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NARRATIVE REVIEW

Culturally and Traditionally Appropriate Primary and Secondary Cardiometabolic Disease Prevention in Indigenous Peoples: A Strengths- based Approach

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Abstract

Background: Cardiometabolic diseases are a significant health challenge among First Nations communities and Indigenous peoples, requiring innovative prevention strategies. This narrative review explores culturally and traditionally appropriate primary and secondary prevention methods, in line with the distinct aspirations and values of Indigenous peoples. **Methods:** We conducted a systematic search of electronic databases and gray literature, focusing on work from the past decade, specific to Indigenous communities and peoples. Our inclusion criteria emphasized culturally safe and appropriate prevention strategies. Data extraction and thematic analysis unveiled key themes, practices, and their effectiveness. **Findings:** This review highlights the cultural significance of traditional practices in Indigenous communities. Traditional healing methods, cultural resilience, and the resurgence of Indigenous knowledges underpin these approaches. Moreover, the findings underscore the efficacy of Indigenous-led, culturally designed interventions, encompassing community-based programs, traditional dietary initiatives, physical activity promotion, and culturally sensitive mental health and healing strategies. Gaps persist in the literature, marked by limited rigorous studies, a need to account for geographic and cultural variations, and the imperative of ethical and respectful community engagement. **Recommendations:** The findings advocate for further research, intervention creation, and policy development prioritizing a collaborative and Indigenous-led, community-driven approach. Culturally and traditionally rooted methods are critical for enhancing the health and wellbeing of Indigenous peoples. **Conclusion:** This narrative review offers a comprehensive exploration of the complex interplay between Indigenous ways of being and doing and modern Western healthcare in addressing cardiometabolic disease in Indigenous peoples. It underscores the significance of preserving traditional practices and engaging communities in ways that respect autonomy and values. **Health & Fitness Journal of Canada 2023;16(1):24-45.**

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Introduction

Cardiometabolic diseases, including cardiovascular diseases and type 2 diabetes, continue to pose significant health challenges within Indigenous communities worldwide (Foulds et al., 2012; Foulds et al., 2013; Kelly et al., 2019; Kmetc et al., 2008; Lai et al., 2019; Tjepkema et al., 2012). These communities, with rich and diverse cultural heritages, are confronted with health disparities (as the result of colonization and its institutions) that necessitate innovative approaches to prevention and management (Lai et al., 2019). In this narrative review, we explore culturally and traditionally appropriate primary and secondary cardiometabolic disease prevention strategies tailored to the unique cultural values, traditions, and practices of Indigenous peoples.

Indigenous communities represent a variety of distinct cultures, languages, and traditions, with their own deeply rooted approaches to health and wellbeing (United Nations, n.d.). Globally, there are an estimated 470 million Indigenous people (United Nations, 2021). In 2021, there were approximately 1.8 million Indigenous people (Inuit, Métis, and First Nations) in Canada representing 5.0% of the total population (Statistics Canada, 2022).

Historically, Indigenous communities have engaged in wholistic healing and wellness practices, acknowledging the inseparable connection between physical, mental, emotional, and spiritual wellbeing (First Nations Health Authority, 2008, 2010, 2014; Miles & Huguenin, 2023). There is also the understanding that health and wellbeing is affected directly by the relationships between family members, community members, and the physical environment (Bredin et al., 2021; First

Nations Health Authority, 2008). Health and wellbeing require living in harmony with the environment and a close connection to the earth (Koithan & Farrell, 2010; Miles & Huguenin, 2023).

In an era of rapidly changing lifestyles, urbanization, and Western medical models, the preservation and reintegration of traditional practices in healthcare have garnered attention as a promising avenue for improving health outcomes (Allen et al., 2020; Lai et al., 2019). The Calls to Action of the Truth and Reconciliation Commission of Canada (2015) highlighted the need to recognize the value of traditional Indigenous healing practices and the demand by Indigenous patients. For instance, TRC Call to Action #22 (Truth and Reconciliation Commission (TRC) of Canada, 2015) states, *“We call upon those who can effect change within the Canadian health care system to recognize the value of Aboriginal healing practices and use them in the treatment of Aboriginal patients in collaboration with Aboriginal healers and Elders where requested by Aboriginal patients.”*

This narrative review is guided by the principle that effective health interventions should not only address the clinical aspects of cardiometabolic diseases, but also embrace the cultural and social context within which these diseases manifest (Mosby & Galloway, 2017; Tobe et al., 2015). Culturally tailored interventions, steeped in respect for tradition and community engagement, have shown the potential to enhance the efficacy, effectiveness, and sustainability of primary and secondary prevention efforts, and health and wellbeing promotion (Lai et al., 2019; Tobe et al., 2015).

Our narrative review encompassed several key objectives. We aimed to:

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- Summarize the current state of knowledge on culturally and traditionally appropriate primary and secondary cardiometabolic disease prevention in Indigenous communities.
- Examine the historical and cultural underpinnings that shape these prevention strategies.
- Evaluate the effectiveness of interventions rooted in traditional Indigenous health and wellbeing practices.
- Identify gaps in the existing literature and propose recommendations for future research and policy development.
- Pay special attention to the ethical considerations and community perspectives surrounding these initiatives, recognizing the significance of Indigenous community guidance, co-creation, and cultural awareness and sensitivity.

From the outset of this review, we recognized the significance of acknowledging and respecting the autonomy and self-determination of Indigenous communities in defining their health and wellness priorities (The First Nations Information Governance Centre, 2018). We emphasize a collaborative, Indigenous-led, community-based approach that underscores the shared commitment to supporting the health and wellbeing of Indigenous peoples building upon their innate wisdom, strengths and aspirations (Warburton & Bredin, 2019, 2021).

