“Our Foods Remember Us”

Indigenous Women’s Ancestral Diets, Nutritional Knowledge, and Cardiometabolic Health

By Vishal Patil, PhD, Mansi Patil, PhD, Shilpa Varma, PhD, and Datta Patel, PhD

ABSTRACT

Cardiometabolic non-communicable diseases (NCDs), including cardiovascular disease and type 2 diabetes, disproportionately affect Indigenous communities worldwide, with Indigenous women bearing distinct health and caregiving burdens. This review reframes Indigenous women’s ancestral diets as a form of traditional medicine and a coherent, place-based health system supporting cardiometabolic regulation. Drawing on interdisciplinary literature from India, North America, Oceania, and Latin America, the paper synthesizes evidence on traditional food systems, women’s knowledge practices, and metabolic health outcomes through Indigenous epistemologies and intersectional analysis. The findings demonstrate that ancestral diets—rooted in ecological stewardship, cultural continuity, and women’s leadership—support glucose balance, cardiovascular health, and the regulation of inflammation. Situating Indigenous nutritional knowledge in dialogue with public health and clinical nutrition, the paper argues for ethically grounded, women-led food sovereignty approaches as integral to equitable and sustainable cardiometabolic disease prevention and care.

Keywords: Indigenous women, ancestral diets, cardiometabolic health, traditional food systems, food sovereignty, Indigenous knowledge, non-communicable diseases, intersectionality, metabolic health

Introduction

Cardiometabolic non-communicable diseases (NCDs), including cardiovascular disease, type 2 diabetes, and metabolic syndrome, are a leading cause of morbidity and mortality globally. Among Indigenous populations, the prevalence of these conditions is disproportionately high, particularly for women, due to a complex interplay of historical, social, and environmental factors.[1,2] Indigenous women experience unique vulnerabilities arising from the intersection of gender, indigeneity, socioeconomic status,

[1] R. Devi et al., “Non-Communicable Diseases among Tribal Populations in India: Epidemiology, Social Determinants, and Tailored Public Health Approaches,” Cureus 17, no. 11 (2025): e96899, https://doi.org/10.7759/cureus.96899.

[2] Mark D. Huffman, “Cardiometabolic Health in Indigenous Populations: A Global Perspective,” *Circulation* 141, no. 8 (2020): 639–51.

and limited access to culturally relevant health services. Intersectionality, as a framework, enables an understanding of how overlapping social identities—being women, members of Indigenous communities, and often living in resource-constrained contexts—shape both exposure to cardiometabolic risks and access to effective prevention and care.[3,4]

While conventional biomedical approaches often frame nutrition as a set of individual behaviors or lifestyle choices, Indigenous epistemologies position food as medicine—an embodied, relational, and culturally grounded practice that sustains both physical and collective well-being.[5] For Indigenous women, ancestral dietary knowledge is not merely a set of recipes or nutrient counts but a comprehensive system of health maintenance that integrates ecological knowledge, seasonality, social networks, and ceremonial practices.[6] For example, traditional diets rich in plant-based proteins, wild-caught fish, whole grains, and medicinal plants have been linked to improved glucose regulation, cardiovascular function, and reduced inflammation, demonstrating both metabolic and cardioprotective benefits.[7,8]

This paper argues that Indigenous women's ancestral food knowledge constitutes a coherent, place-based health system that supports cardiometabolic regulation and offers clinically relevant insights for NCD prevention and management. Unlike reductionist biomedical models, which often treat food in isolation from social, spiritual, and ecological contexts, Indigenous nutritional knowledge situates eating practices within community, environment, and intergenerational continuity. By centering women as knowledge keepers and practitioners, this framework illuminates the critical role of Indigenous women in sustaining community health, mediating intergenerational knowledge transmission, and fostering resilience amid rising NCD prevalence.

A critical contribution of this study is its bridging of Indigenous medicine, nutrition science, and public health. While public health interventions for cardiometabolic NCDs often rely on standardized dietary guidelines or pharmaceutical strategies, integrating Indigenous food systems provides culturally relevant pathways that can enhance efficacy

---

[3] Zoya Gomes et al., "Indigenous Women's Perspectives on Heart Health and Well-Being: A Scoping Review," CJC Open 5, no. 1 (2023): 43–53, https://doi.org/10.1016/j.cjco.2022.10.007.

[4] Sahr Wali et al., "Learning from Our Strengths: Exploring Strategies to Support Heart Health in Indigenous Communities," *CJC Open* 6, no. 7 (2024): 849–56, https://doi.org/10.1016/j.cjco.2023.06.005.

[5] Annalijn I. Conklin et al., "Improving Hospital Nutrition Care through 'Indigenous Cultural Safety' of Menu Options: Results of a Cross-Sectional Survey of Indigenous People in Western Canada," *Nutrition in Clinical Practice: Official Publication of the American Society for Parenteral and Enteral Nutrition* 41, no. 1 (2026): 266–77, https://doi.org/10.1002/ncp.11352.

[6] Nicole Redvers et al., "Indigenous Peoples: Traditional Knowledges, Climate Change, and Health," *PLOS Global Public Health* 3, no. 10 (2023): e0002474, https://doi.org/10.1371/journal.pgph.0002474.

Tendaiishe Berejena and Florence Malongane, "African Indigenous Foods That Fight Inflammation May Help People with Diabetes – Research," *The Conversation*, February 12, 2026, https://doi.org/10.64628/aaj.x9nyt4f7u.

Dipayan Sarkar et al., "Food Diversity and Indigenous Food Systems to Combat Diet-Linked Chronic Diseases," *Current Developments in Nutrition* 4, no. Suppl 1 (2020): 3–11, https://doi.org/10.1093/cdn/nzz099.

and acceptability. Furthermore, this work reframes food sovereignty not merely as a political or environmental movement but as a functional health system: women-led practices of cultivation, harvesting, preparation, and distribution of traditional foods directly influence metabolic health outcomes and reinforce community cohesion.[9,10]

To guide this analysis, the following research questions are proposed:

1. How do Indigenous women's ancestral dietary practices support cardiometabolic health?
2. In what ways does women-held nutritional knowledge function as preventive and therapeutic medicine?
3. How can these frameworks inform contemporary cardiometabolic care without epistemic extraction, ensuring that Indigenous knowledge is respected, contextualized, and ethically engaged?

By situating cardiometabolic NCD prevention within the broader context of women's traditional medicine and Indigenous epistemologies, this paper foregrounds a holistic understanding of health that intersects social identity, cultural continuity, and ecological knowledge. Intersectionality is employed not only as an analytical lens but also as a guiding principle for ethical research design, interpretation, and dissemination, acknowledging the multiplicity of factors that shape Indigenous women's health outcomes. Ultimately, this study contributes to a growing recognition that culturally grounded nutrition is both a preventive and therapeutic tool, and that Indigenous women's leadership in sustaining ancestral diets offers vital lessons for equitable, community-centered approaches to cardiometabolic health.

Within Indigenous epistemologies, cardiometabolic health is not understood solely as the regulation of glucose, lipids, or blood pressure, but as a dynamic state of balance among bodily processes, land-based relationships, food practices, and social roles. From this perspective, metabolic disruption is not only a physiological condition but also an ecological and relational imbalance. Framing cardiometabolic regulation through Indigenous knowledge systems therefore expands the concept beyond individual pathology, situating it within women's daily practices of food stewardship, care, and community continuity. This review advances Indigenous health scholarship by theorizing ancestral diets as a clinically relevant Indigenous health system, rather than as cultural adjuncts to biomedical care.

---

[9] Gayathri Delanerolle et al., "Indigenous Farming and Women's Health: A Critical Discussion across Low- and Middle-Income Countries," *Preprints*, April 30, 2025, https://doi.org/10.20944/preprints202504.2564.v1.

Sustainability Directory, "What Role Do Women Play in Indigenous Food Systems?" *Sustainability Directory*, February 7, 2025, https://sustainability-directory.com/question/what-role-do-women-play-in-indigenous-food-systems/.

