

Original Research Article

Investigating the Intersection of Indigenous and Modern Culture and Social Determinants of Women's Health in Guatemala

ABSTRACT

This research explores the intersection of Indigenous and modern cultural practices in addressing women's reproductive health in Guatemala, specifically focusing on the role of Mayan traditional medicine. Through a review of existing literature reinforced with a set of surveys, the study examines common reproductive health issues- menstrual health, fertility, pregnancy, childbirth, and postpartum care- and how Mayan holistic practices contribute to their management among Indigenous women. Further, the research explores physical treatment, including herbal remedies, massages, and other traditional interventions, comparing how these practices align with or differ from contemporary medical practices. Additionally, the study considers the psychosocial support that Mayan medicine provides, analyzing the role of community and family in offering emotional and psychological assistance during reproductive health challenges. Cultural factors, such as beliefs about menstruation, fertility, and childbirth, are examined alongside environmental influences, such as family dynamics, education, and social stressors, which influence women's health decisions. The current findings suggest that integrating Mayan traditional medicine with the modern healthcare system could offer a culturally respectful and comprehensive approach to addressing reproductive health disparities in Guatemala. This integration's implications for indigenous and contemporary healthcare practices might be noticed.

Keywords: Healthcare system, health status, Indigenous women in Guatemala, Mayan medicine, social determinants of health, women's reproductive health

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1. INTRODUCTION

Pregnancy-related complications are the leading cause of mortality and reproductive health issues among women globally, with an estimated 287,000 women dying each year due to cases associated with pregnancy and childbirth [1]. Progress in lowering maternal mortality ratios (MMR) has remained uneven both across and within countries, with significant socioeconomic disparities persisting. Although effective interventions have been understood for decades, they remain insufficiently accessible and available in many developing nations. This matter is due to various factors, such as high fertility rates and lack of access to quality healthcare among vulnerable communities [2]. The Mayan-Indigenous populations of Guatemala face some of the worst women's health compared to other parts of the world. Despite repeated assertions that reducing inequity and reaching Indigenous populations is a top government priority, and despite overall reductions in maternal mortality in Guatemala, MMRs remain very high in local populations, especially those living in poor, marginalized, and Indigenous regions [3].

In Guatemala, Indigenous women face significant health disparities, particularly in the area of reproductive health. The social determinants of health - encompassing cultural, environmental, and socioeconomic factors, are critical in shaping women's access to and experiences with healthcare [4]. For many Indigenous women, the cultural divide between modern healthcare systems and traditional practices, such as Mayan medicine, poses challenges to receiving effective and culturally sensitive care [5]. In a landscape marked by the coexistence of Indigenous and modern cultural practices, Mayan traditional medicine plays a central role in the health and well-being of many women, offering an alternative or complementary approach to treating reproductive health issues [6]. This research underscores the urgent need for more

accessible and culturally sensitive healthcare. It also explores how Mayan medicine contributes to managing reproductive health issues among Indigenous women in Guatemala, with a particular focus on the physical, emotional, and community-based support it provides.

Despite decades of knowledge regarding effective health interventions, many Indigenous communities in Guatemala still lack access to essential healthcare services [7]. ~~Reproductive health disparities are further influenced by socioeconomic factors, cultural beliefs, and environmental stressors that shape women's health decisions [8]~~ Socioeconomic factors, cultural beliefs, and environmental stressors that shape women's health decisions [8] further influence reproductive health disparities. For Indigenous women, these challenges are compounded by the social and economic inequalities they face, as well as by the cultural inaccessibility of conventional healthcare systems [9]. Mayan medicine addresses these challenges by offering a holistic approach responsive to the unique psychosocial and environmental roots of women's reproductive health needs.

This study investigates prevalent reproductive health concerns among women in Guatemala, including issues related to menstrual health, fertility, pregnancy, childbirth, and postpartum care. Through interviews with 93 Indigenous women from the Mayan community in Guatemala and literature reviews, this research explores the current reproductive health situation of Indigenous women in addition to physical and psychosocial dimensions of Mayan healing practices, encompassing herbal remedies, massage therapies, and the vital role of family and community support. Additionally, the study aims to understand the cultural beliefs inherent in Mayan medicine- particularly those related to menstruation, fertility, and childbirth. These beliefs often

shape women's healthcare choices, influencing their decisions about seeking care, the types of treatments they prefer, and the role of family and community in their health journey.

By examining how Indigenous and modern practices intersect, this study contributes to the ongoing discussion about integrating traditional and modern healthcare systems to serve contemporary women's reproductive health needs better. Understanding the role of Mayan traditional medicine within a broader healthcare framework offers valuable insights into potential collaborations between traditional healers and modern healthcare providers, aiming to bridge cultural gaps and enhance the health outcomes for women in Guatemala.