By exploring the interface between Indigenous cultural and traditional practices and Western healthcare, this narrative review aspires to contribute to a deeper understanding of how culturally and traditionally appropriate strategies can be fostered to combat cardiometabolic diseases, ultimately leading to healthier

and more resilient Indigenous communities.

In the following sections, we will navigate through the literature, offering insights into the diverse and rich weavings of primary and secondary prevention efforts and the lessons they hold for healthcare professionals, researchers, and policymakers committed to advancing the health and wellbeing of Indigenous communities. We will explore culturally and traditionally appropriate means for reducing the risks for cardiometabolic disease (and other chronic medical conditions) in Indigenous communities. We will examine how the integration of traditional and culturally appropriate Indigenous health and wellness practices may positively affect the health and wellness of the entire community.

Collectively, this narrative review will support a greater understanding and acceptance of traditional Indigenous health and wellness practices. Importantly, this review will take a strengths-based approach building upon the inherent strengths and aspirations of Indigenous peoples, their families, and communities.

Methods

Search Strategy and Data Sources

We conducted a comprehensive search of electronic databases and other relevant sources to identify studies, articles, and reports pertinent to culturally and traditionally appropriate primary and secondary cardiometabolic disease prevention in Indigenous communities. The search was conducted from the inception of each database up to December 30, 2022, and it included the following databases: PubMed, CINAHL, PsycINFO, Indigenous Studies Portal, Embase, Scopus, and Web of Science. Additionally, we searched for gray literature on Indigenous

health using Indigenous Health InfoNet and relevant government and community organization websites.

The search strategy incorporated both keywords and controlled vocabulary terms. Key terms included "First Nations," "Indigenous," "cardiometabolic disease prevention," "culturally appropriate," "traditional practices," and related variants. We applied Boolean operators (AND, OR) to combine these terms appropriately. The search strings were adapted to the syntax of each database to optimize results.

Inclusion and Exclusion Criteria

For this narrative review, we only included peer-reviewed articles published in the last decade that focused on primary and secondary prevention strategies specific to Indigenous communities and/or Indigenous peoples.

Inclusion criteria included:

- Studies and articles published in peer-reviewed journals or gray literature sources.
- Focus on primary and secondary prevention strategies for cardiometabolic diseases.
- Relevance to First Nations or Indigenous communities.
- Consideration of culturally and traditionally appropriate interventions or practices.
- Articles published in the English language.
- Literature published within the last decade, from December 30, 2012, to December 30, 2022.

Exclusion criteria included:

- Studies unrelated to cardiometabolic disease prevention or cultural considerations.

- Research not specific to First Nations or Indigenous communities.
- Articles not available in English.
- Articles published before December 30, 2012, or after December 30, 2022.

Data Extraction and Synthesis

Two independent reviewers conducted data extraction, and any discrepancies were resolved through discussion and consensus. Information extracted included the publication year, author(s), study design, population characteristics, intervention details, cultural practices, and key findings. The extracted data was organized in a structured manner for subsequent thematic analysis.

Thematic Analysis and Narrative Synthesis

Thematic analysis was applied to the extracted data to identify recurring themes and patterns. Themes were organized to provide a comprehensive understanding of culturally appropriate primary and secondary cardiometabolic disease prevention strategies in First Nations or Indigenous communities. Historical context, cultural significance, and intervention effectiveness were considered, and the narrative was constructed accordingly.

Critical Appraisal

The quality of included studies was assessed, with a focus on research design, methodology, and potential sources of bias. The narrative review acknowledges limitations and biases present in the literature, particularly concerning cultural sensitivity and ethical considerations.

Gaps and Recommendations

Gaps in the existing literature were identified allowing for the creation of

recommendations for future research areas. This included generating recommendations for improving culturally appropriate primary and secondary prevention strategies.

Ethical Considerations

Throughout the review process, ethical and culturally safe and appropriate considerations were paramount (Hayward et al., 2021). We recognized the importance of respecting the autonomy and values of Indigenous communities and ensured that the selected literature adhered to ethical standards (such as those established by the First Nations Principles of Ownership, Control, Access, and Possession (OCAP®) (The First Nations Information Governance Centre, 2018) and the teachings of the four R's — respect, relevance, reciprocity, responsibility (Kirkness & Barnhardt, 2001).

Key Thematic Findings

Historical and Cultural Significance of Traditional Practices

The examination of culturally and traditionally appropriate primary and secondary cardiometabolic disease prevention strategies in Indigenous communities revealed the profound historical and cultural significance of traditional practices (First Nations Health Authority, 2010). Indigenous communities draw upon centuries of wisdom, passing down knowledge from generation to generation (United Nations, 2019). Traditional practices are deeply rooted in Indigenous cultures (United Nations, 2019), emphasizing holistic approaches to health and wellbeing (Miles & Huguenin, 2023). Traditional teachings are often transferred through stories, songs, ceremonies, and the engagement with the

territory and nature (Brant Castellano, 2004).

Traditional Healing Practices: Indigenous communities have a rich tradition of holistic healing practices that encompass physical, mental, emotional, and spiritual aspects of health and wellbeing (First Nations Health Authority, 2008, 2010; Lai et al., 2019). These practices often involve traditional medicines, ceremonies, and rituals that promote balance and harmony within individuals and communities (Koithan & Farrell, 2010).

A central theme throughout the Indigenous-led research was the need to move away from deficits-based messaging relating to chronic disease management to more strengths-based messaging related to holistic wellbeing (Ryder et al., 2023; Warburton & Bredin, 2019, 2021). For instance, leading authorities in Australia have outlined how current Eurocentric biomedical knowledge systems can negatively affect the health of Indigenous peoples. The authors emphasized how deficits-based messaging which often labels Indigenous patients as “non-compliant” is counterproductive to community-driven prevention programs (Ryder et al., 2023).

