This Masters Paper will demonstrate the attainment of the following four competencies:

**Foundational:**

(4) *Evidence-based Approaches to Public Health*: Interpret results of data analysis for public health research, policy, or practice.

(6) *Public Health & Health Care Systems*: Discuss the means by which structural bias, social inequities, and racism undermine health and create challenges to achieving health equity at organizational, community and societal levels.

**MCFH:**

(1) *Substantive knowledge*: Critically analyze determinants of health among infants, children, adolescents, women, mothers, and families, including biological, behavioral, socioeconomic, demographic, cultural, and health care systems influences across the life course.

(2) *Research*: Contribute to public health evidence by applying rigorous research to address problems relevant to the health of MCH populations.
Reproductive Health Interventions and Programming Targeting Indigenous Women in Latin America: A Systematic Review

By
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A paper presented to the faculty of the University of North Carolina in partial requirement of the requirements for the degree of Master of Public Health in the Department of Maternal and Child Health
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Abstract
Background: Emphasis on health equity, social justice, and attention to the needs of indigenous populations with respect to their health outcomes has emerged as a burgeoning field of study in the last few decades. Despite this shift towards social justice and equity as a cornerstone of public health practice, indigenous-identifying women in Latin America remain a marginalized population that stands at the crossroads of multiple overlapping oppressions. This positionality has negatively impacted health outcomes among this population, specifically regarding their reproductive health.

Research Questions: (1) What are the available reproductive health interventions and programs targeting indigenous women in Latin America? (2) What types of interventions and programs exist to improve the reproductive health of indigenous women in Latin America?

Data Sources: For this systematic review, searches were conducted in PubMed, Global Health, Scopus, Embase, and CINAHL of studies published between January 1960 and January 2022. All studies were conducted in Spanish or Portuguese-speaking Latin American countries.

Study Selection: 257 articles were screened, and 14 full-text articles were assessed for eligibility. Two full-text articles were excluded for not explicitly focusing on indigenous women in their study recruitment and analysis, leaving 12 studies included in the qualitative analysis.

Main Outcomes and Measures: Rates of facility-based births, woman-user satisfaction with intercultural services, incorporation of traditional birth attendants, implementation of intercultural care models, and utilization of maternal waiting homes or intercultural birth centers were assessed in the studies reviewed.

Results: Of the studies included in this review—eleven were nonexperimental analyses (one pre-posttest change design, two retrospective cross-sectional studies, and eight exploratory analyses) and one was an experimental cluster non-randomized controlled trial. All studies included Latin American women who identified as indigenous.

Conclusions: Findings showed that there are promising interventions to increase facility-based deliveries and decrease maternal mortality while incorporating indigenous worldviews and cultural identities. However, there is a notable gap in interventions regarding other aspects of women’s reproductive health outside of maternal health, including overall sexual and reproductive health education, contraception accessibility, and HIV and STI testing and treatment. Additional research and programming are necessary to understand how to promote more positive reproductive health outcomes among indigenous Latin American women.
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Introduction

Over the last few decades, there has been a global shift towards establishing and adhering to international human rights norms and applying these norms to all spheres of international relations and development. With the ratification of the Universal Declaration of Human Rights\(^1\) and the United Nations Declaration of the Rights of Indigenous Peoples\(^2\), greater attention has been dedicated to the care and support of indigenous populations worldwide given their position as historically marginalized groups that have survived genocide, the impacts of colonization and imperialism, social and political oppression and more. Indigenous groups continue to experience disproportionate rates of poverty, lack of education, overrepresentation of negative health outcomes, and socio-economic and political marginalization\(^3\)\(^-\)\(^4\). Under the auspices of these human rights declarations and the adoption of principles of health equity, public health researchers and authorities have followed this trend in research and practice to identify how these histories of oppression and survival negatively impact indigenous health outcomes globally\(^4\). While there are continual efforts to investigate the impact of indigenous identity on health outcomes, there is a continually growing research movement to build the evidence base of identified mechanisms linking indigenous identity and specific sexual and reproductive health outcomes, and to develop evidence-based solutions to promote positive health outcomes that are rooted in cultural humility and the needs of indigenous communities\(^5\).

The positionality of indigenous women in Latin America is unique in that they stand at a crossroads of oppression for both their racial and gender identities. When compared with mestizo (people of mixed indigenous and white racial identities) or white women across Latin America, indigenous women experience greater disparities in health outcomes than indigenous
men when compared to their mestizo or white counterparts. Specifically, regarding sexual and reproductive health outcomes, indigenous women experience high adolescent fertility and pregnancy rates and face elevated risks for morbidity and mortality related to unsafe abortion. Women who speak an indigenous language are less likely to have an institutional or facility-based delivery and are more likely to attend fewer than four prenatal visits. The maternal mortality rate is higher in regions where indigenous languages are predominant than in regions that speak predominantly Spanish or Portuguese. Indigenous groups across Latin America are more likely to be in remote areas with little access to Western-style health care, more likely to be low-income, and to be socially and politically marginalized, all of which come together to form co-occurring social determinants of indigenous peoples’ health. However, although indigenous women across Latin America often experience similar poor reproductive health outcomes, there is great cultural and linguistic diversity across the region and specific attention to and respect for their respective indigenous and tribal identities is paramount to any program or intervention attempting to alleviate reproductive health disparities.

Centering the experience and worldviews of indigenous groups is essential to any effective health intervention because doing so encourages intercultural dialogue and collaboration with indigenous communities to ensure that any programming is directed for and by the community which in turn engages the community and makes them stakeholders in the program, further contributing to sustainable health programming and interventions. Giving specific attention to indigenous peoples’ cultural and linguistic diversity in Latin America also acknowledges and avoids recreating the vast and violent history of interference and domination at the hands of external colonial and imperialistic groups.
This review was conducted to answer two primary research questions: (1) What are the available reproductive health interventions and programs targeting indigenous women in Latin America? (2) What types of interventions and programs exist to improve the reproductive health of indigenous women in Latin America? These questions aim to analyze the existing literature on current interventions and programming and to identify gaps in current programming and research to orient future research endeavors amongst a diverse and historically marginalized population.