2. METHODOLOGY & DATA COLLECTION

2.1 Geological Delineation of the Research Region

The data for this study was collected from rural communities in Guatemala, including Tikal, a significant archaeological and ceremonial site of the ancient Maya civilization. Tikal is located in the northern region of Guatemala, is the largest urban center in the southern Maya lowlands, and is approximately 19 miles north of Lake Petén Itzá, the northern part of Petén province, Guatemala [10]. This site of Mayan civilization was inhabited from the 6th century B.C. to the 10th century A.D. within a large Maya Forest region that extended to Mexico and Belize [11].

2.2 Data Sources and Literature Search

This study utilized a comprehensive literature review to gather and analyze existing knowledge on the role of Mayan traditional medicine in managing and treating reproductive health issues among Indigenous and non-Indigenous women in Guatemala. The initial search strategy

involved identifying key terms, including "Mayan medicine," "Indigenous women," "healthcare system," and "reproductive health," to retrieve relevant sources. The literature review was expanded to ensure a thorough understanding of Indigenous women's healthcare context and include studies examining Mayan traditional and herbal remedies.

This dual-focused review allowed a systemic and in-depth review of current literature, providing insights into how traditional medicine contributes to reproductive healthcare for Indigenous women in Guatemala. Through this literature review, the study aimed to understand conventional medicine's contribution to managing and treating reproductive health issues among Indigenous and non-Indigenous women in Guatemala.

2.3 Survey Populations

A medical camp was planned, and the women were invited to participate in a study on women's reproductive health from the perspective of indigenous medicine or folk medicine and scientific medical approaches. The women came to the ~~our~~ medical camp to have their health checked by a team of ~~our~~ medical professionals, including internal medicine doctors, family medicine, and dental specialists. The women were informed of the study and invited to participate. The research team provided a standardized hard-copy survey for their completion. ~~Eight-five~~ ~~In total, 85~~ women were lined up, and we distributed the survey forms was distribute to them. They were and encouraged them to answer to the best of their knowledge. Their names and identifications were left to be anonymous. An interpreter from English to Spanish was recruited there to ensure the answers were correct.

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3. RESULTS

3.1 Current conditions of Indigenous women in Guatemala

The research collected data by interviewing 93 Indigenous women in Guatemala. A pre-made questionnaire was used to assess women's reproductive health situations. The questionnaire contained five questions about family planning, childbirth, contraceptive use, sexual autonomy, and access/barriers to reproductive healthcare. The survey questions were translated into Spanish [to better understand the participants to understand the participants better.](#)

3.1.1 The Practice of Family Planning

Fig. 1 presents data from interviews of Indigenous women's utilization of family planning methods. This was designed to collect data on whether women actively manage their reproductive health and family planning. Among the participants, 51.7% (n = 48) reported currently utilizing family planning methods for their reproductive health, while 48.3% (n = 45) answered they were not. These results highlight an almost equal distribution between women who adopt family planning strategies and those who do not.



Fig. 1 presents the answer percentage to the family planning practice.

3.1.2. First Child Ages

Fig. 2 presents the findings from interviews conducted with Indigenous women regarding their experiences with childbirth. This question was designed to collect data on the relationship between childbirth age at first birth and the reproductive health of women based on age. The result indicates that 57% (n = 53) of women gave birth to their first child before the age of 19, while 33.3% (n = 31) of respondents gave birth between the ages of 20 and 40. Additionally, 9.7% (n = 9) of respondents reported not having given birth. The findings give an insight into the average age of childbirth among Indigenous women in Guatemala and its implications for reproductive health. The data supports the assertion that Indigenous women are facing more significant challenges to their reproductive health compared to non-indigenous women as they give birth at an earlier age.

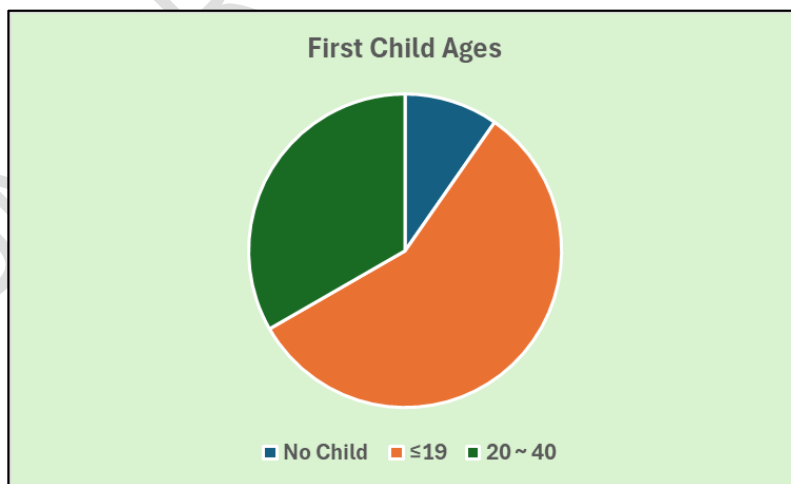


Fig. 2 presents the answers to the question of having first child ages.

