Perceptions, knowledge, and practices of breastfeeding in indigenous regions of Mexico during Covid-19 pandemic

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Abstract

Objective. To explore the perceptions, knowledge, and practices of breastfeeding in the context of Covid-19 of pregnant and postpartum women, midwives, and health providers in an indigenous region of Chiapas, Mexico. **Materials and methods.** Qualitative thematic analysis study involving semi-structured interviews (n = 46) with pregnant women (n = 19), postpartum women (n = 6), health providers (n = 10, i.e., doctors/nurses), and midwives (n = 11). **Results.** Among mothers, 47% (n = 11) did not know if Covid-19 is transmitted through breastfeeding. They mentioned that they would stay away from their newborns if infected. Health providers and midwives have not received education or any supporting material on the value of breastfeeding during Covid-19 infection. **Conclusion.** Breastfeeding mothers' promotion and counseling remain poor in indigenous communities and have worsened during the Covid-19 pandemic. Breastfeeding training among health providers and midwives should be provided or strengthened even more in emergency situations.

Keywords: breastfeeding; indigenous; Mexico; Covid-19; midwives; health providers

Morales-Domínguez MC, Bonvecchio-Arenas A, Lozada-Tequeanes AL, Unar-Munguía M, Haycock-Stuart E, Smith P. Percepciones, conocimientos y prácticas sobre la lactancia materna en regiones indígenas de México durante la pandemia de Covid-19. Salud Publica Mex. 2023;65:370-376.
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Resumen

Objetivo. Explorar las percepciones, conocimientos y prácticas de la lactancia materna en el contexto de Covid-19 desde mujeres embarazadas y posparto, parteras y proveedores de salud en una región indígena de Chiapas, México. **Material y métodos.** Estudio de análisis temático cualitativo que incluyó entrevistas semiestructuradas (n = 46) con gestantes (n = 19), puérperas (n = 6), proveedores de salud (n = 10, es decir, médicos/enfermeras) y parteras (n = 11). **Resultados.** Entre las madres, 47% (n = 11) no sabía si el Covid-19 se transmite a través de la lactancia materna. Mencionaron que si estaban infectadas, se mantendrían alejadas de sus recién nacidos. Los proveedores de salud y las parteras no recibieron ningún material de apoyo sobre el valor de la lactancia materna durante la infección por Covid-19. **Conclusión.** La promoción y el asesoramiento de las madres lactantes siguen siendo deficientes en las comunidades indígenas y han empeorado durante la pandemia de Covid-19. La capacitación en lactancia materna entre los proveedores de salud y las parteras debe proporcionarse o fortalecerse aún más en situaciones de emergencia.

Palabras clave: lactancia materna; indígena; México; Covid-19; parteras; proveedores de salud

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The adoption of breastfeeding practices in Mexico is far from optimal. According to the *Encuesta Nacional de Salud y Nutrición* 2018-19 (Ensanut 2018-19), the prevalence of exclusive breastfeeding (EBF) in children under six months was 28.3% in the entire country; 47.4% in the South, 36.4% in rural areas, and 38.9% among indigenous people; which is low when compared to the Latin American region.[1] Although breastfeeding practices are higher among indigenous people compared with national figures, no improvements were seen in the last 10 years, while for non-indigenous women all breastfeeding indicators have improved.[2]

In all socioeconomic settings, breastfeeding is considered to improve the survival of neonates and infants and provide them with lifelong health and development benefits.[3-6] At the beginning of the Covid-19 pandemic, there was misinformation and fear of transmitting the virus through breastmilk from mothers with SARS-CoV-2 to their babies, which could have negatively affected the promotion and practice of breastfeeding.[6] Some studies mention that by avoiding direct breastfeeding the chances of newborns being infected droplets from the mother are reduced.[7-9] This recommendation did not consider the long-term impact of separation which results in the loss of protection that breast milk provides to the newborn. Also, represented a challenge for the promotion of breastfeeding among women, as they were unclear whether their breast milk could infect their babies.[10,11]

The World Health Organization (WHO) recommended breastfeeding newborns with Covid-19 if the health status of the mother and the newborn allows it and when appropriate respiratory hygiene measures are followed.[12] Thus, the promotion and counseling on breastfeeding take on greater value and relevance in the context of the Covid-19 pandemic, given its immunological benefits.[13,14] In addition, the economic benefit of breastfeeding reduces family spending in relation to the use of milk formulas.[15]

Before the pandemic, indigenous pregnant women received a lower quality of care,[16,17] and the proportion of delivery care with midwives was higher than non-indigenous women in Mexico.[18] The majority of indigenous groups in the Altos de Chiapas region perceive the practice of breastfeeding positively,[17] but not necessarily EBF.[19] Some of the restrictions during the pandemic limiting the promotion of breastfeeding were, for example, the temporary separation of mothers from their babies at birth when a Covid-19 infection was suspected or confirmed.[6,20]