2. Literature Review: Cardiometabolic Health, Nutrition, and Indigenous Women

2.1 Cardiometabolic NCDs and Social Determinants in Indigenous Contexts

Cardiometabolic non-communicable diseases—principally cardiovascular disease, type 2 diabetes, and metabolic syndrome—are escalating globally and disproportionately affect Indigenous populations.[11] This elevated burden is shaped by intersecting social determinants of health, including limited access to quality health care, economic marginalization, disrupted food systems, and gendered labor roles within communities.[12] Nutrition behaviors, as documented, are profoundly influenced by socioeconomic status, education, built environment, and cultural context, leading in many Indigenous communities to a shift from nutritionally rich traditional diets to high-calorie, processed foods—a transition that correlates with rising cardiometabolic risks.

Patterns of cardiovascular disease and type 2 diabetes among Indigenous populations have been linked to what has been termed "*New World syndrome*," a cluster of metabolic diseases that emerges when traditional diets and physically active lifestyles are replaced by Western diets high in processed carbohydrates, sodium, and fats.[13,14] These shifts are not merely dietary but are deeply rooted in structural inequalities that intersect with gender, as women frequently serve as primary caregivers and food stewards, yet often have reduced access to economic and health resources.[15,16]

2.2 Traditional Diets as Medicine: Who Perspectives and Evidence

The World Health Organization (WHO) recognizes traditional medicine (including Indigenous knowledge and nutrition practices) as a widespread and vital component of health care, used by up to 99% of populations in some countries and encompassing systems that predate biomedicine. These knowledge systems emphasize natural, holistic, and personalized approaches to health that integrate diet, medicinal plants, and ecological relationships. WHO's Global Traditional Medicine Strategy 2025–2034 further supports evidence, respect for cultural diversity, and integration of traditional knowledges into health systems in ways that uphold rights and biodiversity.

Across many Indigenous contexts, food and medicine are inseparable: traditional diets are

[11] Huffman, "Cardiometabolic Health in Indigenous Populations."

[12] Huffman, "Cardiometabolic Health in Indigenous Populations."

[13] Courtney Claussen et al., "Prevalence of Type 2 Diabetes among Global Indigenous Adult Populations: A Systematic Review," *Diabetologia* 69, no. 3 (2026): 582–99, https://doi.org/10.1007/s00125-025-06624-y.

[14] Elena Sofía Lagranja et al., "Indigenous Populations in Transition: An Evaluation of Metabolic Syndrome and Its Associated Factors among the Toba of Northern Argentina," *Annals of Human Biology* 42, no. 1 (2015): 84–90, https://doi.org/10.3109/03014460.2014.932008.

[15] Gomes et al., "Indigenous Women's Perspectives on Heart Health and Well-Being."

[16] Wali et al., "Learning from Our Strengths."

inherently *functional*—not merely sustenance but active contributors to physiological balance and disease prevention. For example, in African contexts, heritage foods such as plantains, cassava, and fermented beverages have shown anti-inflammatory and metabolic benefits in early research, suggesting potential to reduce cardiometabolic markers compared with Western diets. Such findings underline the need for region-specific dietary research that embraces cultural foodways rather than imposing generic nutrition models.

2.3 Indigenous Nutritional Knowledge and Health in India

In India, Indigenous (Adivasi and tribal) food systems provide a powerful case study of ancestral diets as sources of nutrition and potential mediators of metabolic health. Comprehensive reviews show that Indigenous roots, tubers, fruits, and small fish consumed by communities across states like Tamil Nadu, Jharkhand, West Bengal, and the Northeast are rich in essential micronutrients—calcium, iron, zinc, protein, and vitamins C and A. These macronutrient and micronutrient profiles have direct implications for metabolic regulation, immune function, and overall cardiometabolic resilience.

Exploratory studies among tribal communities, such as the Oraon and Ho in Jharkhand, document extensive indigenous food knowledge, with over 100 distinct traditional foods identified, many of which serve both nutritive and medicinal purposes. These foods are embedded in seasonal cycles, ecological access, and community protocols that influence food choice, preparation, and meaning. For example, millets, wild tubers, and forest fruits are not only nutrient-dense but are also consumed in specific cultural contexts that correlate with lower glycemic responses than those of refined-grain diets typical of urban India. This Indigenous food diversity contrasts sharply with contemporary diet patterns marked by high carbohydrate intake—about 62% of calories in the average Indian diet—with rising obesity and diabetes rates linked to refinement and Western influence.

However, it is essential to note that not all traditional diets are uniformly protective, and historical and contemporary social inequities (including caste and gendered labor burdens) can produce nutritional gaps, such as protein deficiency among tribal women and children in some regions. Intersectional analysis reveals how gender, poverty, and marginalization intersect to shape access to nutritious traditional foods even within Indigenous communities.

2.4 Evidence from Global Indigenous Food Interventions

Empirical studies of interventions that promote traditional or native foods among Indigenous peoples provide evidence that these systems can improve nutritional intake and cultural identity—factors which are linked to health and potentially cardiometabolic outcomes. A scoping review found that community-led programs using native foods improved micronutrient intake (vitamin A, calcium, and iron), enhanced nutritional knowledge, and strengthened food security. These participatory approaches not only support metabolic health but

also reinforce cultural continuity and agency in food practices, illustrating how food sovereignty initiatives function as public health strategies.

Examples such as the work of the Oglala Lakota chef and food activist in the United States highlight how revitalizing Indigenous culinary traditions is part of community-driven efforts to address diabetes and other metabolic diseases through ancestral foodways. Elsewhere, Indigenous practices that emphasize low-sodium diets, such as those of the Yanomami, are associated with characteristically low blood pressure among community members, hinting at protective metabolic effects directly tied to traditional food systems.

2.5 Synthesis and Gaps in the Literature

The literature establishes that Indigenous diets are nutrient-rich, culturally embedded, and widely recognized as traditional medicine that can help prevent and mitigate cardiometabolic conditions. WHO documents and global summits reiterate the importance of systematically studying and responsibly integrating traditional medicine knowledge into health systems. Yet, major gaps remain in robust, longitudinal, and participatory research that quantifies cardiometabolic outcomes associated with Indigenous nutritional practices, particularly in ways that respect Indigenous epistemologies and avoid epistemic extraction.

While the literature highlights the nutritional and metabolic strengths of many Indigenous food systems, it also cautions against homogenizing or idealizing "traditional diets." Historical food scarcity, seasonal hunger, gendered labor inequities, and contemporary ecological disruptions mean that ancestral diets have always been adaptive rather than uniformly optimal. A critical review must therefore distinguish between culturally grounded food knowledge as a health resource and the structural conditions that may limit its protective potential.

Intersectional analyses—centrally gendered and culturally situated—are especially scarce, even though women are often the primary custodians of food knowledge and systems. A deeper engagement with the lived realities of Indigenous women, their ecological relationships, and their nutrition practices is therefore critical for both locally grounded and globally relevant public health frameworks.

3. Theoretical Framework

3.1 Indigenous Epistemologies of Nutrition

Indigenous knowledge systems conceptualize food not merely as a source of calories but as an embodied, relational, and ecological practice that sustains physical, spiritual, and social well-being Devi R et al., 2025.[17] From an epistemological perspective, Indigenous diets are deeply contextualized: they emerge from specific land-based ecosystems, seasonal availability, and intergenerational knowledge transmission. These diets are curated to maintain homeostasis and metabolic balance, incorporating foods with known medicinal properties—such as bitter gourd for blood glucose regulation in India's

[17] Devi et al., "Non-Communicable Diseases among Tribal Populations in India."

Adivasi communities or wild fish and plant proteins among North American First Nations communities that promote cardiovascular health.[18,19,20,21]

By framing nutrition as traditional medicine, this perspective challenges reductionist biomedical approaches that often isolate nutrients or focus exclusively on disease outcomes. Instead, Indigenous epistemologies emphasize holistic balance, relationality with land and community, and the co-production of health knowledge with women as primary knowledge holders. This approach foregrounds the intersection of ecological, cultural, and metabolic factors in health, underscoring the systemic role of ancestral diets in regulating cardiometabolic risk. Within Indigenous medical systems, food-based practices—selection, preparation, timing, and sharing—constitute therapeutic interventions equivalent in status to botanical or ceremonial medicine.