Wellness from a traditional Indigenous perspective incorporates emotional, physical, spiritual, and mental wellbeing to lead a balanced lifestyle. Many Indigenous communities in Canada regard the Medicine Wheel as a culturally-appropriate model to support holistic balance and healthy living (Bell, 2014; McCormick, 1996).

Traditional Indigenous health and wellness involves balance, respect, and the interconnection to the land and one's language, history, traditions, culture, and

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beliefs. Cultural identity and connection to traditions are integral to maintaining health and wellness from an Indigenous perspective (Bell, 2014; Miles & Huguenin, 2023).

The Medicine Wheel integrates the four tenets of spiritual, emotional, mental, and physical wellbeing (Figure 1). For instance, spiritual wellness reflects ties to cultural and traditional practices that may include prayer, cleansing, local plant based medicines, smudging, sweat lodge, or healing and sharing circles (Howell et al., 2016). Emotional wellness is encouraged by healing and sharing circles as a way to identify and address emotional goals and balance (Howell et al., 2016). Mental wellness may involve the development of traditional knowledge and language, and life-long learning (Howell et al., 2016). Physical wellness may involve harvesting and consuming traditional foods and medicines and participating in traditional or healing activities (Howell et al., 2016).

Figure 2 demonstrates an Infographic that was co-created after sharing circles (Lai et al., 2019). In this process, Indigenous community members and leaders shared their thoughts and

aspirations related to the four components of wholistic wellbeing.

Cultural Continuity and Resilience: Cultural continuity refers to the ongoing transmission of cultural knowledge, traditions, practices, and values from one generation (Auger, 2016). For Indigenous peoples, cultural continuity may involve the preservation and perpetuation of unique cultures, languages, spiritual beliefs, ceremonies, art, and traditional ways of living. It represents the resilience, strengths, and vitality of Indigenous peoples' cultural identity in the face of colonization and contemporary challenges. Cultural continuity is essential for maintaining a strong sense of community cohesion, self-determination, and the overall wellbeing of Indigenous peoples (Auger, 2016). For instance, Indigenous cultural connectedness has been shown to be associated with pro-social behaviours, increased engagement in school and community, and lower rates of substance use among First Nations high school students (Snowshoe et al., 2015). In a review of the literature, Auger (2016) revealed consistent findings of positive

Figure 1: Medicine Wheel.

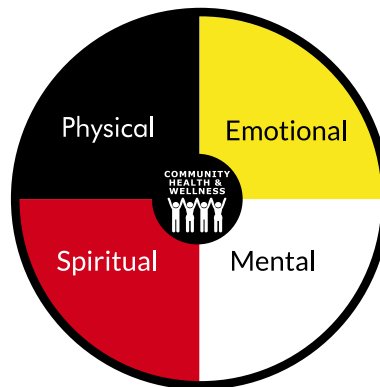


Figure adapted with permission from Indigenous Health & Physical Activity Program (Warburton, 2018).

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health and wellness outcomes being associated with cultural continuity in Indigenous peoples. The most common wellness outcomes were associated with a sense of cultural identity (i.e., being proud of who you are), self-esteem, and positive identity (Auger, 2016).

Ironside and colleagues (2020) have also demonstrated that cultural connectedness is a protective factor of physical activity in First Nations peoples. These authors revealed that First Nations adults who were more physically active exhibited greater spirituality, identity, traditions, exploration, sense of belonging, and overall cultural connectedness (Ironside et al., 2020).

Resilience, in the context of Indigenous peoples, refers to the capacity of

individuals, communities, and cultures to adapt, persist, and thrive in the face of adversity, historical trauma, oppression, discrimination, and ongoing challenges (Auger, 2016; Usher et al., 2021). It involves the ability to maintain a strong sense of identity, connection to land, and cultural practices (such as language reclamation) despite external pressures and disruptions. Indigenous resilience is often rooted in the strength of community and family bonds, traditional knowledge, and a deep connection to the land. It encompasses the ability to navigate systemic inequalities, preserve cultural practices, and address the social, economic, and health disparities that many Indigenous communities face. Indigenous resilience is a dynamic and multifaceted

Figure 2: Aspirations related to wholistic wellness considering physical, mental, emotional, and spiritual wellbeing.