3.1.3 Practice of Contraception

Fig. 3 provides data on the usage of contraceptive methods among Indigenous women. 39% (n = 37) of women are using contraceptive methods for their pregnancy, while 71% (n = 56) are not. These findings suggest that most Indigenous women tend to avoid contraceptive methods, which might lead to an increase in the risk of unintended pregnancies. When asked about their reasons for not using contraception, responses highlighted two distinct answers: cultural beliefs and partner's opposition. Many Indigenous women believe childbirth is a blessing from God and using contraceptives is against God. Additionally, the husbands may oppose contraceptive methods that are under women's control for fear of infidelity, for religious reasons, or due to social stigma.

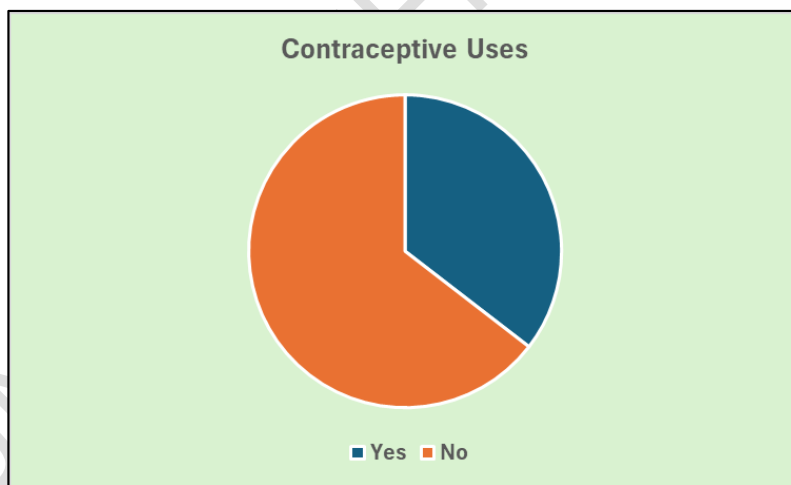


Fig.3 presents the answer ratio of the practice of the contraceptive method

3.1.4 Sexual Autonomy

Fig. 4 presents findings regarding the sexual autonomy of Indigenous women in Guatemala. This question assessed whether women can exercise their rights beyond their pregnancy. The question regarding sexual autonomy causes discomfort for 78.4% (n = 73) of women who did not answer the question. Among those who answered-responded to this question, 15.1% (n = 14) of women answered they could refuse their husbands for unwanted sexual interaction, and 6.5% (n = 6) answered they couldn't. These results highlight the current perception of the Indigenous community toward women's rights. It also asserts that such perceptions are caused by the husband's control of what is under the woman's control.

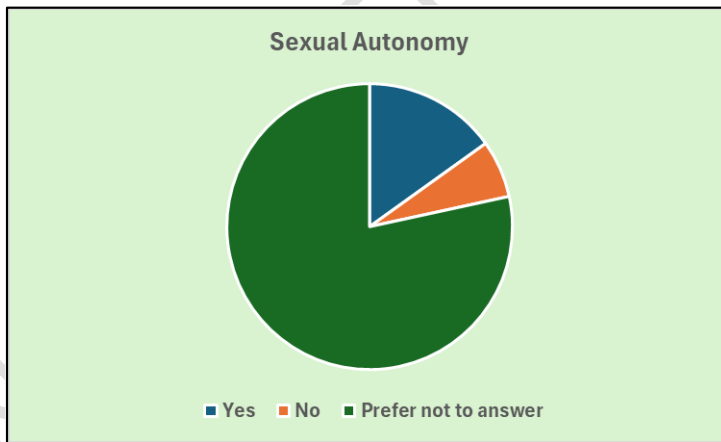


Fig. 4 presents the existence of sexual autonomy from their husband.

3.1.5. Accessibility of Reproductive Healthcare

Fig.5 presents the findings related to barriers to accessing reproductive healthcare. 56% (n = 52) of respondents indicated they have barriers to access to healthcare, while 44% (n = 41) indicated they don't have barriers. Among 56% of women who answered they have barriers to accessing healthcare, 19% (n = 10) women answered the distance from home, 67% (n = 35) women said financial issues and 14% (n = 7) are due to mistrust. The results highlight that financial issues represent the most significant barrier, [impacting/influencing](#) over half of the women seeking reproductive healthcare.