3.2 Feminist Indigenous Perspectives on Health and Care

Feminist Indigenous scholarship adds a critical intersectional lens, highlighting how gender, social roles, and colonial histories intersect to shape health outcomes.[22,23] Indigenous women are often the primary custodians of food knowledge, mediating the preparation, distribution, and medicinal use of traditional foods within households and communities. Their expertise is situated at the nexus of cultural continuity, ecological stewardship, and health governance.

Feminist analysis draws attention to the gendered labor embedded in food practices, which has both empowering and constraining dimensions. On the one hand, women's leadership in food systems fosters community well-being and metabolic resilience; on the other hand, it can reflect structural inequities in access to resources, decision-making power, and recognition within formal health and governance systems. Incorporating feminist perspectives ensures that the study not only centers women's knowledge but also interrogates power relations and systemic inequalities that shape access to nutritious traditional foods.

3.3 Intersectionality in Cardiometabolic Nutrition

Intersectionality provides a framework to examine overlapping social identities, including gender, indigeneity, socioeconomic status, and

[18] Sophie Brown, "Protective Effects of Bitter Gourd against Cardiovascular Diseases," *National Journal of Pharmaceutical Sciences* 4, no. 1 (2024): 97–101, https://www.pharmajournal.net/article/103/4-1-19-825.pdf.

[19] Marie Batal et al., "Traditional Foods and Chronic Disease Prevention in Indigenous Populations," *Canadian Journal of Public Health* 109, no. 2 (2018): 185–97.

[20] Lesya Marushka et al., "Seafood Consumption Patterns, Their Nutritional Benefits and Associated Sociodemographic and Lifestyle Factors among First Nations in British Columbia, Canada," *Public Health Nutrition* 21, no. 17 (2018): 3223–36, https://doi.org/10.1017/S136898001800215X.

[21] Sweta Vyas, "Role of Bitter Gourd (Karela) on Blood Sugar Level in Diabetic Patients," *International Journal of Home Science* 8, no. 3 (2022): 333–35, https://doi.org/10.22271/23957476.2022.v8.i3e.2077.

[22] Gomes et al., "Indigenous Women's Perspectives on Heart Health and Well-Being."

[23] Wali et al., "Learning from Our Strengths."

geographic marginalization, and how these intersect to influence exposure to NCD risk factors and access to health-promoting foods.[24,25] For instance, Indigenous women in rural India or remote Canadian First Nations communities may experience the dual burden of high NCD prevalence and limited access to markets, healthcare, or nutrient-rich foods, amplifying their vulnerability to cardiometabolic disorders. Intersectional analysis also reveals how cultural knowledge and ecological stewardship intersect with social identity to shape both resilience and risk, emphasizing the importance of preserving traditional food systems as a public health strategy.

3.4 Conceptual Model: Ancestral Diets and Cardiometabolic Regulation

This study proposes a conceptual model that situates Indigenous women's nutritional knowledge at the center of cardiometabolic health (Figure 1). The model integrates three key dimensions:

1. Traditional Food Systems: Locally sourced, seasonal, and culturally meaningful foods with nutritional and medicinal properties.
2. Community and Gender Roles: Women as custodians of knowledge, transmitters of practice, and leaders in food sovereignty initiatives.
3. Health Outcomes: Cardiometabolic regulation, including glucose homeostasis, lipid balance, blood pressure, and inflammation reduction, enhanced by holistic dietary practices.

[24] Kimberle Crenshaw, "Mapping the Margins: Intersectionality, Identity Politics, and Violence against Women of Color," *Stanford Law Review* 43, no. 6 (1991): 1241–99, https://doi.org/10.2307/1229039.

[25] Olena Hankivsky, *Intersectionality 101* (The Institute for Intersectionality Research & Policy, SFU, 2014), https://womensstudies.colostate.edu/wp-content/uploads/sites/66/2021/06/Intersectionality-101.pdf

Figure 1
Conceptual Model – Indigenous Women's Nutritional Knowledge and Cardiometabolic Health.

The model emphasizes bidirectional influence: ancestral diets shape health outcomes, while health and ecological sustainability feed back into food practices and community knowledge transmission. This framework provides a lens to analyze empirical data in subsequent sections while grounding findings in Indigenous epistemologies, feminist theory, and intersectionality.

3.5 Contribution to Theory

This paper contributes theoretically by reframing Indigenous women's ancestral diets as a health system rather than a cultural determinant of health. By integrating Indigenous epistemologies, feminist theory, and intersectionality, the analysis advances a model in which nutrition functions as preventive and therapeutic medicine embedded within social relations, ecological stewardship, and gendered knowledge transmission. This reframing challenges dominant public health models that treat food as behavioral input and instead positions women-led food systems as sites of health governance, care, and epistemic authority.

4. Methodology

To examine Indigenous women's ancestral dietary knowledge as a coherent and functional health system, this paper adopts a review-based methodological approach grounded in Indigenous epistemologies and intersectional analysis. Rather than generating primary data, the methodology critically synthesizes existing empirical studies, global health reports, and Indigenous-led scholarship to assess how traditional food systems shape cardiometabolic outcomes. Emphasis is placed on ethical engagement with knowledge, avoiding epistemic extraction, and interpreting evidence through culturally situated, relational frameworks that reflect women's roles as knowledge holders and practitioners of food-based medicine.

4.1 Research Approach

This paper employs a systematic narrative review approach to examine the intersection of Indigenous women's nutritional knowledge, traditional food systems, and cardiometabolic health outcomes globally. Guided by Indigenous research methodologies, the review prioritizes relationality, respect for knowledge sovereignty, and the ethical representation of Indigenous knowledge.[26] Intersectionality is integrated as an analytical lens to explore how gender, indigeneity, socioeconomic status, and geographic location shape access to ancestral diets, knowledge transmission, and cardiometabolic health outcomes.[27,28]

Rather than relying solely on biomedical frameworks, this methodology situates literature within a culturally and ecologically grounded context, emphasizing the holistic, relational, and medicinal dimensions of traditional diets as practiced by Indigenous women.

---

[26] Marie-Eve Lefebvre, "Notes de Lecture de Kovach, Margaret (2021). *Indigenous Methodologies: Characteristics, Conversations, and Contexts," Canadian Journal of Higher Education* 52, no. 1 (2022): 139–41, https://doi.org/10.47678/cjhe.v52i1.189541.

[27] Gomes et al., "Indigenous Women's Perspectives on Heart Health and Well-Being."

[28] Wali et al., "Learning from Our Strengths."

4.2 Literature Search Strategy

The review draws on peer-reviewed research, grey literature, and global health reports, including WHO documents on traditional medicine, Indigenous nutrition, and NCDs. Sources were identified using multiple databases, including PubMed, Scopus, Web of Science, and Google Scholar, supplemented by targeted searches of Indigenous-led publications and case studies. Search terms included combinations of:

- "Indigenous women"
- "Traditional diet" OR "ancestral food systems"
- "Cardiometabolic health" OR "diabetes" OR "cardiovascular disease"
- "Food sovereignty"
- "Traditional medicine"

Inclusion criteria were:

1. Focus on Indigenous or tribal populations globally.
2. Discussion of traditional food systems or ancestral diets.
3. Evidence related to cardiometabolic outcomes, including diabetes, cardiovascular disease, or metabolic syndrome.
4. Studies addressing women's roles in knowledge preservation or dietary practices.

Exclusion criteria were:

- Studies limited to non-Indigenous populations.
- Publications without substantive reference to dietary practices or cardiometabolic health.
- Sources lacking peer-reviewed or reputable documentation (except for key WHO or Indigenous-led reports).

4.3 Data Extraction and Synthesis

From the selected literature, information was extracted regarding:

- Population and context (geographic region, community type, gendered roles)
- Dietary practices and food types (plant-based, animal-based, medicinal foods, seasonal variation)
- Health outcomes (biomarkers, clinical indicators, or reported health impacts)
- Cultural and ecological context (rituals, land stewardship, intergenerational transmission)
- Gender and intersectional factors (women's leadership, age, social position, socioeconomic factors)

Synthesis involved a thematic and narrative approach, integrating quantitative findings (e.g., biomarker data from prior studies) with qualitative evidence on knowledge transmission, cultural practices, and food sovereignty initiatives. The review explicitly foregrounds Indigenous epistemologies as an analytical lens, evaluating the literature not only for health outcomes but also for relational, ecological, and cultural significance of diet.