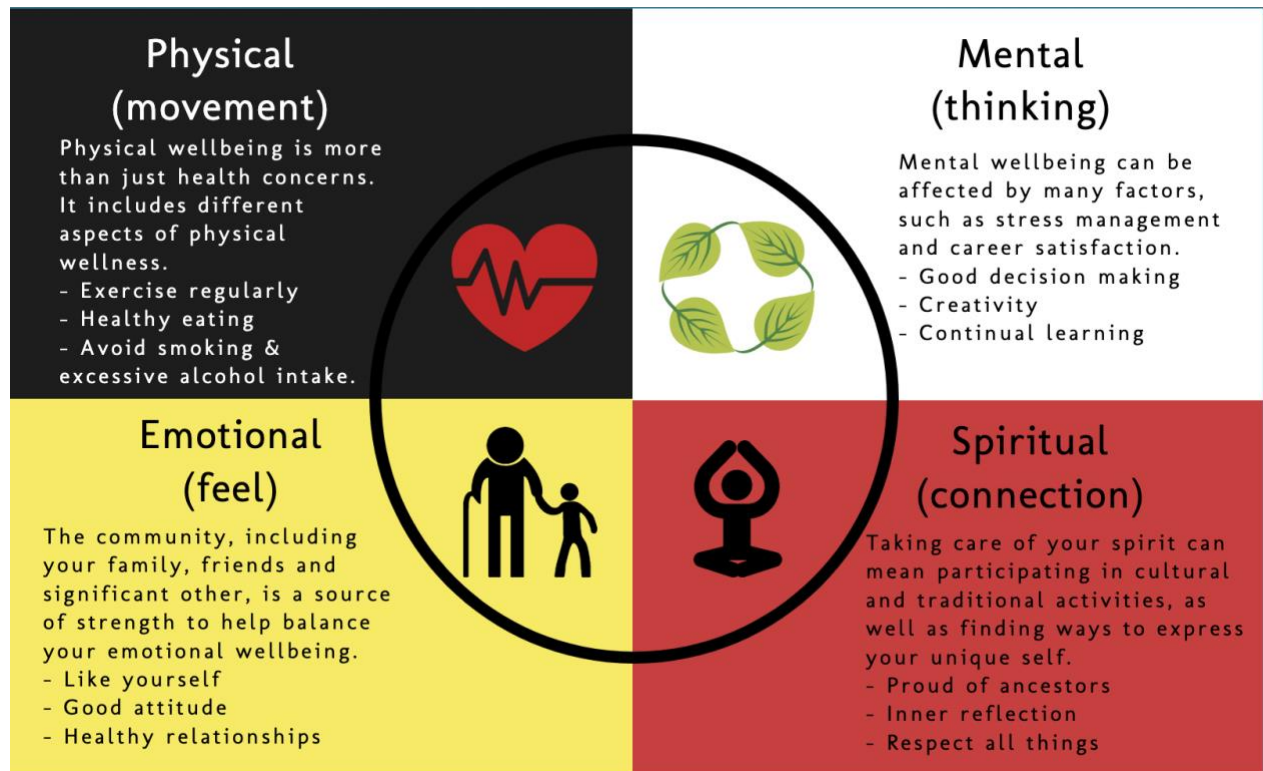


Figure adapted with permission from Indigenous Health & Physical Activity Program (Warburton, 2018). Infographic originally created by Henry Lai and Dr. Rosalin Miles, updated by Dr. Warburton (January 2023).

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concept that acknowledges the traditional wisdom, strength, empowerment, resourcefulness, and self-determination of Indigenous Peoples in sustaining their ways of life amidst a complex and evolving world (Usher et al., 2021).

The continuity and resilience of Indigenous cultures are demonstrated by the preservation and revitalization of traditional health and wholistic wellbeing practices (Lai et al., 2019). Efforts to restore and maintain Indigenous languages, spiritual ceremonies, and cultural traditions have gained momentum, fostering a sense of identity and belonging that contributes to overall health and wellbeing (Foulds et al., 2011; Kahn et al., 2016; Miles & Huguenin, 2023).

Reciprocal and Intergenerational Sharing of Health and Wellness Knowledge between Elders and Youth: A key theme that emerged in this narrative review was the importance of the reciprocal sharing of health and wellness knowledge (Kahn et al., 2016; Kirkness & Barnhardt, 2001). Engaging Elders and youth in the reciprocal sharing of wholistic health and wellness knowledge teaches the value of respecting the relevance of Indigenous ways of knowing (Kahn et al., 2016; Kirkness & Barnhardt, 2001). The following illustration created by Bredin (2021) (Figure 3) outlines the importance of considering the impacts of our decisions on others across seven generations.

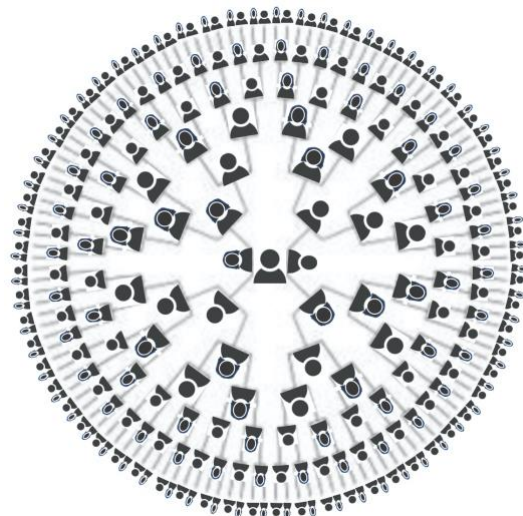
Indigenous Research Knowledges and Methodologies: Our review of the literature demonstrated how important the incorporation and respect of distinct Indigenous research knowledges and methodologies is for effective Indigenous-led and community-based interventions that address the aspirations of Indigenous

peoples (Miles & Huguenin, 2023; Ryder et al., 2023; Tang et al., 2016). Importantly, Indigenous research methodologies are distinct from Western systems of knowledge production (Evans et al., 2020).

As reviewed by Evans and colleagues (2020) Western research has historically often not been a positive experience for Indigenous and Aboriginal peoples throughout the world. Western forms of research have too frequently caused harm to Indigenous peoples owing to inappropriate practices, engagement, consultation, consent, and methodologies (Evans et al., 2020).

Internationally, Indigenous and non-Indigenous ally scholars have advocated for the incorporation of Indigenous ways of understanding within research and healthcare settings. For instance, in Canada, many advocate for the Two-Eyed Seeing (Etuaptmuk) approach that integrates both Indigenous and Western worldviews (Iwama et al., 2009). The Two-Eyed Seeing approach owes its roots to the teachings of Chief Charles Labrador (Acadia First Nation) (Jeffery et al., 2021). Elder Labrador used the metaphor of diverse species of trees living in a forest together, despite their differences, are interconnected and holding hands (Roher

Figure 3: Seven generations and your impact.



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Figure 4: Two-Eyed Seeing approach to health and wellness.