This situation has led to a question, under what conditions do pregnant women, postpartum women, midwives, and health providers in southern Mexico face breastfeeding measures during the Covid-19 pandemic? Considering that during the pandemic, reliable and valid information on breastfeeding was lacking, not only for perinatal women, but also for health providers and midwives themselves. Thus, it could have reduced confidence in promoting adequate breastfeeding practices in these communities. The results of this study will contribute, first, to show how doctors and midwives were not trained during the pandemic and, as a consequence, women did not have clear information about what to do if they get Covid-19 and how to breastfeed, increased barriers to the practice of breastfeeding in the indigenous populations of Mexico. Second, it empirically contrasts the findings of previous studies on Covid-19 and breastfeeding, highlighting that these practices are conditioned by the socioeconomic conditions of women and the preservation of their uses and customs, and not only by medical recommendations.

Materials and methods

Study design

This qualitative study adopted a thematic analysis,[21] of 46 semi-structured interviews conducted between December 1, 2020, and February 28, 2021, amid the pandemic. Interviews conducted at the medical unit were face-to-face and those outside the medical unit were conducted online, via Google Meet, or by phone.

Setting

The region of Los Altos in the State of Chiapas, Mexico is a unique region in Mexico, with the largest number of indigenous people per square kilometer. It is characterized by its dispersed indigenous populations located in relatively geographically inaccessible villages. Most of the municipalities have less than 30 000 indigenous inhabitants.[22]

Recruitment and selection of participants

Permission was requested from the medical unit (Casa Materna) *to carry out the research*

The inclusion criteria for this study were being 18 years or older, pregnant, or within 42 days after delivery, and receiving prenatal or postnatal care at the selected medical unit. Initially, participants were invited to voluntarily participate during their medical consultation. However, due to the lack of attendance caused by the pandemic, online interviews were adopted. The same selection criteria were maintained, and the snowball technique was used

to contact more women. After conducting 25 interviews, theoretical was reached saturation,[23] indicating that no more relevant information was found about breastfeeding and Covid-19. All interviews were conducted in Spanish, a common second language, understood by women who spoke an indigenous language. The healthcare providers and midwives interviewed were all those who worked at the health unit where women were recruited.

Ethical considerations

This study was approved by the ethics, research, and biosafety committees of the *Instituto Nacional de Salud Pública*. Informed consent was obtained prior to the interviews and the study's objective was explained to all participants. The informed consent was read to the participants, while for online interviews, the consent letter was sent to the participants in PDF file format via WhatsApp.

Data analysis

To explore the subjective experiences of participants regarding breastfeeding and Covid-19, thematic analysis based on the theory of phenomenology was used. Considering that themes were not exclusive to one type of participant questions used in the guides were similar for the different informants, for example: Do they think Covid-19 is transmitted through breastfeeding? Have they received information on the topic? What practices would they implement regarding breastfeeding and a possible Covid-19 transmission? Among other questions. This methodology allowed for triangulation of information among participants.[24] The transcripts of the interviews were analyzed using Atlas.ti software, and a rigorous analysis was conducted,[25] reviewing the data multiple times to ensure coherence among the concepts, categories, explanations, and interpretations. Afterwards, the themes were discussed to isolate personal assumptions. No interviews were repeated, and relevant testimonials were translated into English for analysis and publication purposes.

Results

Description of the study population

Table I presents the sociodemographic characteristics of the women. Most of the interviewed women were pregnant (19 women), while six had recently given birth. Of the 25 women interviewed, 10 spoke an indigenous language in addition to Spanish. The average age of the interviewed women was 27 years old.

Of the 21 midwives and health providers interviewed, the average age was 46 years, and ten of them were between 50 and 59 years of age and 16 of them have more than 15 years of experience as midwives or health providers (table II).

Descriptions and analysis of the identified themes

Theme 1. Perception about the transmission of Covid-19 through breastfeeding

Our study found that the majority of women believe that Covid-19 can be transmitted through breastfeeding and would avoid nursing their infants if they suspected being infected. Some believed that wearing a mask while breastfeeding was a viable option, while others thought that all maternal illnesses were transmitted through breast milk. Lack of specific information from healthcare providers and midwives contributed to confusion and uncertainty among women.

> "So far, there is no document stating that a woman cannot breastfeed except for the possibility of not being able to do so due to a physical limitation, such as having a tubed breast" (health provider, 1).
> "If infected, a woman should definitely take precautionary measures, including very selective isolation to prevent spreading the infection" (midwife, 4).
> "I believe that we should take precautions when a woman is infected, as breast milk is part of a mother's body and could transmit the infection" (pregnant woman, 1).