4.4 Intersectionality and Analytical Framework

An intersectional framework guided analysis, highlighting how gender, indigeneity, socioeconomic status, and geographic isolation intersect to influence:

- Access to nutritious traditional foods
- Participation in food knowledge practices
- Cardiometabolic health outcomes

This framework ensures that findings recognize structural inequities, ecological constraints, and social determinants of health, emphasizing that the health benefits of ancestral diets are intertwined with women's roles, cultural continuity, and environmental stewardship. This review treats Indigenous women's nutritional knowledge as authoritative in its own right, not as data to be validated solely through biomedical paradigms.

4.5 Limitations of the Review

- Literature is unevenly distributed geographically, with limited studies from some Indigenous communities.
- Variation in study design and reporting may limit the direct comparability of cardiometabolic outcomes.
- Grey literature and Indigenous-led reports are sometimes less standardized, but they are critical for capturing culturally grounded knowledge.

4.6 Rationale

This methodology aligns with the review's central argument that Indigenous women's nutritional knowledge constitutes a functional health system that supports cardiometabolic health. By integrating Indigenous epistemologies, feminist perspectives, and intersectionality, the review critically evaluates existing evidence while respecting the relational and cultural dimensions of ancestral food systems. The approach allows for both global comparison and context-specific insights, informing future research, clinical practice, and policy frameworks.

4.7 Positionality and Ethical Orientation

This review adopts a reflexive stance that recognizes Indigenous knowledge as authoritative and self-determining, rather than as data to be validated through biomedical hierarchies. The analytical approach is guided by principles of respect, relational accountability, and non-extractive engagement. While drawing on peer-reviewed and institutional sources, the synthesis prioritizes Indigenous-authored scholarship and community-grounded perspectives wherever available, acknowledging ongoing power asymmetries in knowledge production.

5. Findings/Analysis

This section presents a thematic synthesis of the reviewed literature, drawing on evidence from Indigenous communities in India, North America, Oceania, and Latin America. The analysis integrates quantitative findings on cardiometabolic indicators with qualitative insights into women's food knowledge, ecological practices, and community leadership. Intersectionality operates not only as a contextual

factor in these findings but as a structuring force that shapes who benefits from ancestral diets, under what conditions, and with what health effects. Gendered labor, land access, economic marginalization, and ecological change intersect to produce uneven cardiometabolic outcomes—even within communities that retain strong food knowledge systems. An intersectional lens is applied throughout to illuminate how gender, indigeneity, socioeconomic conditions, and geography shape both access to ancestral diets and the observed health effects of those diets.

5.1 Overview: Traditional Diets and Cardiometabolic Health Patterns

The literature consistently shows that Indigenous traditional diets, shaped by long-standing ecological relationships and cultural practices, often contrast sharply with Westernized food patterns tied to elevated cardiometabolic risk. Across diverse regions—South Asia (especially India), North America, Oceania, and parts of Africa and Latin America—ancestral dietary systems are associated with lower incidence of type 2 diabetes, improved lipid profiles, balanced glycemic responses, and enhanced metabolic resilience compared with industrialized diets dominated by processed carbohydrates and fats.[29,30,31,32,33] These findings are important not only for their clinical implications but also for what they reveal about women's central role in maintaining health-giving food practices.

5.2 India: Tribal Diets, Nutritional Diversity, and Metabolic Balance

In India, the dietary practices of tribal (Adivasi) communities provide rich evidence of ancestral nutrition linked to metabolic health. Comprehensive ethnobotanical studies among communities such as the Oraon, Ho, Santhal, and Gond document diets featuring wild tubers, millets, forest fruits, leafy greens, minor millets (e.g., finger millet, kodo millet), legumes, and small indigenous fish. These traditional foods are nutrient-dense, often high in fiber, micronutrients (iron, calcium, zinc), and complex carbohydrates—all factors

[29] Batal et al., "Traditional Foods and Chronic Disease Prevention."

[30] Linda M. Koh, "Culturally Tailoring Plant-Based Nutrition Interventions for Hispanic/Latino Adults at Risk for or with Type 2 Diabetes: An Integrative Review," *Hispanic Health Care International: The Official Journal of the National Association of Hispanic Nurses* 21, no. 2 (2023): 89–103, https://doi.org/10.1177/15404153221085696.

[31] Lemyra DeBruyn et al., "Integrating Culture and History to Promote Health and Help Prevent Type 2 Diabetes in American Indian/Alaska Native Communities: Traditional Foods Have Become a Way to Talk about Health," *Preventing Chronic Disease* 17 (2020): E12, https://doi.org/10.5888/pcd17.190213.

[32] Abrania Marrero and Josiemer Mattei, "Reclaiming Traditional, Plant-Based, Climate-Resilient Food Systems in Small Islands," *The Lancet. Planetary Health* 6, no. 2 (2022): e171–79, https://doi.org/10.1016/S2542-5196(21)00322-3.

[33] Godfrey S. Temba et al., "Immune and Metabolic Effects of African Heritage Diets versus Western Diets in Men: A Randomized Controlled Trial," *Nature Medicine* 31, no. 5 (2025): 1698–1711, https://doi.org/10.1038/s41591-025-03602-0.

associated with improved glycemic control and cardiovascular function.[34,35,36,37,38]

For example, millets—integral to many tribal diets—have low glycemic indices and promote greater insulin sensitivity than refined rice and wheat.[39] Forest fruits such as aonla (Indian gooseberry) and jamun (Syzygium cumini) have been documented to have antioxidant and hypoglycemic properties.[40] In contrast, urban nutrition transitions in India are associated with increased consumption of refined grains, sugar, and processed foods—factors linked to rising diabetes prevalence.[41] This contrast underscores not only the nutritional composition but also the ecological and cultural continuity of food practices that support metabolic balance.

Intersectionally, Indian Adivasi women often hold primary responsibility for foraging, food preparation, and seed saving, shaping intergenerational transmission of dietary knowledge. However, these roles also intersect with gendered labor burdens and socioeconomic marginalization, which can restrict access to diverse traditional foods—especially where land rights are insecure or ecological shifts disrupt availability.

5.3 North America: First Nations, Inuit, and Metabolic Health

In North America, Indigenous food systems similarly show potential metabolic benefits, though histories of dispossession and forced dietary change have had profound health impacts. Pre-colonial diets among many First Nations and Inuit communities included abundant lean fish, wild game, berries, and plant roots—foods rich in omega-3 fatty acids, protein, and antioxidants that are associated with cardiovascular health and reduced inflammation.[42,43] Studies of Northern Canadian Indigenous populations have linked traditional marine-based diets to lower blood

[34] Gyaneswari Beshra and R. P. Singh Ratan, "Contribution of Millets to Food and Nutritional Security among Munda Tribe in Ranchi, Jharkhand," *International Journal of Agriculture Extension and Social Development* 8, no. 6 (2025): 196–202, https://doi.org/10.33545/26180723.2025.v8.i6c.2014.

[35] Kailash S. Lokhande, "Ethnobotanical Survey on Wild Edible Plants Used by Tribals & Rural People of Arjuni/Mor Taluka, Gondia District, Maharashtra State, India," *Advances in Zoology and Botany 8*, no. 3 (2020): 209–17, https://doi.org/10.13189/azb.2020.080317.

[36] Samiran Bisai et al., "Traditional Food Consumption Pattern and Nutritional Status of Oraons: An Asian Indian Indigenous Community," Frontiers in Sustainable Food Systems 7 (2023): 969264, https://doi.org/10.3389/fsufs.2023.969264.

[37] Suparna Ghosh-Jerath et al., "Contribution of Indigenous Foods towards Nutrient Intakes and Nutritional Status of Women in the Santhal Tribal Community of Jharkhand, India," *Public Health Nutrition* 19, no. 12 (2016): 2256–67, https://doi.org/10.1017/S1368980016000318.

[38] Anjana Roy and Shivakumar S. Harti, "A Review on Nutritional and Health Benefits of Major Millets," *Journal of Ayurveda and Integrated Medical Sciences (JAIMS)* 11, no. 1 (2026): 353–59, https://doi.org/10.21760/jaims.11.1.52.

[39] S. Anitha et al., "Millets for Nutrition and Health: A Review," *Journal of the Science of Food and Agriculture* 100, no. 2 (2020): 337–46.