Methods

Search and Information Sources

This paper followed the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) reporting guidelines.\textsuperscript{15} Five searches were conducted separately in PubMed, Global Health, SCOPUS, Embase, and CINAHL in January 2022. \textit{Table 1} shows the search terms used in each of the database searchers. (Specific search terms of the same content with tailored syntax by the database are available upon request). This search strategy yielded 257 results after filtering for full-text articles available in English or with an official English translation after 1960. No additional articles that met the inclusion criteria were included in this review.
Table 1: Search Terms Used to Complete Electronic Search Strategy

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Search terms used</th>
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<tbody>
<tr>
<td>Indigenous Women</td>
<td>&quot;Health Services, Indigenous&quot; OR &quot;Indigenous Peoples&quot; OR &quot;Indians, South American&quot; OR &quot;Indians, Central American&quot;</td>
</tr>
<tr>
<td>Women’s Health Intervention</td>
<td>&quot;Family Planning Services&quot; OR &quot;Contraception&quot; OR &quot;Health Education&quot; OR &quot;Health Promotion&quot; OR &quot;Post-Exposure Prophylaxis&quot; OR &quot;HIV&quot; OR &quot;Women's Health&quot; OR &quot;Women's Health Services&quot; OR &quot;Reproductive Health Services&quot; OR &quot;Pre-Exposure Prophylaxis&quot; OR &quot;Reproductive Medicine&quot; OR contracept* OR “Reproductive Health” OR “Birth Control” OR “Maternal Health Services” OR “Maternal Health”</td>
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<tr>
<td>Latin America</td>
<td>“Latin America&quot; OR &quot;South America&quot; OR &quot;Central America&quot; OR Mexico OR Guatemala OR Honduras OR El Salvador OR Nicaragua OR “Costa Rica” OR Panama OR Colombia OR Venezuela OR Ecuador OR Peru OR Bolivia OR Brazil OR Paraguay OR Chile OR Argentina OR Uruguay OR Cuba OR &quot;Dominican Republic”</td>
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Inclusion and Exclusion Criteria

Of the 257 studies identified, studies were continued to be reviewed if (1) the article assessed or analyzed programming targeting an aspect of women’s reproductive health excluding women’s and maternal mental health and maternal nutrition, (2) the study population explicitly but not necessarily exclusively focused on indigenous-identifying women of reproductive age (15-49 years old), (3) the study population was drawn from studies conducted in Spanish- or Portuguese-speaking Latin America, and (4) was published in English or with an official English translation between January 1960 and January 2022.
Study Selection

Two hundred and nineteen articles were screened and fourteen were assessed for eligibility. Two full-text articles were excluded for indiscriminately targeting women of all racial and ethnic identities, with no explicit reference to or focus on indigenous-identifying women, leaving twelve studies included in the qualitative analysis.

Data Extraction and Management

This review utilized Veritas Health Innovation’s Covidence systematic review software\(^\text{16}\) for title/abstract and full-text screening of all relevant articles identified through the database search, and to extract and manage the data pulled from included articles.