Theme 2. Breastfeeding practices and promotion during Covid-19

The knowledge and perceptions of healthcare providers and midwifes interviewed hindered its promotion during the pandemic. The majority were unaware of the recommended duration of exclusive breastfeeding and believed that breast milk was insufficient to meet their babies' nutritional needs.

Midwives reported that poor families value commercial formula for infant feeding, and there is a lack of understanding of the importance of giving colostrum. Moreover, we should consider that these interviewed women mostly have only a basic level of education, which could influence their perception of the importance and practice of breastfeeding.

Regarding training, the midwives and healthcare providers interviewed reported that they had not received specific training on breastfeeding and Covid-19.

Table I
SOCIODEMOGRAPHIC CHARACTERISTICS OF PREGNANT AND POSTPARTUM WOMEN INTERVIEWED IN INDIGENOUS COMMUNITIES OF MEXICO DURING COVID-19

Demographic variables n=25	*Category*	*Frequency*
Age (years)	17-21	6
	22-26	6
	27-31	6
	32-36	4
	37-42	3
Marital status	Married	24
	Single	1
Education	None	6
	Basic school	14
	Bachelor's degree	5
Employment	Housewife	20
	Employee	5
Speak indigenous language	Yes	10
	No	15
Do you know if Covid-19 is transmitted through breastfeeding?	Yes	6
	No	18

Table II
DESCRIPTION OF SOCIODEMOGRAPHIC CHARACTERISTICS OF HEALTH PROVIDERS AND MIDWIVES INTERVIEWED IN INDIGENOUS COMMUNITIES OF MEXICO DURING COVID-19

Sociodemographic variables	*Category*	*Frequency*
Staff type	Midwives	11
	Health providers	10
Age (years)	30-39	8
	40-49	3
	50-59	10
Years of service	1-15	5
	15-24	10
	25-34	2
	35-44	4

Also, women were confused about what to do in this pandemic context, many continued their practices without being sure of their safety. The healthcare providers interviewed mentioned that they had only received a distance learning course on "what is coronavirus?" without any specific information on breastfeeding.

> "No, we have taken that course, what we were once recommended refers to the woman and the newborn, but it is not something that is already established yet it is what is known" (health provider, 1).

Many did not perceive the risk of Covid-19:

> "Some people are stubborn, especially those who live in communities. Often, phrases like 'Nothing is wrong, everything is fine' are heard. However, it is important to remind them that even though there may be no diseases in their community, I could be a carrier of the virus and infect them, even if they do not show symptoms" (midwives, 8).

For instance, midwives did not receive any kind of training by the time the study was conducted. The interviews with healthcare providers and midwives pointed out the difficulty of convincing women who already brought bottles and powdered milk when they arrived at the medical unit to give birth, and without having official information about Covid-19 and breastfeeding, only general advice on care was provided.

The lack of specific information and training on breastfeeding and Covid-19 by healthcare providers and midwives hindered the promotion of breastfeeding, along with women's fear and misconceptions about breast milk and Covid-19, interfering with breastfeeding practices in this vulnerable population.

Theme 3. Barriers to maternal care experienced by pregnant or post-partum women due to the Covid-19 restrictions

During the analysis of experiences, perceptions, and practices of the informants, significant barriers (figure 1) were found that disproportionately affect indigenous women. These barriers contribute to the widening gaps of health access inequality, which have been exacerbated by the pandemic. This study revealed that indigenous women face confusion about how to respond to Covid-19, and that their access to health services has decreased.

Discussion

This thematic analysis illustrates the experiences and perceptions of women, health providers and midwives

about breastfeeding and maternal care during the Covid-19 pandemic. During the first year of the pandemic, health providers and midwives reported not receiving education or information on breastfeeding and Covid-19. Although we do not know if breastfeeding practices deteriorated during the pandemic in these populations, the evidence shows that to improve breastfeeding rates after birth, education/promotion programs should be implemented.[26] The lack of advice and accurate information received by health providers and midwives, therefore, resulted in a lack of knowledge about breastfeeding and breastfeeding techniques during a Covid-19 infection in pregnant and postpartum women. In general, midwives and health providers reported that breastfeeding is the first 'vaccine' for the baby. Their accounts show, however, a lack of knowledge about EBF as they argue that "there are very poor families and they cannot buy formula, so they make use of the *atoles* and you can't tell them anything because it is an option to survive because it is cheaper" (midwife, 4). This quotation illustrates that they do not truly understand what EBF is, and do not trust in the exclusivity of breastmilk. It also illustrates that formula feeding or the inclusion of other foods and beverages is socially accepted during the EBF period as reported elsewhere.[19]

The lack of information, as well as the beliefs that women had about EBF ("I do not have enough milk", "the child is not satisfied, is hungry or cries"), are the same as before the pandemic,[27] and this has been documented in other contexts pre-pandemic.[28] Professional development updates, specifically for nurses and physicians, are an effective strategy for improving not only health providers´ knowledge about breastfeeding, but also breastfeeding rates.[29] This is crucial given the limited duration or absence of breastfeeding training in medical programs.