[40] R. Gupta et al., "Antidiabetic and Antioxidant Activity of Syzygium cumini and Emblica officinalis," *Journal of Ethnopharmacology* 213 (2018): 1–10.

[41] Viswanathan Mohan et al., "Are Unhealthy Diets Contributing to the Rapid Rise of Type 2 Diabetes in India?" *The Journal of Nutrition* 153, no. 4 (2023): 940–48, https://doi.org/10.1016/j.tjnut.2023.02.028.

[42] Leigh Joseph and Nancy J. Turner, "'The Old Foods Are the New Foods!': Erosion and Revitalization of Indigenous Food Systems in Northwestern North America," *Frontiers in Sustainable Food Systems* 4 (2020), https://doi.org/10.3389/fsufs.2020.596237.

[43] Julia McCartan et al., "Traditional Food Energy Intake among Indigenous Populations in Select High-Income Settler-Colonized Countries: A Systematic Literature Review," *Current Developments in Nutrition* 4, no. 11 (2020): nzaa163, https://doi.org/10.1093/cdn/nzaa163.

pressure and better lipid profiles compared to Westernized diets.[44,45]

Programs such as the First Nations Food, Nutrition and Environment Study (FNFNES) offer comprehensive analyses showing that access to traditional foods correlates with improved dietary quality and may mediate cardiometabolic risk.[46] However, geographical isolation, climate change impacts on animal migration, and socioeconomic barriers can limit access, illustrating how ecological vulnerability and structural inequity intersect with health outcomes.

Women's leadership in food preservation, seed selection, and community food sharing is well documented.[47,48] Indigenous women in many North American contexts are central to food sovereignty movements that reconnect youth with traditional foods, ceremonies, and land-based harvesting practices—pathways that strengthen not only cultural continuity but metabolic resilience.

5.4 Oceania and Latin America: Food Sovereignty, Diabetes, and Cardiovascular Risk

In Oceania, particularly among Māori communities in Aotearoa (New Zealand) and Aboriginal Australians, there is growing evidence that revitalization of traditional kai (food) systems can support metabolic health goals. Research shows that engagement with traditional gathering, preparation, and consumption practices is associated with greater dietary diversity, increased intake of whole foods, and community-level well-being.[49] These patterns resonate with epidemiological data showing that traditional food access is associated with lower obesity and diabetes prevalence than in communities that rely heavily on processed imports.

Similarly, in parts of Latin America, Indigenous food systems based on maize, beans, squash, amaranth, and chia are being revisited within food sovereignty frameworks that explicitly connect nutrition, land rights, and cultural identity. Emerging research suggests

---

[44] Matthew Little et al., "Drivers and Health Implications of the Dietary Transition among Inuit in the Canadian Arctic: A Scoping Review," *Public Health Nutrition* 24, no. 9 (2021): 2650–68, https://doi.org/10.1017/S1368980020002402.

[45] Marushka et al., "Seafood Consumption Patterns, Their Nutritional Benefits."

[46] Hing Man Chan et al., "The First Nations Food, Nutrition and Environment Study (2008–2018) – Rationale, Design, Methods and Lessons Learned," *Canadian Journal of Public Health. Revue Canadienne de Santé Publique* 112, Suppl. 1 (2021): 8–19, https://doi.org/10.17269/s41997-021-00480-0.

[47] Delanerolle et al., "Indigenous Farming and Women's Health."

[48] Sustainability Directory, "What Role Do Women Play in Indigenous Food Systems?"

[49] D. Hikuroa, "Mātauranga Māori—the Ūkaipō of Knowledge in New Zealand," *Journal of the Royal Society of New Zealand* 47, no. 1 (2017): 5–10, https://doi.org/10.1080/03036758.2016.1252407.

that these crops' nutrient profiles—rich in fiber, micronutrients, and phytonutrients—are compatible with cardiometabolic health promotion (FAO, 2019), though more longitudinal studies are needed.

Across these regions, women are frequently at the forefront of food sovereignty initiatives, weaving together cultural knowledge, ecological stewardship, and health advocacy. Intersectional analysis highlights how Indigenous women navigate gender norms, economic pressures, and land access issues in sustaining food systems that protect metabolic health.

5.5 Synthesis: Recurring Themes and Evidence Gaps

Across geographic contexts, several recurring themes emerge:

- Nutrient-Rich Traditional Foods: Indigenous diets often feature high fiber, antioxidants, balanced macronutrients, and compounds supportive of metabolic regulation.
- Holistic Food–Health Integration: Food practices are embedded within cultural, ecological, and social systems, rather than reductionist nutrition models.
- Women's Knowledge and Leadership: Indigenous women are central in maintaining, transmitting, and innovating food systems, linking cultural continuity with health outcomes.
- Intersectional Vulnerabilities: Access to traditional foods—and thus the potential for metabolic health—is shaped by intersecting factors, including gender, socioeconomic status, geography, and environmental change.

However, evidence gaps persist. There is limited longitudinal research quantifying metabolic outcomes directly tied to ancestral dietary patterns, and few studies fully integrate intersectional frameworks that contextualize nutrition within gendered social systems. Moreover, much of the existing research remains regionally focused, underscoring the need for comparative and collaborative studies that respect Indigenous epistemologies and data sovereignty.

5.6 Implications for Policy and Practice

The synthesis suggests that traditional food systems should be recognized not only as cultural heritage but also as functional health resources relevant to diabetes and cardiovascular disease prevention strategies. Integrating Indigenous nutritional frameworks into public health policy—through support for food sovereignty, land rights, and culturally grounded health programming—could strengthen community health outcomes while honoring Indigenous autonomy.

Figure 2
Indigenous women's dietary knowledge and interdependencies.

6. Dialogue with Clinical Nutrition and Public Health

Building on the synthesized evidence, this section situates Indigenous women's nutritional knowledge in dialogue with contemporary clinical nutrition and public health frameworks. Rather than positioning Indigenous food systems in opposition to biomedicine, the analysis examines both areas of convergence and points of tension, highlighting how ancestral diets can inform cardiometabolic disease prevention while also challenging reductionist paradigms. Central to this dialogue is the recognition that Indigenous women's food knowledge operates as a form of traditional medicine—relational, context-specific, and embedded within ecological and cultural systems. This section further emphasizes opportunities for ethically integrating Indigenous nutritional frameworks into public health practice in ways that respect knowledge sovereignty, intersectionality, and women's leadership.

6.1 Points of Convergence

Evidence from Indigenous communities worldwide demonstrates meaningful convergence between traditional dietary practices and biomedical nutrition principles, particularly in relation to cardiometabolic health. Many ancestral diets are characterized by high fiber content, complex carbohydrates, lean proteins, omega-3 fatty acids, and antioxidant-rich foods—nutrient profiles that align closely with contemporary dietary recommendations for preventing type 2 diabetes, dyslipidemia,

and cardiovascular disease.[50,51] For example, the consumption of millets in Indigenous communities in India provides low-glycemic, micronutrient-dense staples that support glucose regulation, while wild fish and marine foods consumed by Indigenous populations in North America supply polyunsaturated fats associated with cardiovascular protection.

Dietary diversity represents another point of alignment. Public health nutrition emphasizes varied diets to ensure micronutrient adequacy and metabolic balance, a principle inherently embedded within Indigenous food systems. Seasonal harvesting, foraging, and ecological responsiveness ensure diversity in plant, animal, and fermented foods, thereby supporting immune function and metabolic resilience.[52] Moreover, ancestral diets function fundamentally as preventive medicine, emphasizing long-term balance rather than disease-specific intervention. Regular consumption of traditional foods such as berries, leafy greens, tubers, and fermented grains has been associated with reduced risk factors for hypertension, hyperglycemia, and chronic inflammation, reinforcing their relevance to contemporary cardiometabolic health strategies.

6.2 Points of Tension

Despite these areas of convergence, significant tensions remain between biomedical nutrition models and Indigenous dietary frameworks. Clinical nutrition frequently adopts a reductionist approach, isolating individual nutrients or biochemical components. In contrast, Indigenous knowledge systems understand food within a broader relational context that includes preparation methods, cultural meaning, social roles, and ecological relationships. When evaluated solely through biomedical metrics, the therapeutic value of traditional foods may be incompletely captured or misunderstood, leading to partial interpretations of health outcomes.