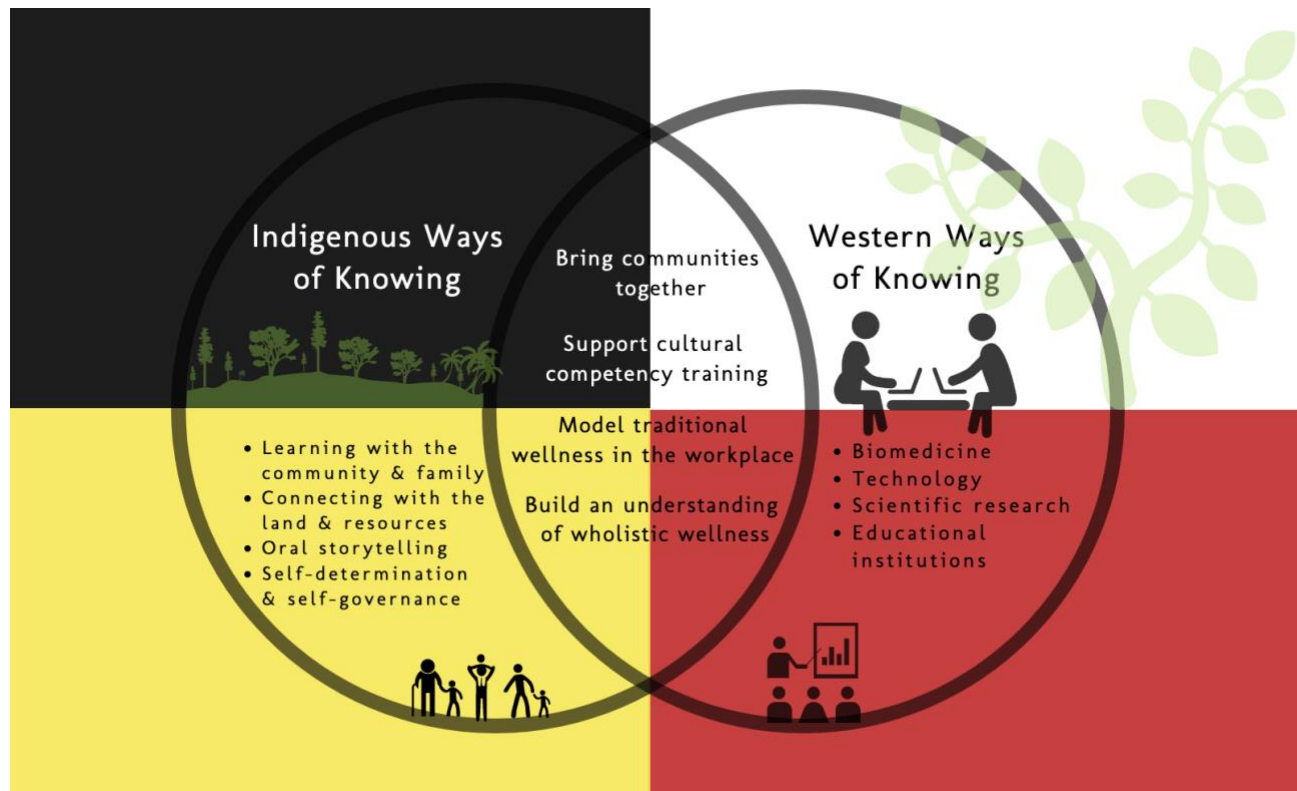


Figure adapted with permission from Indigenous Health & Physical Activity program (Warburton, 2018). Infographic originally created by Henry Lai and Dr. Rosalin Miles, updated by Dr. Warburton (January 2023).

et al., 2021). Mi'kmaw Elders Albert Marshall and Murdena Marshall (Eskasoni First Nation) introduced the concept into Western academia (circa 2004) creating the term "Two-Eyed Seeing."

Utilizing a Two-Eyed Seeing approach fosters the inclusion of traditional and cultural Indigenous ways of knowing and Western knowledge systems by honouring and acknowledging the inherent strengths of both worldviews. Figure 4 illustrates an Infographic created after co-creation sharing circles with Elders and Indigenous community members related to the Two-Eyed Seeing approach.

Our review also established how the "Two-Eyed Seeing" approach can be integrated within participatory action research, community-engaged research, and community-based participatory

research approaches within Indigenous communities.

Indigenous-Led Research Collaboration: Researchers have increasingly advocated for research collaborations that include Indigenous peoples and communities as leaders and equal partners in the research process. As reviewed by Hayward and colleagues (2021) participatory action research, community-engaged research, and community-based participatory research are methodological approaches that have been frequently used to support community-driven and Indigenous-led research (Hayward et al., 2021).

It is often difficult to distinguish the differences between participatory action research, community-engaged research, and community-based participatory research, as different authors and

practitioners may use these terms differently or interchangeably. Collectively, these approaches share a commitment to community involvement in research, but may differ in their depth of participation, power dynamics, and specific goals. All related approaches support the self-determination of Indigenous peoples in the research process (Hayward et al., 2021).

While all three approaches involve collaboration, the depth of community involvement and the distribution of power may differ. For instance, the participatory action research approach tends to emphasize direct community participation in all stages of the research, emphasizing action and change (Blodgett et al., 2011; Pain et al., 2019; Rosier et al., 2015). This is a broad framework that can be applied in various contexts and disciplines (Blodgett et al., 2011; Tetui et al., 2017).

Figure 5 illustrates the iterative and collaborative nature of the participatory action research approach, emphasizing key phases from identifying key issues and aspirations to planning, action steps, observation, and reflection. The circular design signifies the dynamic and interconnected nature of the participatory action research approach process, highlighting the continuous engagement between researchers and the community. This figure captures the participatory and cyclical nature of the participatory action research approach, illustrating how each phase informs the next in an ongoing process of collaboration, learning, and community empowerment.