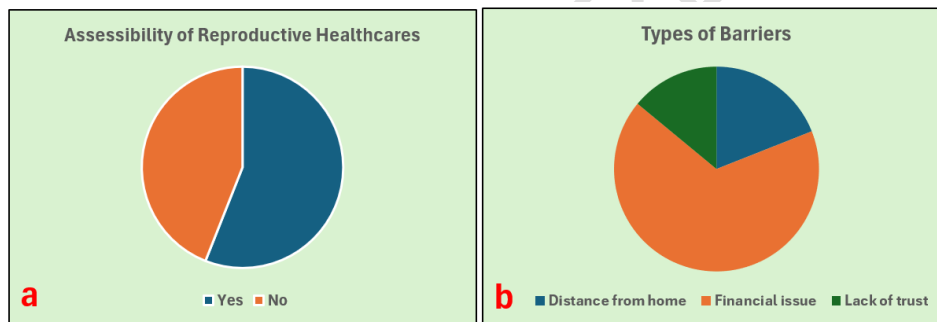


Fig.5 shows the barriers to reproductive healthcare

3.2 Healthcare issues among Indigenous women

In Guatemala, healthcare services are curative and based on prevalent necessities. The national budget for health is mainly allocated to implementing curative actions, paying little attention to health promotion activities [12]. The health services are primarily concentrated in the metropolitan region of Guatemala City, where private institutions also provide support for those with higher incomes [13]. In rural areas, where the majority of the Indigenous population lives

and where the highest risk groups are concentrated, rural health technicians, community volunteers, and rural health workers serve the population [14].

Within these inferior situations, women are facing reproductive issues such as high maternal mortality rates, high rates of sexually transmitted infections, and limited access to reproductive health care and sexual education [15].

In response to those challenges, pregnant women often turn to traditional Indigenous midwives, *Comadronas*, whom families hire to assist with pregnancy, labour, and the postpartum period in rural Maya communities [5].

3.3 Mayan Traditional Medicine Practices

The Maya utilized local plants to address health concerns. They talked with the plants and developed special bonds with some plants. Healers often interpreted the colour of a plant, flower, or fruit as indicative of its potential medicinal value. Additionally, the temperature, whether hot or cold, plays a central role in selecting appropriate remedies. Many Mayan healers held that imbalance in bodily temperature was a primary cause of illness and thus prescribed plants with opposing temperature qualities to restore balance and promote healing [16].

Beyond herbal remedies, Mayan women receive treatment from traditional female healers known as *Curanderas*. These women are specialists in Mayan herbal medicine and spiritual traditions, providing holistic care that often includes massage techniques specifically aimed at addressing various reproductive health issues referred to as *informal mujeres* (diseases of women) [17].

As mentioned above, besides *Curanderas*, local communities traditionally relied on *Comadronas* as the primary source of maternal healthcare, particularly for rural women, providing an essential first line of care. However, the presence of *Comadronas* has declined due to challenges in

completing training and obtaining certification. This training is often conducted in Spanish rather than the community's Indigenous language and frequently conflicts with the *Comadronas'* knowledge and beliefs [18].

3.4 Psychosocial Support

In Mayan culture, family and community play a crucial role in providing emotional and psychosocial support for women with reproductive health challenges. Indigenous women often turn to their mothers, sisters, aunts, and other female relatives for emotional support and guidance during pregnancy, childbirth, and postpartum periods, as the community has a firm reliance on family networks [19]. In addition to family support, numerous Mayan communities actively engage in shared rituals and practices designed to support women experiencing reproductive health challenges. These communal practices often include special prayers, the preparation and use of herbal remedies, and cleansing ceremonies to foster physical and emotional healing. Through rituals, communities give women a sense of belonging, reinforcing collective identity and resilience in the face of reproductive difficulties [20]. By participating in these shared practices, women and community members engage in collective coping, which may alleviate stress and reinforce traditional beliefs and values surrounding reproductive health. This involvement not only aids individuals healing but also strengthens social bonds, reaffirming the interconnected roles of family, tradition, and community in health and well-being [21].

Moreover, traditional midwives are critical in supporting women through various stages of the reproductive process. Their contribution extends beyond medical care, providing essential emotional and psychological support that complements physical treatment. Throughout

pregnancy, childbirth, and postpartum, they offer comfort, perform culturally significant rituals, and provide spiritual guidance tailored to the individual's needs. This holistic approach serves to alleviate the emotional burdens associated with reproductive health challenges. By integrating medical support with emotional and spiritual care, traditional midwives play an invaluable role in enhancing maternal well-being and reinforcing the interconnectedness of physical, emotional, and spiritual health within the context of traditional reproductive care [22].

3.5 Cultural Beliefs and Healthcare Decision-Making

In Mayan culture, having children is often seen as a fundamental part of a woman's identity and role within the community, placing significant pressure on women to conceive and raise children [20].

Among the Mayan population in Guatemala, childbearing is regarded as a physical, profoundly sacred and spiritual experience. This perspective on childbirth is rooted in longstanding cultural beliefs that frame bringing new life into the world as a significant connection between the individual, family, community, and the divine [23]. Due to this belief, Indigenous women with reproductive health challenges, such as infertility, can be stigmatized, leading women to remain silent about their issues in the Mayan community [24].