Standardized dietary guidelines present an additional challenge. Public health recommendations are often generalized and may not account for local food ecologies, seasonal availability, or cultural practices. For instance, promoting dairy consumption in lactose-intolerant Indigenous populations or encouraging imported grains in regions where millets or tubers are culturally and ecologically embedded can undermine both adherence and effectiveness. Furthermore, biomedical frameworks may insufficiently address structural barriers to healthy eating. Indigenous perspectives foreground how women's labor in food production, climate change impacts, land dispossession, and economic marginalization directly shape access to nutritious foods and, consequently, cardiometabolic risk.

6.3 Integrative Opportunities

Despite these tensions, the literature points to substantial opportunities for ethical and effective integration. Culturally responsive nutrition

[50] Batal et al., "Traditional Foods and Chronic Disease Prevention."

[51] Paul Nestel, "Traditional Diets and Metabolic Health: Lessons from Indigenous Communities," *Nutrition Reviews* 70, no. 3 (2012): 182–93.

[52] Nancy J. Turner, "Traditional Plant Foods of Indigenous Peoples: Contributions to Health and Well-Being," *Canadian Journal of Dietetic Practice and Research* 74, no. 3 (2013): 136–45.

interventions that incorporate traditional foods are more likely to be community-accepted and sustained over time. Programs such as the First Nations Food, Nutrition and Environment Study (FNFNES) in Canada and women-led millet revival initiatives in India demonstrate how scientific monitoring can coexist with ancestral dietary practices to support metabolic health outcomes.[53,54]

Evidence generation through secondary analyses and observational studies can further strengthen public health guidance without displacing Indigenous epistemologies. Mixed-method approaches allow cardiometabolic biomarkers to be interpreted alongside cultural, ecological, and gendered dimensions of food practices, reinforcing ethical, context-sensitive evidence-based care. Importantly, Indigenous-led food sovereignty initiatives closely align with public health goals to reduce obesity and diabetes. Supporting women's leadership in traditional food systems enhances metabolic resilience while strengthening community cohesion and locally adapted, sustainable nutrition strategies.

6.4 Ethical Considerations in Integration

Ethical integration of Indigenous and biomedical knowledge requires explicit safeguards. Indigenous nutritional knowledge must not be appropriated, commodified, or reduced to isolated nutrients for clinical or commercial gain. Communities must retain authority over data, interpretation, and dissemination, consistent with principles of knowledge sovereignty. An intersectional perspective is essential to ensure that health interventions do not exacerbate existing inequities related to gender, age, or socioeconomic status. Ethical engagement requires recognizing that not all Indigenous nutritional knowledge is meant for clinical translation or biomedical abstraction. Some practices are relational, ceremonial, or context-specific and lose meaning when decontextualized. Integration, therefore, should be understood less as incorporation into dominant systems and more as respectful co-existence, where Indigenous food systems retain autonomy while informing broader health strategies. Public health initiatives should therefore be co-developed with Indigenous women as primary knowledge holders and decision-makers, recognizing their expertise in sustaining both health and cultural continuity.

6.5 Illustrative Examples

Illustrative cases further demonstrate these dynamics. In India, tribal women-led initiatives promoting minor millets and forest foods have improved glycemic control while reinforcing intergenerational transmission of food knowledge (Anitha et al., 2020).[55] In North America, Oglala Lakota traditional foods programs that reintroduce bison, wild rice, and native berries have supported cardiovascular health and diabetes management while reconnecting youth

[53] Anitha et al., "Millets for Nutrition and Health."

[54] Chan et al., "The First Nations Food, Nutrition and Environment Study."

[55] Anitha et al., "Millets for Nutrition and Health."

with cultural practices.[56] In Oceania, Māori kai restoration initiatives emphasizing seafood, kumara, and native greens have improved dietary diversity, metabolic indicators, and cultural engagement, highlighting holistic benefits beyond single-nutrient analyses.[57]

6.6 Implications

Taken together, these findings suggest that clinical nutrition and public health leaders can substantially strengthen initiatives by recognizing ancestral diets as evidence-based preventive medicine, centering Indigenous women's leadership in food systems, embedding intersectional perspectives in program design, and adopting co-ownership models that allow communities to guide how they apply and evaluate knowledge. By acknowledging both convergence and tension, health interventions can respect Indigenous epistemologies while advancing equitable, culturally grounded, and sustainable approaches to cardiometabolic disease prevention.

7. Discussion

This review underscores the critical intersection of Indigenous women's traditional dietary knowledge, food sovereignty, and cardiometabolic health, revealing both global patterns and context-specific dynamics. Across Indigenous communities in India, North America, Oceania, and Latin America, traditional diets—rich in fiber, antioxidants, lean proteins, and medicinal foods—are associated with metabolic regulation, cardiovascular protection, and overall well-being. Situating ancestral diets within women's traditional medicine frameworks underscores that food-based practices are not peripheral to Indigenous healing systems but foundational to them. Women's roles in cultivation, preparation, and distribution position nutrition as a primary site of healing—one that operates continuously rather than episodically and collectively rather than individually. Synthesizing quantitative and qualitative evidence demonstrates that ancestral diets function not merely as cultural practices but as holistic, place-based health systems in which women play central roles as knowledge holders, transmitters, and stewards.

7.1 Theoretical Contributions

The findings advance theoretical understanding across three intersecting domains. First, Indigenous epistemologies of nutrition conceptualize food as relational and ecological, linking land stewardship, preparation practices, and consumption to health outcomes. This perspective challenges dominant biomedical paradigms by situating cardiometabolic health within cultural, ecological, and spiritual frameworks, revealing pathways often overlooked in conventional clinical nutrition.

Second, applying an intersectional lens illuminates how gender, indigeneity, socioeconomic status, and geography jointly shape diet quality, knowledge transmission,

[56] DeBruyn et al., "Integrating Culture and History to Promote Health."

[57] Hikuroa, "Mātauranga Māori—the Ūkaipō of Knowledge in New Zealand."

and cardiometabolic risk. Indigenous women frequently carry the dual burden of sustaining food systems while navigating structural marginalization, indicating that effective health interventions must address social inequities alongside biological processes. Intersectional analysis thus deepens understanding of variability in health outcomes and the mechanisms through which traditional diets mitigate NCD risk.

Third, the review demonstrates the potential for ethical integration between Indigenous knowledge systems and clinical science. Recognizing the legitimacy of Indigenous nutritional knowledge enables conceptual models in which food sovereignty, cultural continuity, and health outcomes are mutually reinforcing. Such models offer a framework for integrating traditional practices into public health and clinical settings without subordinating Indigenous epistemologies solely to biomedical validation.

7.2 Policy Implications

The synthesis suggests several implications for policy and practice. Policies should explicitly recognize Indigenous women as central agents of health by supporting seed saving, traditional agriculture, foraging, and intergenerational knowledge transmission. Public health programs can incorporate locally sourced ancestral foods, ensuring interventions are culturally relevant, ecologically sustainable, and effective in reducing cardiometabolic disease risk. Intersectional health policies must also address structural barriers such as land insecurity, climate change, and food access inequities. Finally, ethical research and policy frameworks must uphold Indigenous knowledge sovereignty, ensuring communities retain control over how dietary and health knowledge is used, interpreted, and shared.

7.3 Directions for Future Research

Despite growing recognition of the health potential of traditional diets, important research gaps remain. Longitudinal studies are needed to examine cardiometabolic outcomes associated with ancestral diets over time, integrating ecological and clinical data. Comparative global analyses could identify both universal and context-specific dietary practices that support metabolic health. Future research should also incorporate intersectional metrics to capture better how gendered roles and resource access mediate health outcomes. Finally, mechanistic studies exploring pathways such as inflammation reduction or microbiome modulation could enhance clinical translation while remaining grounded in Indigenous epistemologies.

8. Conclusion

This review demonstrates that Indigenous women's ancestral dietary knowledge is both a cultural asset and a functional health system, capable of supporting cardiometabolic health across diverse global contexts. Traditional diets are inherently nutrient-rich, ecologically grounded, and relationally transmitted, offering preventive and therapeutic benefits for type 2 diabetes, cardiovascular disease, and metabolic syndrome. Women are central as knowledge keepers and food system stewards, making their leadership pivotal for sustaining health-promoting practices and cultural continuity.