It is important to highlight that Figure 4 takes a strengths-based approach focusing on the aspirations of Indigenous peoples rather than the deficits/problems. This is distinct from many publications in the field that focus on identifying a “problem” at the start of the process.

Community-engaged research is a more inclusive term that encompasses a range of collaborative research approaches that involve collaboration and partnership between researchers and community members. This approach may involve varying degrees of community involvement.

Community-engaged research aims to address community needs and priorities, and to enhance the relevance and impact of research. An important distinction is that this process may not necessarily be participatory, as the degree of community involvement may vary depending on the research question and design (Organizing Engagement, 2021).

Community-based participatory research is a specific type of community-engaged research that is based on the principles and practices of participatory action research. The community-based participatory research approach specifically focuses on establishing equal partnerships between researchers and communities, often with the goal of addressing health disparities and promoting community wellbeing. It focuses on a specific community context and problem, and it seeks to co-produce knowledge and action with the community members. This approach serves to empower Indigenous peoples.

Researchers often choose the approach that best aligns with the priorities of the communities they work with. These approaches have been seen as effective means to support Indigenous self-determination, Indigenous-led and community-driven research, and knowledge mobilization that respects Indigenous ways of being and doing (Hayward et al., 2021). In addition, community-based research benefits the

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Figure 5: Participatory Action Research Approach.



Figure adapted with permission from Indigenous Health & Physical Activity Program (Warburton, 2018).

most when researchers are Indigenous and are from the subject community.

Our review identified several collaborations that took a participatory action research approach. At the heart of this approach is the active collaboration between researchers and Indigenous community members to address important issues and priorities of the community (Blodgett et al., 2011). This involves the two-way and respectful dialogue between the community and the researchers (Evans et al., 2020; Miller et al., 2014). Indigenous community leaders play primary roles in all aspects of the research from development, engagement, consultation and consent, implementation, and the knowledge mobilization of the findings (Lai et al., 2019; Simpson & Mendenhall, 2022).

When applied within Indigenous communities, participatory action research

becomes a powerful tool for fostering community engagement, self-determination, and addressing community strengths, issues and priorities in a culturally safe and sensitive manner (Evans et al., 2020). Here are some key considerations that were identified through this review for effective participatory action research within Indigenous communities:

- **Cultural Sensitivity:** Participatory action research within Indigenous communities requires a deep understanding and respect for the cultural context. Researchers must acknowledge, be informed, and incorporate Indigenous worldviews, traditions, and values (Blodgett et al., 2011).

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- *Community Involvement:* The heart of participatory action research is community leadership and participation. Indigenous communities should be actively involved in all stages of the research process, from defining research questions to data collection, analysis, and dissemination of results (Lai et al., 2019; Murphy et al., 2021; Simpson & Mendenhall, 2022).
- *Building Trust:* Establishing trust is paramount. Researchers must build relationships with community members, leaders, and Elders. Trust is foundational for effective collaboration and ensures that the research is culturally safe (Lai et al., 2019; Murphy et al., 2021).
- *Reciprocity:* Participatory action research in Indigenous communities should prioritize reciprocity, ensuring that the benefits of research are shared with the community. This may include capacity-building, skill development, or tangible outcomes that address the aspirations of the community (Datta et al., 2015; Lai et al., 2019). Participatory action research emphasizes reciprocity, where researchers honour and learn from knowledge holders and community leaders.
- *Ethical Guidelines:* Adherence to ethical and culturally safety guidelines is crucial. Researchers must prioritize informed consent, confidentiality, and the protection of Indigenous knowledges and ownership of research by community. This involves developing formal research agreements or protocols in collaboration with the community. The participatory action research approach adheres to OCAP® (The First Nations Information Governance Centre, 2018) and the four R's — respect, relevance, reciprocity, responsibility (Kirkness & Barnhardt, 2001).
- *Knowledge Holders:* Knowledge holders (such as Elders or Language Keepers) provide important roles in the co-creation of community-based research using collaborative, participatory, and culturally appropriate processes (Lai et al., 2019). They provide wisdom, cultural insights, and lived experiences for the research process. Recent research has demonstrated that the loss of knowledge holders has led to cultural loss and affected negatively the health and wellbeing of Indigenous communities (Ryder et al., 2023). Therefore, knowledge holders play a vital role in preserving culture, traditions, health, and community wellbeing. Their wisdom is irreplaceable, and their absence echoes through past and future generations.

Effectiveness of Culturally Safe and Appropriate Interventions

Our review of the literature indicated the effectiveness of culturally and traditionally appropriate interventions in primary and secondary cardiometabolic disease prevention among First Nations communities. These interventions draw upon cultural values, community engagement, and traditional practices to promote wholistic health and wellbeing.

Our review revealed that healthy lifestyle behaviours should be promoted considering key traditional knowledge of Indigenous peoples including:

- Traditional (alternative) medicine and healing practices.
- Traditional Indigenous foods originating from local plant or animal resources (obtained by gathering or harvesting).
- Traditional physical activities.

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- Indigenous ways of knowing and stress management.
- Interconnectedness.

Community-Based Programs: Culturally tailored community-based programs, often led by Indigenous community members, have shown positive outcomes in improving health and wellbeing behaviours. These programs emphasize group support, education, and traditional practices.

Diet and Nutrition: Dietary interventions grounded in traditional food and medicine systems have shown promise in preventing cardiometabolic diseases. The reintroduction of traditional foods and medicines, and knowledge about their preparation and nutritional value have led to improved dietary choices. The First Nations Health Authority recommends strongly the incorporation of traditional foods into diet highlighting the “*sacredness of the land is important to respect as we rely on the land to provide nutrition through gardens, fishing, hunting, trapping and*

gathering” (First Nations Health Authority, 2008).

