Elder support, relational models of care, indigenous governance, ceremonies, traditional practitioners, and cultural supports are not extraneous items. They are key to the meaning, trust and effectiveness of integration. Meanwhile, the literature cautions that integration may not be successful where Indigenous healing is viewed as a symbolic, secondary, or imposed modification to Western policy and biomedical norms.

In the case of U.S. healthcare settings, a generic cultural competence approach is not the most useful way to go. It is a paradigm of community-managed medical pluralism based on Indigenous self-determination, nation-based ideas of health and holistic concept of wellness that integrate physical, social, emotional, spiritual, and collective life. When healthcare institutions are ready to go beyond token inclusion to shared authority, respectful recognition, and long-term structural change, the Indigenous healing traditions can be incorporated into the more just, culturally grounded, and effective healthcare systems.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

- [1] Allen, L., Hatala, A., Ijaz, S., Courchene, E. D., & Bushie, E. B. (2020). Indigenous-led health care partnerships in Canada. *Cmaj*, 192(9), E208-E216.
- [2] Carroll, S. R., Suina, M., Jäger, M. B., Black, J., Cornell, S., Gonzales, A. A., ... & Teufel-Shone, N. I. (2022). Reclaiming indigenous health in the US: moving beyond the social determinants of health. *International Journal of Environmental Research and Public Health*, 19(12), 7495.
- [3] Corso, M., DeSouza, A., Brunton, G., Yu, H., Cancelliere, C., Mior, S., ... & Côté, P. (2022). Integrating Indigenous healing practices within collaborative care models in primary healthcare in Canada: a rapid scoping review. *BMJ open*, 12(6), e059323.
- [4] Greer, T., & Lemacks, J. L. (2024). The Medicine Wheel as a public health approach to lifestyle management interventions for Indigenous populations in North America. *Frontiers in Public Health*, 12, 1392517.
- [5] Hartmann, W. E., & Gone, J. P. (2012). Incorporating traditional healing into an urban American Indian health organization: a case study of community member perspectives. *Journal of counseling psychology*, 59(4), 542.
- [6] Hirsch, M. (2011). Self-determination in Indigenous health: a comprehensive perspective. *Fourth World Journal*, 10(2), 1-30.
- [7] Iwama, M., Marshall, M., Marshall, A., & Bartlett, C. (2009). Two-eyed seeing and the language of healing in community-based research. *Canadian Journal of Native Education*, 32(2).
- [8] Kyoon Achan, G., Eni, R., Kinew, K. A., Phillips-Beck, W., Lavoie, J. G., & Katz, A. (2021). The two great healing traditions: Issues, opportunities, and recommendations for an integrated First Nations healthcare system in Canada. *Health Systems & Reform*, 7(1), e1943814.

- [9] Mack, M. (2024, September). Integrating traditional practitioners within primary healthcare teams: Development of an accreditation framework. In *Healthcare Management Forum* (Vol. 37, No. 1_suppl, pp. 7S-13S). Sage CA: Los Angeles, CA: SAGE Publications.
- [10] Ouellet, C., Saïas, T., Sit, V., Lamothe, L., Rapinski, M., Cuerrier, A., & Haddad, P. S. (2018). Access to indigenous and allopathic medicines: A systematic review of barriers and facilitators. *Global Journal of Community Psychology Practice*, 9(2).
- [11] Roher, S. I. G., Andrew, P., Chatwood, S., Fairman, K., Galloway, T., Mashford-Pringle, A., & Gibson, J. L. (2025). Nats' eji (healing): Examining patient and provider experiences with hospital-based Indigenous wellness services in Northwest Territories, Canada. *Canadian Journal of Public Health*, 116(2), 272-283.
- [12] Rooney, E. J., Wilson, R. L., & Johnson, A. (2023). Integration of traditional therapies for first nations people within western healthcare: an integrative review. *Contemporary nurse*, 59(4-5), 294-310.
- [13] Singh, M. (2023). Addressing Intersectionality through Medical Pluralism: Role of Indigenous Healing Systems in Mental Health. *Journal of Applied Consciousness Studies*, 11(2), 91-97.