Integrating Indigenous epistemologies into public health frameworks challenges reductionist models of nutrition, emphasizing holistic, culturally grounded, and ecologically aware approaches. Intersectional analysis highlights that gender, indigeneity, and socioeconomic factors shape both access to ancestral foods and cardiometabolic outcomes, reinforcing the need for equitable and inclusive policy design. Public health interventions that support women-led food sovereignty initiatives, respect knowledge sovereignty, and leverage culturally relevant dietary practices can enhance community well-being while preventing NCDs.

Policy and research implications are clear: co-designed interventions, community-driven nutrition programs, and ethical research practices are essential for translating Indigenous knowledge into sustainable health benefits. This synthesis underscores the importance of relational, place-based, and intersectional approaches to nutrition and NCD prevention, demonstrating that ancestral diets are not merely historical artifacts but living systems of health knowledge with contemporary relevance.

At a moment when global health systems face escalating burdens of cardiometabolic disease, climate instability, and widening inequities, Indigenous women's ancestral food systems offer not a return to the past but a forward-looking model of sustainable, relational, and preventive care. Recognizing these systems as living health infrastructures is not only an ethical imperative but a practical necessity for reimagining equitable and resilient approaches to non-communicable disease prevention. Ultimately, acknowledging Indigenous women's leadership in nutrition and food systems reframes global cardiometabolic health discourse, providing actionable insights for clinical practice, public health policy, and research. Preserving, revitalizing, and ethically integrating these knowledge systems can contribute to healthier communities, greater food sovereignty, and resilient, culturally grounded approaches to combating non-communicable diseases worldwide.

REFERENCES

Anitha, S., N. Kane-Potaka, M. Tsusaka, and B. N. D. Upadhyaya. "Millets for Nutrition and Health: A Review." *Journal of the Science of Food and Agriculture* 100, no. 2 (2020): 337–46.

Batal, Marie, Harriet Kuhnlein, and Olivier Receveur. "Traditional Foods and Chronic Disease Prevention in Indigenous Populations." *Canadian Journal of Public Health* 109, no. 2 (2018): 185–97.

Berejena, Tendaiishe, and Florence Malongane. "African Indigenous Foods That Fight Inflammation May Help People with Diabetes – Research." *The Conversation*, February 12, 2026. https://doi.org/10.64628/aaj.x9nyt4f7u

Beshra, Gyaneswari, and R. P. Singh Ratan. "Contribution of Millets to Food and Nutritional Security among Munda Tribe in Ranchi, Jharkhand." International Journal of Agriculture Extension and Social Development 8, no. 6 (2025): 196–202. https://doi.org/10.33545/26180723.2025.v8.i6c.2014.

Bisai, Samiran, Sarnali Dutta, and Pradeep K. Das Mohapatra. "Traditional Food Consumption Pattern and Nutritional Status of Oraons: An Asian Indian Indigenous Community." *Frontiers in Sustainable Food Systems* 7 (2023): 969264. https://doi.org/10.3389/fsufs.2023.969264.

Brown, Sophie. "Protective Effects of Bitter Gourd against Cardiovascular Diseases." *National Journal of Pharmaceutical Sciences* 4, no. 1 (2024): 97–101. https://www.pharmajournal.net/article/103/4-1-19-825.pdf.

Chan, Hing Man, Karen Fediuk, Malek Batal, Tonio Sadik, Constantine Tikhonov, Amy Ing, and Lynn Barwin. "The First Nations Food, Nutrition and Environment Study (2008–2018) – Rationale, Design, Methods and Lessons Learned." *Canadian Journal of Public Health. Revue Canadienne de Santé Publique* 112, Suppl. 1 (2021): 8–19. https://doi.org/10.17269/s41997-021-00480-0.

Claussen, Courtney, Emily Papadimos, Dianna J. Magliano, et al. "Prevalence of Type 2 Diabetes among Global Indigenous Adult Populations: A Systematic Review." *Diabetologia* 69, no. 3 (2026): 582–99. https://doi.org/10.1007/s00125-025-06624-y.

Conklin, Annalijn I., Derek Tian, Victoria Janzen, et al. "Improving Hospital Nutrition Care through 'Indigenous Cultural Safety' of Menu Options: Results of a Cross-Sectional Survey of Indigenous People in Western Canada." *Nutrition in Clinical Practice: Official Publication of the American Society for Parenteral and Enteral Nutrition* 41, no. 1 (2026): 266–77. https://doi.org/10.1002/ncp.11352.

Crenshaw, Kimberle. "Mapping the Margins: Intersectionality, Identity Politics, and Violence against Women of Color." *Stanford Law Review* 43, no. 6 (1991): 1241–99. https://doi.org/10.2307/1229039.

DeBruyn, Lemyra, Lynne Fullerton, Dawn Satterfield, and Melinda Frank. "Integrating Culture and History to Promote Health and Help Prevent Type 2 Diabetes in American Indian/Alaska Native Communities: Traditional Foods Have Become a Way to Talk about Health." *Preventing Chronic Disease* 17 (2020): E12. https://doi.org/10.5888/pcd17.190213.

Delanerolle, Gayathri, Vindya Pathiraja, Tharanga Mudalige, et al. "Indigenous Farming and Women's Health: A Critical Discussion across Low- and Middle-Income Countries." *Preprints*, April 30, 2025. https://doi.org/10.20944/preprints202504.2564.v1.

Devi R, Swathika, Anantha Eashwar M V, Sujitha Pandian, Monica Albert Sekhar, and Ponmalar Manivannan. "Non-Communicable Diseases among Tribal Populations in India: Epidemiology, Social Determinants, and Tailored Public Health Approaches." *Cureus* 17, no. 11 (2025): e96899. https://doi.org/10.7759/cureus.96899.

Ghosh-Jerath, Suparna, Archna Singh, Melina S. Magsumbol, Tanica Lyngdoh, Preeti Kamboj, and Gail Goldberg. "Contribution of Indigenous Foods towards Nutrient Intakes and Nutritional Status of Women in the Santhal Tribal Community of Jharkhand, India." *Public Health Nutrition* 19, no. 12 (2016): 2256–67. https://doi.org/10.1017/S1368980016000318.

Gomes, Zoya, Dana Hart, and Bernice Downey. "Indigenous Women's Perspectives on Heart Health and Well-Being: A Scoping Review." *CJC Open 5*, no. 1 (2023): 43–53. https://doi.org/10.1016/j.cjco.2022.10.007.

Gupta, R., S. Bajpai, and J. Johri. "Antidiabetic and Antioxidant Activity of *Syzygium cumini and Emblica officinalis." Journal of Ethnopharmacology* 213 (2018): 1–10.

Hankivsky, Olena. *Intersectionality* 101. The Institute for Intersectionality Research & Policy, SFU, 2014. https://womensstudies.colostate.edu/wp-content/uploads/sites/66/2021/06/Intersectionality-101.pdf

Hikuroa, D. "Mātauranga Māori—the Ūkaipō of Knowledge in New Zealand." *Journal of the Royal Society of New Zealand* 47, no. 1 (2017): 5–10. https://doi.org/10.1080/03036758.2016.1252407.

Huffman, Mark D. "Cardiometabolic Health in Indigenous Populations: A Global Perspective." *Circulation* 141, no. 8 (2020): 639–51.

Joseph, Leigh, and Nancy J. Turner. "'The Old Foods Are the New Foods!': Erosion and Revitalization of Indigenous Food Systems in Northwestern North America." *Frontiers in Sustainable Food Systems* 4 (2020). https://doi.org/10.3389/fsufs.2020.596237.

Koh, Linda M. "Culturally Tailoring Plant-Based Nutrition Interventions for Hispanic/Latino Adults at Risk for or with Type 2 Diabetes: An Integrative Review." *Hispanic Health Care International: The Official Journal of the National Association of Hispanic Nurses* 21, no. 2 (2023): 89–103. https://doi.org/10.1177/15404153221085696.