This stigmatization and belief have a significant impact on women's healthcare choices. Despite the rising use of modern biomedical reproductive services among the Ladino population, the Mayan community and Indigenous women continue to show significantly lower engagement with these services [23].

Attention must be given to the understanding of Maya's beliefs. To increase the overall reproductive health care in these Indigenous communities, which will enable quality care to be provided that is culturally acceptable.

3.6 Environmental and Social Factors

Environmental factors can significantly [impact/influence](#) Indigenous women's reproductive health decisions, and a variety of factors can influence these decisions. The most critical environmental factor is their access to care. Inadequate education about human sexuality and limited access to quality medical facilities, medical staff, and reproductive health care services. All these factors put Indigenous women into disadvantageous situations that lead to inferior reproductive health outcomes [25]. Another factor that affects Indigenous women is their community preferences. Indigenous women may prefer to give birth in their communities or close to them, which can limit them from care. This preference is also impacted by characteristics of a family formation of an Indigenous community, a large family with many children that prevent women from leaving for a long time [26].

The most critical social factors that [impact/influence](#) Indigenous women are their living conditions. By Guatemala providing universal healthcare to all citizens, all people in the country have the power to "receive quality health services that meet their needs without being exposed to financial hardship." [27] ~~These~~ [These](#) should be guaranteed healthcare services for all Guatemalan people who need treatment. However, Indigenous women in Guatemala tend to believe reproductive health concerns, such as pregnancy and childbirth, are predetermined by God, and healthcare facilities' quality and care are not trusted by local Indigenous women [28][29].

Moreover, the family planning of Indigenous families also has a significant ~~impact~~-influence on Indigenous women's reproductive health. Within Indigenous communities, husbands often play a primary role in decisions about family planning, and their preference or opposition to specific contraceptive methods that are under the women's control ~~impacts~~influences the use or ~~non-~~use of fertility regulation [30].

3.7 Comparison of Traditional and Modern Practices

The effectiveness of traditional practices compared to modern healthcare practices in addressing reproductive health issues among Mayan and Indigenous communities in Guatemala presents a complex landscape shaped by cultural beliefs, accessibility, and perceived outcomes [5].

Traditional practices rooted in centuries-old Mayan healing knowledge emphasize holistic care that encompasses physical, emotional, and spiritual aspects of health. This approach is often delivered by *Curanderas* (traditional healers) and *Comadronas* (traditional midwives), addressing reproductive health through a blend of herbal remedies, massage techniques, and spiritual rituals tailored to individual needs [31][32]. These methods are especially effective in providing culturally relevant care that aligns with the community's values and beliefs, offering psychological comfort and a sense of continuity with ancestral practices [33].

In contrast, modern healthcare interventions provide biomedical approaches to reproductive health that can address acute medical needs more swiftly and manage complications that may not use traditional methods [34]. Hospital-based care, skilled medical professionals, and advanced technology are particularly effective in managing high-risk pregnancies, delivering emergency interventions, and addressing severe postpartum complications [35]. However, for many Mayan women, modern healthcare may feel alienated due to language barriers, lack of cultural

sensitivity, and experience of marginalization or misunderstanding within healthcare facilities [36]. This issue often results in lower utilization rates of modern services unless the situation is urgent.

3.8 Implications for Healthcare Integration

Traditional practices are widely preferred within Mayan communities for routine reproductive health concerns, as they are perceived to be more accessible, culturally resonant, and emotionally supportive. Modern healthcare interventions offer critical advantages in life-threatening cases, although they may be less utilized due to cultural and logistical barriers. Integrating these approaches—by combining the preventive and supportive aspects of traditional care with the technological and emergency capabilities of modern medicine—could lead to improved health outcomes [23]. The potential for collaboration between traditional healers and healthcare providers could help bridge the gap, fostering trust and providing culturally sensitive care that respects Indigenous practices while leveraging the strengths of both systems in treating reproductive health issues [37][38].

4. DISCUSSION

The [current findings interview](#) reveals critical insights into the current situation of the reproductive health of Indigenous women in Guatemala. While 51.7% of women reported using family planning methods, an almost equal percentage did not, suggesting mixed adoption of family planning practices. Contraceptive use was notably low as 39% of women indicated they use contraception, which might be due to cultural beliefs and [partnercollaborate](#) opposition being

significant barriers. Regarding the birth age of Indigenous women, 57% gave birth before 19, which indicates significant reproductive health risks. Additionally, only 15.1% of women reported that they [cannot](#) refuse sexual relations with their husbands. This issue proves the limited sexual autonomy among the Indigenous women population. Regarding access to reproductive healthcare, the [interview survey](#) shows that various barriers hinder it, as 56% of women answered they have barriers, with 67% having financial issues. Other barriers include distance from healthcare facilities and mistrust of providers.