Figure 1: Study Selection Flow Chart

![PRISMA 2009 Flow Diagram](image-url)
Results

Study Characteristics

Among the studies selected for final review, one was an experimental non-randomized controlled trial, and eleven were non-experimental (one pre-posttest change design, two retrospective cross-sectional studies, and eight exploratory analyses). Two of the twelve studies targeted only indigenous women, two studies targeted indigenous women and traditional and health personnel, two studies targeted indigenous women and health personnel, four studies targeted indigenous women, traditional and health personnel, and community/programmatic stakeholders, one study targeted indigenous women and urban adolescents, and one study targeted indigenous women and mestizo women. Study characteristics and key findings are illustrated in Table 2.
<table>
<thead>
<tr>
<th>Source</th>
<th>Sample (n=); Target population and participants</th>
<th>Study Design; Location</th>
<th>Purpose of Study</th>
<th>Intervention Description</th>
<th>Outcome Measures</th>
<th>Summary of findings</th>
</tr>
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<tbody>
<tr>
<td>Schooley et al., 2007</td>
<td>(n=50); (n=21) clients of Casa Materna and TBAs; (n=17) female advocates and Casa Materna promoters; (n=12) male advocates (spouses, NGO staff, CHWs)</td>
<td>Non-experimental qualitative exploratory study design</td>
<td>Identify and better understand factors influencing care-seeking behavior for women's health among indigenous Mayan populations in the highlands of Guatemala</td>
<td>Casa Materna provides prenatal, postnatal, and infant health-care services, alongside family planning and well-woman health screenings. The main objective of Casa Materna is linking and referral services and providing care and monitoring during the final weeks of pregnancy for women at risk/who present signs of obstetric risk who will deliver at the local Ministry of Health hospital</td>
<td>Themes explored in interview guides: -Advocates: Barriers to accessibility and effectiveness of Casa Materna -Clients: Motivations to utilize Casa Materna, the impact of Casa Materna services, experiences at Casa Materna -Males: Barriers and motivations to utilizing Casa Materna -Staff: Factors relating to the success and effectiveness of Casa Materna</td>
<td>Themes identified: -Women's support groups at Casa Materna provided areas where women could form relationships and support each other throughout their reproductive health journeys -Supportive family/friends influence women's decisions to seek care at Casa Materna, associated with a sense of self-esteem and self-worth and was bolstered by WSGs -Perception that Casa Materna provided culturally appropriate, safe health services encouraged women to seek care -Collaboration/negotiation with community and thought leaders were effective in helping convey effectiveness of services at CM and convince people of the value of accessing care -Proven track record, high quality of care, and cultural competence offered at Casa Materna helped encourage confidence and trust in CM by the community</td>
</tr>
<tr>
<td>Gabrysch et al., 2009</td>
<td>n=217; Men and women in the project area, women who delivered in a project facility, health professionals, other actors (traditional birth)</td>
<td>Mixed methods exploratory research study design</td>
<td>Document implementation and evaluation impact of the project to increase delivery use by building trust between health-care providers and communities and</td>
<td>Introduce/implement a culturally appropriate delivery care model involving rope and bench for a vertical delivery position, the inclusion of family and traditional birth attendants in the delivery process, and the use of Quechua language</td>
<td>Themes explored in interview guides: Satisfaction with the new culturally adapted vertical delivery care model; the impact of the delivery care model on service use; sustainability of the model</td>
<td>-The culturally adapted model was introduced in 2000 by 2001 86% of births were done with a new model, by 2004 95% of births were done under the model -By October 2001 49% of local women and 72% of influential people knew about the new culturally adapted service</td>
</tr>
<tr>
<td>Study</td>
<td>Participants</td>
<td>Methodology</td>
<td>Findings</td>
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| Ruiz et al., 2012 | Woman users (18), family members of users (5), community leaders (4), MWH administrative and medical staff (5), comadronas (7), health center medical staff (2), district-level MSPAS (Guatemalan Ministry of Public Health and Welfare) rep (1), medical personnel from local hospitals (6) | Non-experimental qualitative exploratory study design | -90% of 16 women-users interviewed were satisfied with the services, felt well-attended, and would recommend it to others  
-All health professionals interviewed were satisfied with the model and felt it was successful in meeting population needs and increasing facility deliveries  
The culturally adapted model was used by nearly all women at the project health center in 2004, San Jose de Secce health center (project health center) was evaluated as the best health facility in Huanta province |
| Tucker et al., 2013 | TBAs (n=7), women from community (n=21), personnel (n=11) | Non-experimental qualitative exploratory study design | Themes explored in interview guides: use of contraceptives and antenatal control; referral to MWH, experiences in MWHs, the cultural relevance of services, activities offered during a stay at MWH, and experiences at the hospital |

Maternal waiting homes established near hospitals to support women experiencing obstetric complications or high-risk pregnancies; Provides places to stay while waiting to give birth in a facility; Goal to link in-community services to hospital/clinical services to curb high maternal mortality rates among Guatemalan women, with specific focus to burden in maternal mortality among indigenous women