Physical Activity: The health benefits of regular physical activity and exercise are clear; virtually everyone can benefit from becoming more active (Warburton et al., 2006; Warburton & Bredin, 2017; Warburton & Bredin, 2018; Warburton & Bredin, 2019, 2021). An important finding of the current review was the need for culturally safe and appropriate physical activity recommendations that are holistic, with ties to Indigenous knowledges and family and community structures (Lai et al., 2019; Miles & Huguenin, 2023; Tobe et al., 2015). Unfortunately, current national and international physical activity guidelines are from a Western perspective, such as the division of sex and age (Miles & Huguenin, 2023; Pelletier et al., 2017). Physical activity guidelines that were formulated to serve the general Canadian population, have been shown to be ineffective in increasing the physical activity levels of Indigenous populations (Lai et al., 2019; Pelletier et al., 2017).

Table 1. Traditional Indigenous physical activities.

Land-based Activities	Water-based Activities	Cultural Activities
<ul style="list-style-type: none"> • Hunting • Trapping • Gathering and harvesting foods • Indigenous ball games (including Lacrosse) • Bone and Stick Games • Kicking Games • Wrestling Games • Walking and Running • Archery 	<ul style="list-style-type: none"> • Fishing • Canoeing • Kayaking • Swimming • Water Games 	<ul style="list-style-type: none"> • Dancing (Pow Wows) • Medicine Walks • Carving • Weaving • Storytelling • Singing • Drumming • Sharing Circles

Table adapted with permission from Indigenous Health & Physical Activity Program (Warburton, 2018).

Tang et al., (2016) highlight the importance of designing exercise programs that not only address the barriers specific to a community, but also ones that are culturally engaging, in order to increase physical activity levels among Indigenous communities (Tang et al., 2016). Moreover, Tang and colleagues (2016) provided important insight into the ethic of “non-interference” when working with Indigenous peoples as described by Dr. Marlene Brant Castellano (Brant Castellano, 2004) related to the teachings of Dr. Clare Brant (a Mohawk physician who was Canada’s first Indigenous psychiatrist). The ethic of non-interference advocates for limiting argument and advice-giving during normal communication with Indigenous peoples. Advising, instructing, persuading, or ordering is often considered poor behaviour by Indigenous peoples and goes against the 4Rs (Benoit First Nation Mi’kmaw Band, 2022; Kirkness & Barnhardt, 2001; Wark et al., 2019). The ethic of non-interference in North America suggests that an Indigenous person will not interfere with the activities, rights, and privileges of another person (Wark et al., 2019).

This is of importance for researchers and health professionals seeking to work with and offer services to Indigenous peoples (Brant Castellano, 2004). In respect of this ethic, Tang and colleagues (2016) highlighted how “*not prescribing what physical activity meant*” supported the principal of non-interference respecting Indigenous ways of understanding and self-determination. This has particular relevance for non-Indigenous researchers and organizations that attempt to prescribe generic physical activity guidelines to Indigenous peoples.

An informative article by Wark and colleagues (2019) highlights how the ethic of non-interference is a complex and fluid cultural concept that is influenced by context. The authors highlight how persuasion appears to be preferred over direct interference (Wark et al., 2019). Storytelling is frequently used as a method of addressing issues within the community and teaching moral lessons (Wark et al., 2019). Elders play a central role in this process.

Programs that seek to work in a good way with Indigenous peoples need to ensure that Indigenous Elders, knowledge holders, and community leaders are involved in each step of the process.

Culture and traditions are important facilitators of physical activity, health, and wellness for most Indigenous communities (Foulds, 2018; Walters & Simoni, 2002). Many traditional Indigenous activities (Table 1) have large cardiometabolic requirements. For example, hunting can be extremely vigorous (e.g., 9.5 METs or more). Harvesting and gathering food are considered moderate-intensity activities. Canoeing, fishing, and kayaking can be extremely vigorous activities (Ainsworth et al., 2011).

Integrating traditional physical activities (such as dance, hunting, and gathering; Table 1) into modern exercise programs has demonstrated health and wellness benefits (Hedayat et al., 2018). For instance, there is compelling evidence that Indigenous peoples who are more engaged in living traditional lifestyles and performing traditional activities (such as hunting) have better cardiorespiratory fitness relative to individuals who lead a more Western influenced (inactive) lifestyle (Hedayat et al., 2018). These activities not only promote physical fitness, but also reinforce cultural identity. Also,

research has shown that lower cardiovascular fitness is associated with obesity and metabolic syndrome in Indigenous peoples (Hedayat et al., 2018). Findings such as these emphasize the benefits of Indigenous-led and community-based health and wellness programming that integrates traditional Indigenous physical activities.

Mental Health and Wellbeing: Culturally sensitive mental health interventions, including sharing circles and counselling rooted in traditional practices, have been effective in addressing stress, trauma, and mental health issues often associated with cardiometabolic diseases. Sharing circles are also a positive space for sharing aspirations and re-enforcing family and community values that support wholistic health and wellbeing.

Cultural Competency and Healthcare Delivery: A recurring theme in the literature is the importance of culturally competent healthcare delivery. Studies consistently highlight the need for healthcare providers to be culturally sensitive and aware of the unique traditions and beliefs of Indigenous Peoples especially where they are located. Ensuring that healthcare practices are aligned with Indigenous cultural values and practices can improve patient engagement, trust, and health outcomes. Ideally, healthcare providers belong to the local Indigenous community.