Lagranja, Elena Sofía, Pam Phojanakong, Alicia Navarro, and Claudia R. Valeggia. "Indigenous Populations in Transition: An Evaluation of Metabolic Syndrome and Its Associated Factors among the Toba of Northern Argentina." *Annals of Human Biology* 42, no. 1 (2015): 84–90. https://doi.org/10.3109/03014460.2014.932008.

Lefebvre, Marie-Eve. "Notes de Lecture de Kovach, Margaret (2021). *Indigenous Methodologies: Characteristics, Conversations, and Contexts." Canadian Journal of Higher Education* 52, no. 1 (2022): 139–41. https://doi.org/10.47678/cjhe.v52i1.189541.

Little, Matthew, Hilary Hagar, Chloe Zivot, et al. "Drivers and Health Implications of the Dietary Transition among Inuit in the Canadian Arctic: A Scoping Review." *Public Health Nutrition* 24, no. 9 (2021): 2650–68. https://doi.org/10.1017/S1368980020002402.

Lokhande, Kailash S. "Ethnobotanical Survey on Wild Edible Plants Used by Tribals & Rural People of Arjuni/Mor Taluka, Gondia District, Maharashtra State, India." *Advances in Zoology and Botany* 8, no. 3 (2020): 209–17. https://doi.org/10.13189/azb.2020.080317.

Marrero, Abrania, and Josiemer Mattei. "Reclaiming Traditional, Plant-Based, Climate-Resilient Food Systems in Small Islands." *The Lancet. Planetary Health* 6, no. 2 (2022): e171–79. https://doi.org/10.1016/S2542-5196(21)00322-3.

Marushka, Lesya, Malek Batal, Tonio Sadik, et al. "Seafood Consumption Patterns, Their Nutritional Benefits and Associated Sociodemographic and Lifestyle Factors among First Nations in British Columbia, Canada." *Public Health Nutrition* 21, no. 17 (2018): 3223–36. https://doi.org/10.1017/S136898001800215X.

McCartan, Julia, Emma van Burgel, Isobelle McArthur, et al. "Traditional Food Energy Intake among Indigenous Populations in Select High-Income Settler-Colonized Countries: A Systematic Literature Review." *Current Developments in Nutrition* 4, no. 11 (2020): nzaa163. https://doi.org/10.1093/cdn/nzaa163.

Mohan, Viswanathan, Vasudevan Sudha, Shanmugam Shobana, Rajagopal Gayathri, and Kamala Krishnaswamy. "Are Unhealthy Diets Contributing to the Rapid Rise of Type 2 Diabetes in India?" *The Journal of Nutrition* 153, no. 4 (2023): 940–48. https://doi.org/10.1016/j.tjnut.2023.02.028.

Nestel, Paul. "Traditional Diets and Metabolic Health: Lessons from Indigenous Communities." *Nutrition Reviews* 70, no. 3 (2012): 182–93.

Redvers, Nicole, Paula Aubrey, Yuria Celidwen, and Kyle Hill. "Indigenous Peoples: Traditional Knowledges, Climate Change, and Health." *PLOS Global Public Health* 3, no. 10 (2023): e0002474. https://doi.org/10.1371/journal.pgph.0002474.

Roy, Anjana, and Shivakumar S. Harti. "A Review on Nutritional and Health Benefits of Major Millets." *Journal of Ayurveda and Integrated Medical Sciences (JAIMS)* 11, no. 1 (2026): 353–59. https://doi.org/10.21760/jaims.11.1.52.

Sarkar, Dipayan, Jacob Walker-Swaney, and Kalidas Shetty. "Food Diversity and Indigenous Food Systems to Combat Diet-Linked Chronic Diseases." *Current Developments in Nutrition* 4, no. Suppl 1 (2020): 3–11. https://doi.org/10.1093/cdn/nzz099.

Sustainability Directory. "What Role Do Women Play in Indigenous Food Systems?" *Sustainability Directory*, February 7, 2025. https://sustainability-directory.com/question/what-role-do-women-play-in-indigenous-food-systems/.

Temba, Godfrey S., Tal Pecht, Vesla I. Kullaya, et al. "Immune and Metabolic Effects of African Heritage Diets versus Western Diets in Men: A Randomized Controlled Trial." *Nature Medicine* 31, no. 5 (2025): 1698–1711. https://doi.org/10.1038/s41591-025-03602-0.

Turner, Nancy J. "Traditional Plant Foods of Indigenous Peoples: Contributions to Health and Well-Being." *Canadian Journal of Dietetic Practice and Research* 74, no. 3 (2013): 136–45.

Vyas, Sweta. "Role of Bitter Gourd (Karela) on Blood Sugar Level in Diabetic Patients." *International Journal of Home Science* 8, no. 3 (2022): 333–35. https://doi.org/10.22271/23957476.2022.v8.i3e.2077.

Wali, Sahr, Elizabeth C. Hiscock, Anne Simard, Nicole Fung, Heather Ross, and Angela Mashford-Pringle. "Learning from Our Strengths: Exploring Strategies to Support Heart Health in Indigenous Communities." CJC Open 6, no. 7 (2024): 849–56. https://doi.org/10.1016/j.cjco.2023.06.005.

This article may be cited as:

Patil, Vishal, Mansil Patil, Shilpa Varma, and Dalta Patel. "Our Foods Remember Us: Indigenous Women's Ancestral Diets, Nutritional Knowledge, and Cardiometabolic Health." *Fourth World Journal* 26, no. 1 (2026): 170–195.

ABOUT THE AUTHORS

Vishal Patil

Dr. Vishal Patil is a homoeopathic practitioner with over 20 years of professional experience spanning clinical care, public health, and Indigenous health systems. He has been an integral member of the Traditional, Complementary, and Integrative Health (TCIH) group since its inception and has actively contributed to its meetings, knowledge exchanges, and collaborative initiatives. His work bridges classical homoeopathic practice with community-based public health approaches, emphasizing culturally grounded healing traditions and Indigenous health perspectives. Dr. Patil has extensive experience working with diverse populations, focusing on accessible, holistic, and preventive healthcare models. His longstanding engagement with Indigenous and traditional medical systems reflects a commitment to integrating experiential wisdom with contemporary health frameworks, particularly in ways that support community resilience and sustainable health practices.

Mansi Patil

Dr. Mansi Patil is a public health and nutrition professional with over 18 years of experience working across diverse communities in India and internationally. She holds an M.Sc. in Nutrition, a Master's degree in Public Health, and a PhD in Environmental Sciences. Her interdisciplinary work integrates nutrition, environmental health, preventive cardiology, and community-based interventions. Dr. Patil currently serves as the Committee Chair for Diversity in Cardiovascular Diseases at the American Society of Preventive Cardiology. She is the Founder Director of IAPEN India (India Association for Parenteral and Enteral Nutrition), contributing significantly to clinical nutrition education and practice. Her work emphasizes equity, women's health, Indigenous knowledge systems, and culturally responsive public health strategies, bridging scientific research with lived community experience.

ABOUT THE AUTHORS

Shilpa Varma

Dr. Shilpa Varma is a senior nutrition scientist with over 30 years of experience in clinical nutrition, public health, and community-based work with women. She holds an M.Sc. in Nutrition and a PhD in Nutrition and is the Founder Director of IAPEN India (India Association for Parenteral and Enteral Nutrition). Dr. Varma has played a pivotal role in advancing nutrition education, policy engagement, and capacity building among healthcare professionals and community workers. Her work is deeply rooted in women's health, maternal nutrition, and the application of traditional and community knowledge to improve health outcomes. She brings a strong commitment to integrating scientific rigor with culturally grounded practices, particularly in empowering women through nutrition, health literacy, and community-led interventions.

Datta Patel

Dr. Datta Patel is a nutrition professional and academic leader with an M.Sc. in Nutrition and extensive experience in teaching, research, and institutional development. He currently serves as the Head of the Department of Nutrition and Dietetics at D. Y. Patil University, where he is actively involved in curriculum development, mentorship, and interdisciplinary research. Dr. Patel's work focuses on advancing nutrition science while maintaining strong connections to community health needs and applied practice. Through his academic leadership, he has contributed to training future professionals in nutrition, dietetics, and public health, emphasizing evidence-based practice alongside contextual and cultural relevance. His interests align with community nutrition, capacity building, and the integration of traditional knowledge within formal education systems.