Themes identified:  
-Selection and referral of women to stay at MWH  
-Cultural and economic barriers to MWH usage of appropriate care in MWHs  
-Costs of MWHs and lack of sustainable funding  
-Activities offered at MWHs  
-Hospital referrals connecting to MWHs  
-Culturally appropriate care at hospitals  
-Communication/language barriers between women and hospital staff  
-Women are unable to choose their birthing position with limited staff openness to allowing women to choose a delivery position  
-Comadronas often excluded from hospital birthing experiences
| San Andres Larrainzar and Bayalemon villages, Chiapas, Mexico | center program according to major stakeholders including health personnel at the adjacent hospital, traditional birth attendants, and indigenous women from surrounding communities | indigenous women to give birth traditionally with their local traditional birth attendant, who connects women with the hospital in case of obstetric risk or complication; Casa Materna also provides additional training to TBAs | indigenous people, experiences in the training course, relationship with health personnel, opinions on Casa Materna | -Health personnel focused on institutional hospital issues; TBAs and indigenous women focused on geographic and cultural barriers 
-Strong preference for women to give birth at home with a partera as informed by their culture 
-Casa Materna intervention focuses on improving the supply of maternal services rather than the lack of demand for services 
-No culture of collaboration between health personnel and TBAs and no precedent for intercultural exchange 
-All participants noted lack of diffusion of program as a major barrier, as success of Casa Materna hinges on ability of TBAs to connect community and hospitals, even as TBAS did not feel invested in or like partners in the program |
| van Dijk et al., 2013 | (n= 107); medical providers (n=44), Mayan midwives or comadronas (n=45), indigenous women services users (18) | Non-experimental qualitative exploratory study design | Identify and assess the extent to which health care facilities have incorporated intercultural health services that respect Mayan birthing practices and integrate them with traditional hospital-based care, as noted in MSPAS (Guatemalan Ministry of Health) policy | Guatemala Ministry of Health (MSPAS) implemented an intercultural model of maternal health services in 2008 as part of a government-wide political move to institutionalize intercultural services; MSPAS issued a Norm in 2009 outlining the specific aspects of culturally appropriate maternal health care which was then reinforced in 2010 by the | Themes explored in interview guides: 
-Providers: Planning and prep of intro of culturally appropriate care, implementation of model and results achieved 
-Comadronas: Activities related to the health facility, opinion on the extent that culturally appropriate services have been incorporated, overall experience with implemented services 
-Women users: Perceptions of quality of care | Themes identified in interviews: 
-Most facilities have initiated aspects of culturally appropriate services to varying degrees 
-Many comadronas felt disrespected by clinical providers 
-All participants agreed that efforts to incorporate intercultural services are valued by the Mayan community and will like to contribute positively to rates of facility-based deliveries 
-Overall disconnect between policy aims/medical provider perceptions and experiences of women users and comadronas 
-Overall intercultural services are in the initial/various stages of being
<table>
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<tr>
<th>Pelcastre-Villafuerte et al., 2014</th>
<th>Key informant interviews: (n=62) Coordinators and advisors (9), operations personnel and health care personnel (32), women receiving services (14), other participants (7) Analysis of “official regulatory and program documents”</th>
<th>Non-experimental qualitative exploratory study design Oaxaca, Chiapas, Ometepec, Guerrero and Cuetzala, Mexico</th>
<th>Evaluate processes and performance of Casa de la Mujer Indigena from various viewpoints (coordinators and advisors, operations personnel and health care personnel, women receiving services, other participants)</th>
<th>Community-based project for culturally and linguistically appropriate services delivery for indigenous women</th>
<th>Target topics covered in semi-structured interviews: Primary activities of the Casas; Main obstacles faced by the Casas across different contexts; main benefits for population and health services; possibility of creating a replicable intervention for other indigenous communities</th>
<th>Themes identified in interviews: -Personnel capacity and accessibility -Linguistic and cultural congruence -Perceived higher quality of care and respect in Casas due to linguistic commonalities (rather than in hospitals) -Violence prevention and victim services activities -SRH activities: Most comprehensive services in the Casas model (L&amp;D and perinatal care); TBAs are important resources and receive training for referrals for women with OB complications -Stakeholder perceptions of Casas: Increase in hospital transfers related to OB care; TBAs attend more births in the Casas than governmental health services</th>
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| Stollak et al., 2016 | (n=275); Indigenous women living in San Sebastian Coatan who gave birth between April 1, 2013, and March 21, 2014 | Mixed-methods exploratory case study design San Sebastian Coatan municipality, Huehuetenango, Guatemala | Assess extent to which Casas Maternas were being utilized by surrounding population and to understand how women address issues surrounding the decision of where to give birth, and whether Casas Maternas | 2 Casas Maternas established and supported by Curamericas; Include cultural and linguistically adapted health services, physical accessibility to community, community ownership, buy-in, and accountability, and use of local health staff; Provide L&D services and referrals | Quantitative measures: Utilization of health facilities for deliveries; Health facility utilization Qualitative measures (themes explored in interview guides): Decision about birthplace; Assessment of childbirth experience; Recommendations for improvement | Themes from qualitative interviews/focus groups: -Decision about birthplace: External influences cultural traditions (husbands, comadronas), previous birth experience, perception of distance to Casa materna, cost of childbirth (health facility perceived to be expensive but Casa Materna perceived as low-cost option) -Assessment of birth experience: Respect of cultural traditions (presence of comadronas and indigenous
<table>
<thead>
<tr>
<th>Study</th>
<th>Population Descriptions</th>
<th>Methodology</th>
<th>Findings</th>
<th>Comments                                                                                                                                                                                                kehrungsrechts/</th>
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<tr>
<td>Sanjuan-Meza et al., 2019</td>
<td>(n=65): indigenous women (n=43); adolescents (n=22)</td>
<td>Non-experimental pre/post-change study design (outcomes assessed directly post-intervention and 6 months later)</td>
<td>Assess short- and long-term knowledge, attitude, and conduct related to reproductive health and condom use through the implementation of reproductive health education program among indigenous women and group of adolescents</td>
<td>Education program implemented for 20 months and 12 months for indigenous women and adolescent groups, respectively; Education program sessions promoted education in essentials of 9 topics (SRH, physiology, and anatomy of male and female reproductive systems, assertiveness, human sexual act, STIs, contraceptive methods, pregnancy, myths and care during pregnancy, integration of knowledge); Each session included an activity, a didactic section, and a feedback session with personal tasks assigned for participants to bring into their daily lives.</td>
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<tr>
<td></td>
<td>Huasteca and San Luis Potosi city, Mexico</td>
<td></td>
<td>Reproductive health variables (Sexual relations, sexual partners, age of first sexual counter, contraceptive use in first and last sexual encounter) Knowledge, attitudes, and practices of reproductive health and condom use (% right answers) for both groups</td>
<td>Indigenous women: -Improved results in both reproductive health and condom use sections for knowledge, attitude, and practice, from pretest T0 to initial post-test T1 however knowledge index decreased at post-test T2 lower than T1 -Decrease from 45-29% in lack of contraceptive method in last sexual encounter (T0 vs. T2) — -Lower than national and state levels of lack of contraceptive use in the last encounter (Mexico and San Luis Potosi)</td>
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<td>Adolescent group: -Reproductive health knowledge and attitude index test score improved from T0 to T1, practice index test score decreased from T0 to T1 and T2 -Condom use section, knowledge, and practice improved from T0 to T1</td>
</tr>
<tr>
<td>Juarez-Ramirez et al., 2020</td>
<td>(n=294) Indigenous women over 18 with at least one delivery/birth in the last 5 years, cohorts in Oaxaca (n=145) and Chiapas(n=149); (n= 61) health care personnel from each area involved in some part of the obstetric care</td>
<td>Cross-sectional qualitative exploratory study design</td>
<td>Test the idea that indigenous women who received antenatal and delivery care in a model that incorporated an NGO were more able to navigate the process of seeking/accessing obstetric care as compared to a 2 models of care offered in rural and indigenous communities were selected (a standard model in Oaxaca and a model involving an NGO in Chiapas) were assessed to discern women's difficulties in accessing emergency OB services</td>
<td>Topics in the qualitative data collection stage: -Indigenous women: family composition, obstetric history, dignified treatment, care for pregnancy and childbirth, and quality of care -Healthcare providers: Maternal health care process and quality of care -Themes identified in qualitative interviews: Chiapas *NGO supported model (incorporation of respectful childbirth model) -Overall themes for indigenous women: access, communication and training, respect, maltreatment and abuse, freedom to choose a method, position, and location of birth -Overall themes for services providers: lack of training, lack of necessary</td>
</tr>
<tr>
<td>Study</td>
<td>Sample Size</td>
<td>Study Design</td>
<td>Study Details</td>
<td>Primary Outcomes</td>
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<tr>
<td>Austad et al., 2021</td>
<td>n= 30; 17 mothers who received OCN accompaniment; 13 staff (physicians, social workers, nurses) of the main public hospital in OCN pilot program catchment area</td>
<td>Non-experimental qualitative exploratory study design</td>
<td>Utilization of bilingual (Spanish and Maya-speaking) women from the community, trained as obstetric care navigators, to strengthen the weak referral chain between homebirths and hospital deliveries</td>
<td>Primary outcomes: Perceived motivators of home birth with traditional midwives/barriers faced by Maya mothers to facility-level OB care; Understanding of OCN's intended purpose and activities, program impacts (positive and negative) on quality of care and experience of patients and providers; Problems unaddressed by OCN program; Secondary mother-specific outcomes: Personal interactions with OCNs; Whether experiences with OCNs during referrals changed perceptions of the health system</td>
</tr>
<tr>
<td>Duenas Matute et al., 2021</td>
<td>(n=4213) 1560 indigenous women; 2653 mestizo women</td>
<td>Cross-sectional retrospective study</td>
<td>Evaluate the impact of the intercultural childbirth model initiated in 2007 on utilization of intercultural versus conventional childbirth deliveries among indigenous vs mestizo</td>
<td>Utilization of intercultural delivery was primarily adopted by Kichwa women (19.4% of the total sample group vs 80.6% of the overall sample group chose Western-style delivery) but squatting and...</td>
</tr>
<tr>
<td>Study Authors, Year</td>
<td>Study Design</td>
<td>Intervention Details</td>
<td>Primary Outcomes:  Childbirth and neonatal complications, perinatal deaths, postnatal complications</td>
<td>Secondary Outcomes: Traditional childbirth, access, and experience in Western healthcare, food intake, reduction of heavy work, cost of health care</td>
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| Sarmiento et al., 2022 | Pragmatic parallel-group cluster randomized controlled non-inferiority study design | Women who completed pregnancies during study period from Nahua, Na savi, Me'phaa, Nancue nomndaa Indigenous groups in Guerrero, Mexico | - Lower rates of primary outcomes (childbirth/neonatal complications, perinatal death; RD -0.06, 95% CI -0.09 to -0.02)  
- Reported more traditional childbirth (RD 0.10, 95% CI 0.02 to 0.18)  
Among institutional childbirth, reported more traditional management of placenta but more non-traditional cold-water baths, among home-based births, had fewer postpartum complications (all in comparison to experiences in control communities) |  