Gaps in the Literature and Recommendations

While our review illuminated several successes in culturally and traditionally appropriate cardiometabolic disease prevention, we identified notable gaps in the existing literature:

Limited Rigorous Studies: There is a growing body of literature examining

culturally appropriate primary and secondary cardiometabolic disease prevention in Indigenous peoples. The available evidence primarily consists of observational and quasi-experimental studies. There is a need for further Indigenous-led and community-based research that can measure sustained impacts.

Geographic and Cultural Variation: First Nations communities are diverse, each with unique cultural practices, language, and health and wellness teachings. Future research should acknowledge this diversity and provide tailored strengths-based approaches.

Ethical Engagement: Community involvement, cultural sensitivity, consultation, consent, and ethical considerations should be central to research efforts. Researchers should prioritize community-led and community-driven approaches to ensure respect for autonomy and values.

Policy and Funding Support: Policymakers and funders should recognize the potential of culturally appropriate interventions and allocate resources to support these initiatives. It is crucial to develop policies that facilitate collaboration between healthcare systems and Indigenous communities.

In light of these findings, we recommend a collaborative, Indigenous-led, and community-driven approach to further research, intervention development, and policy formulation. The incorporation of culturally and traditionally appropriate methods into cardiometabolic disease prevention strategies holds significant promise for improving the health and wellbeing of Indigenous communities.

Discussion

In this section, we discuss the findings from the reviewed literature related to culturally and traditionally appropriate primary and secondary cardiometabolic disease prevention in Indigenous Peoples. We aim to address the implications of these findings and explore the broader context of this important issue.

Strengths and Opportunities

Our narrative review identified a series of potential strengths and opportunities related to culturally and traditionally appropriate primary and secondary cardiometabolic disease prevention in Indigenous peoples.

Cultural and Traditional Interventions in Cardiometabolic Disease Prevention: The current review revealed a substantial body of evidence supporting the efficacy of cultural and traditional interventions in the prevention of cardiometabolic diseases among Indigenous peoples. These interventions encompass a wide range of practices, including traditional healing methods, culturally adapted dietary and lifestyle strategies, and community-based health promotion programs. The positive impact of these interventions is evident in several studies, underscoring their relevance in addressing the health disparities experienced by Indigenous communities.

Cultural Resilience: Indigenous communities possess a rich cultural heritage, which can be a source of strength in developing culturally appropriate health and wellness interventions. These traditions provide a strong sense of identity and community connectedness, which can be leveraged for health and wellness promotion.

Traditional Healing Wisdom: Indigenous Peoples have traditional healing practices that have been passed down through

generations. These practices can offer valuable insights into wholistic health and wellness and can be integrated into modern healthcare strategies.

Community Engagement: Indigenous communities often have a strong sense of community, family, and social support systems. This can facilitate community-led health promotion initiatives, leading to increased participation and ownership of health programs. Indigenous community health care providers and researchers should support prevention programs.

Cultural Competency in Healthcare: An increasing recognition of the importance of cultural competency in healthcare has led to efforts to train healthcare professionals in understanding and respecting the cultural diversity of Indigenous patients.

Cultural Adaptation of Healthcare: There is an opportunity to further integrate cultural and traditional practices into mainstream healthcare services. This can enhance patient trust, engagement, and overall health outcomes.

Collaborative Research: Collaborative research efforts between Indigenous communities and academic institutions can provide a platform for conducting culturally relevant research and identifying effective prevention strategies.

Government and NGO Support: Many governments and non-governmental organizations are recognizing the importance of Indigenous health and are investing in programs and initiatives that support culturally appropriate healthcare delivery.

Global Indigenous Health Initiatives: Opportunities exist for sharing successful cultural health interventions across different Indigenous communities and nations, promoting best practices and shared learning.

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Technology and Telehealth: The advancement of technology and telehealth provides an opportunity for Indigenous communities to access healthcare services remotely while still maintaining their cultural practices and traditions.

Advocacy and Policy Change: Increasing awareness of health disparities and the desire for culturally tailored interventions can lead to positive changes in healthcare policies and practices that support Indigenous peoples' health and wellbeing.

Challenges and Barriers

Despite the promising results, it is essential to acknowledge the challenges and barriers that exist in implementing culturally and traditionally appropriate interventions. Some of the challenges identified in the reviewed literature include limited resources, limited Indigenous researchers, inadequate funding, and the need for collaborative efforts between Indigenous communities and healthcare systems. Understanding and addressing these challenges is critical for the successful implementation of culturally tailored prevention strategies.

Broader Implications

The findings from this narrative review have broader implications for healthcare policies, practices, and research. Culturally and traditionally appropriate approaches to cardiometabolic disease prevention can serve as a model for addressing the aspirations of Indigenous peoples related to health and wellness and the health disparities seen in Indigenous communities worldwide. Policymakers and healthcare organizations should consider incorporating these strategies into public health initiatives, with a focus on collaborative partnerships between

Indigenous communities and healthcare providers.

Future Directions

To build on the current body of evidence, further research is needed. Future studies should focus on assessing the long-term effectiveness of culturally tailored interventions, exploring innovative ways to overcome financial and logistical barriers, and identifying best practices for the integration of Indigenous healing methods into conventional healthcare systems that are led by Indigenous healthcare providers. Traditional Indigenous knowledges contribute to the resilience, sustainability, and cultural richness of Indigenous communities.

Conclusions

In conclusion, this narrative review highlights the significance of culturally and traditionally appropriate primary and secondary cardiometabolic disease prevention in Indigenous Peoples. The reviewed literature demonstrates the effectiveness of these interventions in addressing health disparities, improving patient outcomes, and promoting cultural preservation. By acknowledging the strengths, challenges and barriers and emphasizing the importance of cultural competency, healthcare systems and policymakers can work towards providing more equitable and culturally sensitive care for Indigenous communities.

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