It has been documented that Covid-19 reduced women's attendance at medical consultations and reduced their social support during the lockdown. Hence, women without previous breastfeeding experience in the early postpartum period experienced a high burden of uncertainty and doubts.[30] In our study, the mothers reported feeling uncertainty and fear as a result of the pandemic curtailing support from their relatives, especially those that could translate the breastfeeding advice. Changes in maternal care have also been reported in other countries during the pandemic including a reduction in personal contacts for antenatal and postnatal care, no parental visitation to infants and women giving birth alone.[31]

The provision of information about breastfeeding during pregnancy and postpartum by community health workers through home visits has previously been shown to improve breastfeeding knowledge and practices among indigenous women in Mexico.[32] This did not happen, however, during the pandemic because according to the women interviewed, the relationship with health providers was limited, medical appointments were infrequent, and they had to attend clinics alone. This resulted in the indigenous monolingual women experiencing poor patient-provider communication, as the role of their companion is generally that of

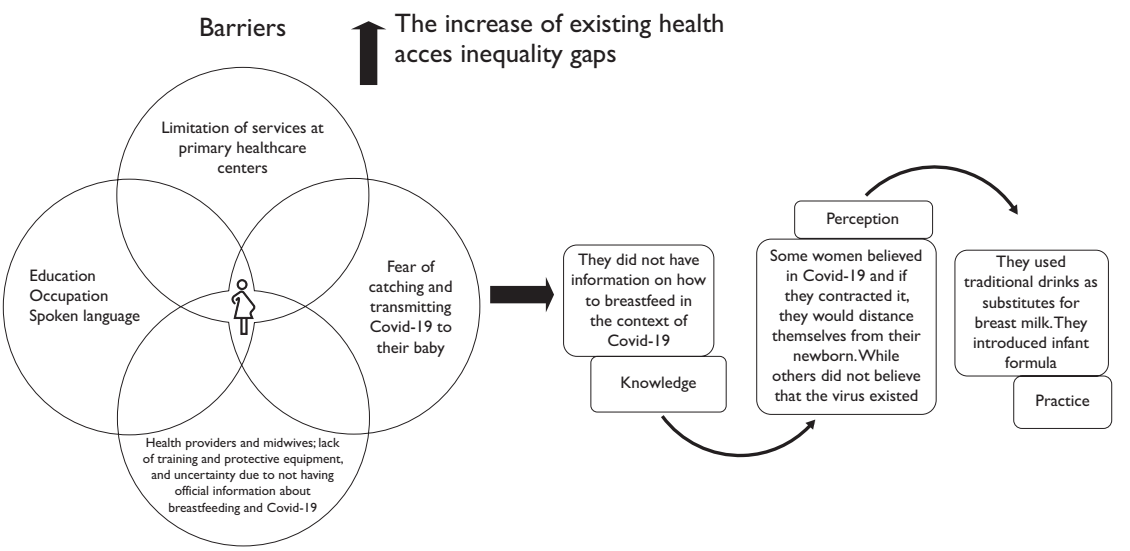

Figure 1. Barriers to breastfeeding advice during Covid-19 in medical unit. San Cristobal de Las Casas, Chiapas, Mexico, 2020-2021

a translator and an intermediary between the woman and the health providers.[33] The data illustrate that having to attend appointments alone with no one able to speak their indigenous language or translate during the pandemic led monolingual, and often illiterate, indigenous women to face additional burdens in their maternity care.

Midwives provided care closer to the woman in her own language and socio-emotional sphere. Since health units limited their care during the Covid-19 pandemic, it has been reported that in vulnerable areas midwives provided maternal health in pregnancy, childbirth, puerperium and newborn care.[34]

This article evidences the limitations in the knowledge and practices of breastfeeding among women, midwives and health providers, and the problems each face when they lack adequate education or information for supporting breastfeeding practices in the context of the Covid-19 pandemic. In addition, the study illustrates the barriers women experienced during childbearing because of the restrictions instigated by health providers during the pandemic to contain Covid-19 transmission in the population. The findings seek to provide evidence for strengthening the education of health providers and midwives to improve breastfeeding and EBF practices in Mexico.

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Authors' contributions:

Magdalena M. and Anabelle B. were responsible for the conception, development, and general planning of the research of this study, as well as the direct supervision of the research activities and construction of the manuscript. Ana L., Mishel U., Elaine H., and Pam S. contributed significant intellectual content to this draft. All authors designed the original article and are primarily responsible for the final content.

Declaration of conflict of interests. The authors declare that they have no conflict of interests.

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