San Luis de Otovalo hospital, Otovalo, Imbabura, Ecuador  
Maternal mortality and the preference of Kichwa and mestizo women to the intercultural delivery model versus Western-style delivery  
Luis de Otovalo hospital to incorporate the knowledge, beliefs, and rituals of pregnant Kichwa women to reduce maternal mortality  
Women; Maternal mortality  
Kneeling delivery positions were most common across Kichwa and mestizo women  
MMR in Ecuador were 63 and 59 deaths per 100,000 in 2015 and 2017, MMR was 0 per 100,000 in that period |

30 traditional midwives and apprentices received a monthly stipend and support from a trained intercultural broker, while local health official personnel attended workshops for improving attitudes towards traditional midwifery (4 components: material support, apprentice support, sensitization training for staff in local government health centers, intercultural health brokers)  
Women in intervention communities:
**Content foci**

Of the twelve studies included in this review, five studies evaluated programming focused on engaging indigenous women in obstetric care and encouraging facility-based delivery through the utilization of maternal waiting homes (MWHs) and culturally appropriate birth centers. Four studies assessed how the incorporation of culturally appropriate and/or intercultural care models impacted facility-based delivery and user satisfaction. Two studies assessed the impacts of programming centered around personnel support for local midwives and care navigation. One study investigated the long- and short-term impacts of a sexual and reproductive health education program. Findings are organized below by content focus.

**Birth Centers and Maternal Waiting Homes**

Stollack et al. 17, in their analysis of the Casas Maternas project developed by Curamericas in Guatemala to increase rates of facility-based deliveries, found that 69.8% of all survey respondents in partner communities (being those communities that self-selected to be supported and support a Casa Materna in their community) delivered in any kind of health facility, while 54.4% of those respondents who delivered in a health facility, did so in a Casa Materna 17. However, in non-partner communities (communities that did not take part in the intervention), only 30.2% of women delivered in any form of health facility, with 17.4% delivering in a Casa Materna (Casas were open to all women regardless of community membership) 17. While there was no statistically significant difference in the percentage of facility births by education level within partner communities, in non-partner communities there was a suggestion of increased health facility utilization by education. Similar patterns were found regarding the wealth quintile across partner and non-partner communities, suggesting
that the Casas Materna model as developed by Curamericas contributes to increased utilization
and more equitable access to facility-based delivery\textsuperscript{17}.

A different Casa Materna project in Guatemala, developed by Project Concern
International, was analyzed by Schooley et al.\textsuperscript{18}; Their research instead focused on the driving
factors for indigenous women to seek healthcare of any kind (including prenatal, postnatal,
infant care, family planning, and well-woman screenings) at a Casa Materna\textsuperscript{18}. A major
component of engagement with indigenous women was the women’s support circles hosted at
the Casa, which fostered relationships and self-esteem/self-worth within the participants,
which encouraged them to seek more care at the Casa\textsuperscript{18}. Simultaneously, factors that
encouraged community participation and buy-in were Project Concern International’s
willingness to collaborate and negotiate with the local indigenous community to ensure that all
services were culturally acceptable and reflected the needs of the community\textsuperscript{18}. This
relationship between the NGO supporting the Casa Materna and the community also engaged
local opinion leaders to spread the effectiveness and sensitivity of services at the Casa and
helped convince the community of the value of seeking care, creating an opinion cascade in
which the Casa was able to build on their positive track record of care and relationship of trust
and mutual respect with the community to encourage local women to seek care at the Casa\textsuperscript{18}.