The literature reviews emphasize the significant role of Mayan traditional medicine in addressing reproductive health issues among Indigenous and non-Indigenous women in Guatemala. Mayan healing practices, deeply rooted in cultural traditions and Indigenous knowledge, offer a holistic and community-centred approach that modern healthcare systems frequently overlook.

Traditional medicine in Mayan communities serves not only as a source of physical treatment but also as a means of psychosocial support, providing women with a sense of belonging and emotional resilience during reproductive health challenges.

In terms of physical interventions, traditional Mayan medicine has shown effectiveness in managing various reproductive health issues through methods such as herbal remedies, massage, and therapeutic rituals. These practices are tailored to the individual's unique needs and resonate with cultural understandings of health. The data collected reveals that traditional healers like *Curanderas* and *Comadronas* offer these treatments and are accessible and trusted within the community. These healers treat physically and provide spiritual guidance and emotional comfort, positioning them as integral parts of the healthcare landscape in Indigenous regions.

Compared to modern healthcare interventions, traditional practices are beneficial regarding cultural acceptability and accessibility. Many Mayan women prefer traditional practices as they

align with their beliefs. However, unlike traditional practices, modern medical interventions remain crucial in managing high-risk pregnancies and emergencies. The study finds that despite the benefits of modern healthcare, Mayan women often encounter cultural and language barriers in clinical settings that might lead to feelings of mistrust.

An important implication of these findings is the potential for a collaborative healthcare model that integrates traditional Mayan medicine with modern medical practices. The integrative approach could improve maternal and reproductive health outcomes among Indigenous women in Guatemala.

The data also highlights the essential role of family and community in Mayan medicine. Emotional and social support are crucial to a woman's reproductive health journey, which leads Mayan medicine to integrate family and community into the healing process. This psychosocial aspect is not only vital for individual well-being. Recognizing the role of family support in healthcare could enhance the responsiveness of modern practices to Indigenous women's needs.

5. CONCLUSION

The research provides critical insights into the reproductive health challenges Indigenous women face in Guatemala, emphasizing the role of traditional Mayan medicine in addressing these issues. Findings reveal that Indigenous women commonly experience health concerns related to fertility, pregnancy, childbirth, and postpartum care beyond access to healthcare and sexual autonomy. Traditional practices, such as herbal remedies, massage, and spiritual support, provide significant physical and psychosocial relief. However, these health challenges are compounded by barriers to modern healthcare, including language and cultural obstacles, limited healthcare resources in rural areas, and socioeconomic factors like poverty and limited access to education.

The study emphasizes the need for healthcare models that integrate traditional Mayan practices with modern medical interventions to create a culturally sensitive and accessible approach for Indigenous women. This integration could enhance trust, provide holistic support, and meet urgent medical needs. Furthermore, it is crucial to develop policies that recognize and incorporate the value of Indigenous medicine within the broader healthcare system, potentially through partnerships between traditional healers and healthcare providers.

Future research should evaluate the outcomes of integrated healthcare approaches over time and further investigate the intersection of cultural, environmental, and socioeconomic factors in Indigenous women's health.

REFERENCES

- [1] UNFPA, et al. "Trends in Maternal Mortality:1990-2010." *United Nations Population Fund*, 1 January 2012, <https://www.unfpa.org/publications/trends-maternal-mortality1990-2010>.
- [2] Suzuki, Emi, et al. "Progress in reducing maternal mortality has stagnated, and we are not on track to achieve the SDG target: new UN report." *World Bank Blogs*, 22 February 2023, <https://blogs.worldbank.org/en/opendata/progress-reducing-maternal-mortality-has-stagnated-and-we-are-not-track-achieve-sdg-target>.
- [3] Valdez, Mario, et al. "Reducing inequities in maternal and child health in rural Guatemala through the CBIO+ Approach of Curamericas: 1. Introduction and project description." *PubMed Central*, *Int J Equity Health*, 28 February 2023, <https://pmc.ncbi.nlm.nih.gov/articles/PMC9976357/>.
- [4] Nielsen, L. "Research on Determinants of Women's Health - Women's Health Research." *National Library of Medicine*, NCBI, 2010, <https://www.ncbi.nlm.nih.gov/books/NBK210135/>.