Tucker et al.\textsuperscript{19} analyzed the feasibility and acceptability of a similar model of care also
called the Casa Materna in the Chiapas region of Mexico (unaffiliated with the Curamericas
model in Guatemala) in which the Casa Materna is a birth center and serves as a referral
mechanism for complex and high-risk obstetric cases\textsuperscript{19}. Barriers to utilization of the Casa
Materna as noted by staff versus traditional birth attendants (TBAs) and indigenous women
users were relatively different, in that providers focused on institutional barriers while TBAs and indigenous women noted the strong cultural preference to give birth at home, and a general perception that giving birth in a facility of any kind could mean lapses in communication due to language barrier and a lack of respect for cultural traditions and preferences by biomedical staff\textsuperscript{19}. TBAs also reported feeling disconnected from the Casa Materna program, a huge oversight given that they were considered a central driver to potential program success in engaging indigenous women in facility-based care. Tucker et al. noted that this Casa Materna program attempted to increase the supply of facility-based maternal health services, without addressing the lack of demand for a wider range of services among indigenous women\textsuperscript{19}.

Another community-based project in Mexico, the Casa de la Mujer Indigena, was assessed by Pelcastre-Villafuerte\textsuperscript{20} to evaluate the effectiveness and performance of the programming, under the mission of the Casa to provide community-based, culturally, and linguistically appropriate services for indigenous Mexican women\textsuperscript{20}. Drivers to utilization and engagement with the Casa de la Mujer Indigena included higher perceived respect and care for indigenous culture and health preferences because of cultural and linguistic commonality, the availability of TBAs pulled from the local community, and the availability of comprehensive services including labor and delivery and perinatal care\textsuperscript{20}. Impacts of the program as noted in interviews with women-users, TBAs, and other local stakeholders included increases in hospital transfers for obstetric care through referrals from TBAs, greater TBA attendance for births within the Casa than in other governmental health facilities, and increased awareness for domestic and intimate partner violence and sexual and reproductive health issues among users
due to Casa-based violence prevention, victim services, and overall health education programming\textsuperscript{20}.

In their exploration of the drivers and barriers to MWH utilization in Guatemala, Ruiz et al. \textsuperscript{21} found that the few women who had stayed at an MWH had received antenatal care from their local comadrona (Guatemalan traditional birth attendant) before being referred to an MWH or were referred by the local hospital to wait if they lived too far away from the health facility but were a complex or high-risk case that needed to be monitored throughout the labor process. Barriers to MWH utilization included that many husbands or mothers-in-law would decide the location of the birth (often at home), husbands did not want their wives to be seen by a male provider during a facility-based delivery regardless of the facility, and women wanted to be cared for by their comadronas and were worried about accessing culturally relevant and specific care such as access to Mayan steam baths, traditional drinks, traditional birth positions\textsuperscript{21}. The lack of sustainable funding for MWHs and the resulting cost of care to the pregnant women, who had to pay for their stay and meals at certain MWHs, was also a noted barrier by the comadronas and women-user participants\textsuperscript{21}.

\textit{Intercultural and Culturally Appropriate Care}

Gabrysch et al. \textsuperscript{22} assessed a model of intercultural care that incorporated family and traditional birth attendants, Quechua language, and traditional delivery positions into the birthing process in the Peruvian highlands in 2001. Of the women users who were interviewed, 90\% felt satisfied with services, felt they were well-attended during their facility-based birth, and would recommend it to others. All service providers who participated in the assessment were also satisfied that the model was meeting population expectations and needs and
increasing facility-based deliveries\textsuperscript{22}. The percentage of facility-based deliveries increased from 6\% in 1999 to 85\% in 2007 with 95\% of overall deliveries in the community happening under the supervision of skilled attendants whether at home or a health facility. The installation and implementation of this model also contributed to San Jose de Secce health center, the primary health center in the model, being named the best health center in the province in 2004\textsuperscript{22}.

Juarez-Ramirez et al.\textsuperscript{23} analyzed the impact of a similar model of care implemented in Chiapas, Mexico in comparison to outcomes in the Oaxaca state under the traditional, non-culturally adapted model of care. The model analyzed by Juarez-Ramirez incorporated the support of a non-governmental organization (NGO) to provide culturally sensitive antenatal and delivery care to increase the accessibility of facility-based deliveries. Juarez-Ramirez et al. found that the reasons that indigenous women didn’t access facility-based services across both models in Oaxaca and Chiapas were markedly different from the perceived reasons for lack of utilization by health providers in both states\textsuperscript{23}. Reasons given by indigenous women in Oaxaca and Chiapas were lengthy waiting times, that health centers were often closed, and lack of childbirth support from traditional attendants or midwives, and lack of financial support to access a health facility. Health providers across Oaxaca and Chiapas reported their perceptions that indigenous women did not access timely care due to finances, language barriers, cultural limitations, and because they perceived indigenous women as not habitually making decisions on their own\textsuperscript{23}. In Chiapas under the NGO-supported model, 97.7\% of women who participated in the study had established antenatal care during their first trimester and 89\% of participants had a normal delivery at the local Casa Materna or in the hospital\textsuperscript{23}.
In their analysis of the implementation and incorporation of intercultural services in health facilities as required by the Guatemalan Ministry of Health, Van Dijk et al.\textsuperscript{24} found mixed outcomes as to the extent of implementation of intercultural services, the satisfaction of the women utilizing said services, and the relationship between health professionals and the comadronas, Guatemalan traditional birth attendants. While all groups who took part in the study agreed that the efforts to incorporate intercultural care were meaningful to the local Mayan community and would likely contribute to the rate of facility-based deliveries, many of the participating comadronas felt at odds with health staff\textsuperscript{24}. Many felt grateful to have been able to learn from the health staff, but they often felt disrespected or made to be like the staff by being told to wear white coats or having their traditional birthing practices ‘corrected’ by service providers\textsuperscript{24}. Many women who had given birth at health facilities did not feel that they were offered culturally appropriate care but would have liked the option\textsuperscript{24}. Overall, Van Dijk et al. found that while intercultural practices were being implemented unevenly across health centers in Guatemala, major barriers to success included a lack of sustainable funding to keep comadronas on staff or on-call, the medicalization of the role of the comadrona, and the overall power imbalances between health staff and comadronas.

Duenas Matute et al.\textsuperscript{25} conducted a quantitative analysis of the impact of an intercultural childbirth model originally initiated in 2007 to prevent maternal mortality and incorporate the delivery preferences of Kichwa and mestizo women in the Otovalo region of Ecuador. The research team found that the intercultural model of delivery was chosen by 19.9% of the overall sample group of Kichwa and mestizo women, with roughly 42.2% of Kichwa participants choosing the intercultural model. The most common delivery position was
squatting or kneeling across both Kichwa and mestizo women who chose the intercultural childbirth model\textsuperscript{25}. Duenas Matute et al. also noted that the overall maternal mortality ratio in Ecuador, 63 and 59 mortalities per 100,000 births in 2015 and 2017 respectively, to the maternal mortality ratio in the Otovalo, zero mortalities per 100,000 births in the same years (2015 and 2017) and has remained as such since 2008, the year after the intercultural childbirth model was installed. Given the success of this program since its inception, the Ecuadorian government has since expanded this model throughout the country and codified it into public policy under the Ministry of Public Health\textsuperscript{25}.

\textit{Personnel Support and Care Navigation}

Sarmiento et al.\textsuperscript{26} conducted a pragmatic parallel-group cluster randomized controlled non-inferiority trial to assess whether providing support to traditional midwives on their terms would increase cultural safety without negatively impacting maternal health outcomes across partner and non-partner communities in southern Mexico. For women in program-partner communities, there were lower rates of childbirth and neonatal complications, and perinatal death, and the women reported more experiences of traditional childbirth (at home, utilizing traditional methods and practices)\textsuperscript{26}. Among women in partner communities who had facility-based births, they reported more traditional management of the placenta but more experiences of non-traditional cold-water baths; Women in this group also experienced fewer postpartum complications in comparison to non-partner communities\textsuperscript{26}. Overall, the program was considered successful in providing support to midwives that incorporated culturally specific and sensitive care increased patient satisfaction and facility-based births without negatively impacting maternal or perinatal health outcomes\textsuperscript{26}. 

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Austad et al.²⁷ assessed the experiences of indigenous women and hospital staff (physicians, social workers, nurses) in Guatemala who took part in an obstetric care navigator (OCN) pilot program, the goal of which was to facilitate increased referrals from the community and improve facility-based obstetric care in Chimaltenango, Guatemala. Austad et al. found that the perceived benefits of the OCNs were improving communication between patients and providers, given their position as bilingual community members, streamlining coordination between community and hospital-based services, and providing emotional and doula-like support to patients during obstetric appointments. However, there were often disconnects between service providers at the hospital, and the OCNs in that the former perceived that OCNs should be able to perform more supportive and clinical tasks to make up for the lack of staffing at the hospital²⁷. OCNs were also often unable to follow the patients they supported postpartum which caused some discomfort and confusion among indigenous women as they navigated the care system postpartum for themselves and their infants²⁷. Overall, Austad et al. found that the OCN program and the subsequent referrals supported by the OCNs increased the number of facility-based deliveries for local indigenous women by two times within the study period.

**Sexual and Reproductive Health Education**

Sanjuan-Meza et al.²⁸ assessed the long- and short-term retention of information and the impact of actions and attitudes of a sexual and reproductive health program among indigenous women in the Huasteca region of Mexico, and urban adolescents in San Luis Potosi City of Mexico²⁸. Indigenous women showed improved results in reproductive health and condom use sections for knowledge, attitude, and practice from the initial posttest (T1)
immediately following the conclusion of the education program but at the second posttest (T2), 6 months after the conclusion of the program, overall knowledge on both aspects of the posttest (reproductive health and condom use) decreased below that of T1\textsuperscript{28}. There was also a decrease in the use of any contraceptive method during their last sexual encounter among indigenous women from T1 with 45\% of respondents to T2 with 29\% of respondents\textsuperscript{28}. Sanjuan-Meza et al. concluded that while the short-term impact of the reproductive health program was positive in terms of both knowledge, attitude, and practice in participants’ daily lives, there is a necessity for continuous and consistent messaging and programing for Mexican indigenous women on sexual and reproductive health.

**Discussion**

While there are a few women’s health interventions and programs that are specifically tailored to the needs of indigenous women (the majority of which focus on addressing maternal mortality with moderate success) this review shows that there remains a substantial gap in research addressing other aspects of women’s health such as reproductive health education and contraception access\textsuperscript{29}. The primary research question of this review aimed to identify current women’s reproductive health interventions that were developed for, developed with, or inclusive of indigenous women, and to ultimately understand the impact they have on various women’s reproductive health outcomes.