- [5] Thakkar, Vrushali. "Modernizing Traditional Maternal Care in Guatemala." *Think Global Health*, 12 March 2024, <https://www.thinkglobalhealth.org/article/modernizing-traditional-maternal-care-guatemala>.
- [6] McGrew, Amanda L. "A Balanced Approach to Health: Understanding the Health Care Practices of Guatemalan Maya in the United States." *DigitalCommons@Kennesaw State University*, 2011, p. 476, <https://digitalcommons.kennesaw.edu/cgi/viewcontent.cgi?article=1477&context=etd>.
- [7] "Health and Nutrition | Guatemala | U.S. Agency for International Development." *USAID*, <https://www.usaid.gov/guatemala/our-work/health-and-nutrition>.
- [8] "Health Disparities and Aging | NIA." *National Institute on Aging*, 20 May 2020, <https://www.nia.nih.gov/about/aging-strategic-directions-research/goal-health-disparities-adults>.
- [9] McMonigl, Eva. "Healthcare Access in Mayan Indigenous Communities." *The Borgen Project*, 8 March 2024, <https://borgenproject.org/mayan-indigenous-communities/>.
- [10] Sheetz, Kathleen. "Tikal | Ancient Maya City, Guatemala." *Britannica*, 8 November 2024, <https://www.britannica.com/place/Tikal>.
- [11] "Tikal National Park." *UNESCO World Heritage Centre*, <https://whc.unesco.org/en/list/64/>.
- [12] "GUATEMALA HEALTH SECTOR STUDY." *The World Bank*, 8 11 1993, <https://documents1.worldbank.org/curated/en/740261680676298328/pdf/Guatemala-Health-Sector-Study.pdf>.
- [13] Gragnolati, Michele, and Alessandra Marini. "Health and Poverty in Guatemala." *The World Bank*, 1 2003, <https://documents1.worldbank.org/curated/en/740261680676298328/pdf/Guatemala-Health-Sector-Study.pdf>.
- [14] WHO. "Increasing access to health workers in remote and rural areas through improved retention." *IRIS*, 2010, https://iris.who.int/bitstream/handle/10665/44369/9789241564014_eng.pdf.
- [15] "Teaching women's health in rural Guatemala." *Mil Milagros*, <https://www.milmilagros.org/story/teaching-womens-health-in-rural-guatemala>.
- [16] Doemel, Kaylee. "MAYAN MEDICINE: RITUALS AND PLANT USE BY MAYAN AH-MEN." *University of Wisconsin-La Crosse*, 2013,

https://minds.wisconsin.edu/bitstream/handle/1793/66629/Doemel_Thesis.pdf?sequence=1&isAllowed=y.

- [17] Francis, Gabrielle. "Discovering Mayan Massage on The Ruta Maya Adventure." *The Herban Alchemist*, 14 May 2024, <https://theherbanalchemistdr.myshopify.com/blogs/medicines-of-the-world/mayan-massage-ancient-wisdom-for-modern-women>.
- [18] Flen-Helfman, Samantha. "Traditional Mayan Maternal Health Practices in Guatemala: Reflections from a Maternal Health Pilot in the Department of Sololá, with a Practical Guide to the History, Beliefs, and Cultural Practices of Comadronas in These Communities." *ResearchGate*, 2018. *ResearchGate*, https://www.researchgate.net/publication/327049681_Traditional_Mayan_Maternal_Health_Practices_in_Guatemala_Reflections_from_a_Maternal_Health_Pilot_in_the_Department_of_Solola_with_a_Practical_Guide_to_the_History_Beliefs_and_Cultural_Practices_of_Co.
- [19] Kohrt, Brienne K., et al. "The use of formative research to culturally adapt a psychosocial support program for perinatal Mayan women in Guatemala." *SSM - Mental Health*, 2022. *ScienceDirect*, <https://doi.org/10.1016/j.ssmmh.2022.100078>.
- [20] Hernandez, Arabella Marina Nuila. "REPRESENTATIONS OF REPRODUCTIVE HEALTH: A STUDY ABOUT A MAYAN COMMUNITY IN THE WESTERN HIGHLANDS OF GUATEMALA." 1 2001, <https://etheses.lse.ac.uk/2497/1/U615446.pdf#:~:text=This%20social%20knowledge%20is%20objectified%20through%20key,and%20express%20the%20crucial%20link%20between%20representations>.
- [21] O'Keefe, Victoria M., et al. "Increasing Culturally Responsive Care and Mental Health Equity With Indigenous Community Mental Health Workers." *PubMed Central*, vol. 18, no. 1, 2019, pp. 84-92. *National Library of Medicine*, 10.1037/ser0000358.
- [22] Almorbaty, Hadeer, et al. "An integrative review of supportive relationships between childbearing women and midwives." *PubMed Central*, vol. 10, no. 3, 2022, pp. 1327-1339. *National Library of Medicine*, 10.1002/nop2.1447.
- [23] Payton, Kelsay. "Family Planning, Pregnancy, and Birth in Guatemala: Maya Women and Modern Healthcare." *Western Michigan University University Libraries*, 29 4 2015, https://scholarworks.wmich.edu/honors_theses/2539/#:~:text=The%20use%20of%20biomedi

[cal%20reproductive%20services%20remains,is%20continually%20rising%20in%20the%20adino%20populations.](#)

- [24] Baakeleng, Banabothle G., et al. “Indigenous practitioners’ views on causes of female infertility.” *PubMed Central*, vol. 28, 2023, p. 2152. *National Library of Medicine*, 10.4102/hsag.v28i0.2152.
- [25] “SEXUAL AND REPRODUCTIVE HEALTH AND RIGHTS OF INDIGENOUS PEOPLES.” *the United Nations*, 6 2014, <https://www.un.org/en/ga/69/meetings/indigenous/pdf/IASG%20Thematic%20Paper%20Reproductive%20Health%20-%20rev1.pdf>.
- [26] Bogdanova, Elena, et al. “Indigenous women’s reproductive health in the Arctic zone of Western Siberia: challenges and solutions.” *International Journal of Circumpolar Health*, vol. 80, no. 1, 2020. *Taylor & Francis Online*, <https://doi.org/10.1080/22423982.2020.1855913>.
- [27] Samuel, Jeannie, et al. “Social exclusion and universal health coverage: health care rights and citizen-led accountability in Guatemala and Peru.” *International Journal for Equity in Health*, vol. 19, no. 216, 2020, <https://doi.org/10.1186/s12939-020-01308-y>.
- [28] Ishida, Kanako, et al. “Ethnic Inequality in Guatemalan Women’s Use of Modern Reproductive Health Care.” *International Perspectives on Sexual and Reproductive Health*, vol. 38, no. 2, 2012, p. 99. *Guttmacher Institute*, <https://www.guttmacher.org/journals/ipsrh/2012/ethnic-inequality-guatemalan-womens-use-modern-reproductive-health-care#:~:text=Rather%20than%20considering%20pregnancy%20and,4%25%20of%20ladinas%2C%20considered%20the>.
- [29] Rivera, Zayra. “Reproductive Health in Rural Guatemala: Finding a medium between state and NGO Policies.” 2022. *USF Scholarship: a digital repository @ Gleeson Library*, <https://repository.usfca.edu/cgi/viewcontent.cgi?article=2552&context=thes>.
- [30] Wurtz, Heather. “Indigenous Women of Latin America: Unintended Pregnancy, Unsafe Abortion, and Reproductive Health Outcomes.” *PubMed Central*, vol. 10, no. 3, 2012, pp. 271-282. *National Library of Medicine*, [https://pmc.ncbi.nlm.nih.gov/articles/PMC3679907/#:~:text=Even%20when%20contraceptives%20are%20widely,\(Planned%20Parenthood%2C%202012\).](https://pmc.ncbi.nlm.nih.gov/articles/PMC3679907/#:~:text=Even%20when%20contraceptives%20are%20widely,(Planned%20Parenthood%2C%202012).)

- [31] "CURANDERISMO: THE PREVALENCE OF TRADITIONAL HEALING IN THE CONTEXT OF WESTERN MEDICINE." vol. 20, no. 4, 2023, https://latinostudies.nd.edu/assets/557582/volume_20_issue_4_min.pdf.
- [32] Cruz, Maria L., et al. "Traditional Healers as Health Care Providers for the Latine Community in the United States, a Systematic Review." *PubMed Central*, vol. 6, no. 1, 2022, pp. 412-426. *National Library of Medicine*, 10.1089/heq.2021.0099.
- [33] Swihart, Diana L., et al. "Cultural Religious Competence in Clinical Practice." *PubMed Central*, 2023. *National Library of Medicine*, <https://www.ncbi.nlm.nih.gov/books/NBK493216/>.
- [34] Stover, John, et al. "Interventions to Improve Reproductive Health." *Reproductive, Maternal, Newborn, and Child Health: Disease Control Priorities, Third Edition*, vol. 2, 2016. *National Library of Medicine*, <https://www.ncbi.nlm.nih.gov/books/NBK361913/>.
- [35] Institute of Medicine (US) Committee on Improving Birth Outcomes; "Reducing Maternal Mortality and Morbidity." *Improving Birth Outcomes: Meeting the Challenge in the Developing World.*, 2003. *National Library of Medicine*, <https://www.ncbi.nlm.nih.gov/books/NBK222105/#:~:text=Significant%20reductions%20in%20maternal%E2%80%94parenteral%20oxytocics%3B%20and%20uterine%20massage>.
- [36] Schooley, Janine, et al. "Factors influencing health care-seeking behaviors among Mayan women in Guatemala." *PubMed*, vol. 25, no. 4, 2007, pp. 411-421, 10.1016/j.midw.2007.07.011.
- [37] Roher, Sophie Isabelle Grace, et al. "Envisioning Indigenous and biomedical healthcare collaboration at Stanton Territorial Hospital, Northwest Territories." *PubMed Central*, vol. 82, no. 1, 2023, p. 2253603. *National Library of Medicine*, 10.1080/22423982.2023.2253603.
- [38] Lampiao, Fanuel, et al. "Communication Between Traditional Medical Practitioners and Western Medical Professionals." *PubMed Central*, vol. 4, 2019, p. 37. *National Library of Medicine*, 10.3389/fsoc.2019.00037.