As mentioned above, a substantial number of interventions were focused on addressing and decreasing maternal mortality through the implementation of maternal waiting homes, intercultural birth centers, and incorporating indigenous models of birthing and delivery into
biomedical facility-based care\textsuperscript{18-21}. Among the five studies focused on measuring the impacts and community perceptions of maternal waiting homes and intercultural birth centers, common themes of lack of effective communication whether due to language barrier or difference of opinion, and lack of perceived respect for indigenous birthing traditions by service providers was reflected in woman-participant and traditional birth attendant interviews and focus groups\textsuperscript{18-21}. Traditional birth attendants across indigenous groups, countries, and intervention groups often reported feeling that their expertise and experience were not respected by service providers. Conversely, many participating service providers (doctors, nurses, hospital-based social workers) reported being ignorant of indigenous traditions, often because of a lack of training on the subject or perceiving indigenous women to not be in control of their birthing decisions due to the influence of their husbands or mothers-in-law. Despite these limitations, many of the programs reviewed were able to achieve their goals of increasing facility-based births and connecting indigenous women with high-risk or complex needs pregnancies to hospitals through community-based referrals, often through the engagement of traditional birth attendants\textsuperscript{18-21}. These findings are consistent with previous research in targeting similar populations in other settings\textsuperscript{29-30}, suggesting that the implementation of maternal waiting homes and intercultural birth centers could likely have positive impacts in other settings and amongst other indigenous populations in Latin America.

The same themes of lack of communication and mutual respect for indigenous traditions and culture were often identified as barriers to successful implementation and adaptation of the four models of intercultural care that were assessed and reviewed in this paper\textsuperscript{22-26}. Another barrier to the successful implementation of intercultural models of care,
specifically those that were implemented in health facilities and hospitals, was a lack of knowledge on the part of service providers about current policies in place that promoted the practice and offering of intercultural care, whether on an institutional or governmental level. The review of the studies assessing intercultural care models also revealed that many of the models of care were unequally implemented across care facilities or were implemented without proper training and support of the service providers or traditional birth attendants that were central to the respective models of care.

The secondary research question of this review aimed to assess the range of interventions and types of targeted outcomes currently in process or that have been studied that explicitly focus on indigenous women’s reproductive health. This review did not identify any studies conducted utilizing community-based participatory research methods. No interventions reviewed in this paper were explicitly developed in tandem with indigenous women of reproductive age, nor did any interventions address the provision of culturally appropriate or culturally humble sexual health or family planning education services. The only study reviewed that focused on sexual health education provided a non-culturally specific curriculum that was the same for participating indigenous women and the urban adolescent group. The findings of this review indicate a large gap in research regarding women’s reproductive health among indigenous populations in Latin America.

While there were many barriers to utilization and overall success of the interventions identified, the studies reviewed also offer positive findings in the realm of preventing maternal mortality and connecting indigenous women with the services they need to have normal, healthy deliveries, with special attention to respecting their cultural traditions and individual
birthing preferences\textsuperscript{22-25}. While none of the interventions reviewed are unique to the indigenous Latin American setting, the successes of these adapted interventions and care models in their goals of decreasing maternal mortality and increasing indigenous women’s access to care are promising for future research and programming endeavors. The overall content of this review supports the hypothesis that incorporating the cultural preferences and needs of marginalized populations, especially in the scope of care delivery and content, not only does not worsen women’s health outcomes but often positively impacts overall health outcomes for the target population. Again, this finding is in line with findings from previous research on the positive impacts of centering indigenous communities when researchers or public health officials are seeking to address health disparities or negative health outcomes\textsuperscript{29-30}.

Limitations

Given the vast majority of included studies were non-experimental and observational in their research methods, all eleven non-experimental studies are subject to performance, detection, and reporting bias. In addition, all participants in these studies were aware of the intervention or program in place and were asked to report their opinions on and experience with said intervention, which puts in question the external validity of our conclusion and recommendation.

The populations targeted in each of these studies were also limited to women and girls identifying as indigenous within the Spanish/Portuguese-speaking Latin American context\textsuperscript{17-28}; Given that the sampling techniques were limited demographically, the ability of these findings to be generalized past these specific indigenous contexts in which the research was conducted
is severely limited. In line with the demographic limitations and specific target population, all recruitment methods are subject to selection bias in that many studies did no direct recruiting in the community, but instead chose to install their program at a specific facility and proceeded to assess the utilization of those services by indigenous women in their respective communities.

Another limitation of this review is that only peer-reviewed, published articles were included in this review; all grey literature and unpublished research were excluded, thus excluding any internal analyses of programming or interventions primarily carried out by each country’s respective Ministry of Health if it was not published.

There are also important limitations to the process utilized to create this systematic review. This review was conducted (creation of search terms, screening of articles, and full-text analysis of potential articles) and written by an individual researcher which increases the likelihood that certain articles that would have met inclusion criteria were missed. Only full-text articles that were accessible to the researcher were included, further increasing the likelihood of missing articles that are relevant to the research questions driving this review.

**Conclusion**

Indigenous-identifying women in Latin America experience disproportionate rates of negative reproductive health outcomes in comparison to other Latin American women. While interventions involving maternal waiting homes, intercultural birth centers, and the incorporation of culturally sensitive care have contributed to improved overall reproductive health outcomes, these interventions target maternal health and perinatal outcomes. The purpose of this review was twofold: (1) to systematically scan and analyze the literature on
interventions and programming targeting women’s reproductive health outcomes among
women of indigenous identity in Latin America and (2) to analyze the types of interventions and
range of targeted reproductive and sexual health outcomes of currently studied interventions
that focus on the health of indigenous women in Latin America. Findings from this review show
that there are health interventions that contribute to positive maternal health outcomes and
increase facility-based births. However, there is a limited range of interventions that target
other reproductive health outcomes. While the incorporation of health equity and community-
centered interventions is in the early stages of development and implementation, more
research and investigation must be conducted focusing on the full range of reproductive health
outcomes for indigenous women in Latin America.
References:


