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Determinants of Underutilization of Maternal Health Services in ANC Clinics in LMICs: A Narrative Review

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ABSTRACT

Background: Antenatal care (ANC) is critical for achieving Sustainable Development Goals (SDG) 3.1 and 3.2, aiming to reduce the global maternal mortality ratio to less than 70 per 100,000 live births by 2030, and to decrease neonatal and under-5 mortality rates. Despite its importance, approximately 830 women die daily from preventable pregnancy and childbirth causes, predominantly in low-resource settings.

Methods: The study conducted a comprehensive literature search from January 1, 2009, to December 30, 2020, focusing on delayed initiation of ANC in low- and middle-income countries (LMICs). The search used multiple databases and included observational research and Demographic and Health Survey (DHS) results, yielding 2034 findings. After applying exclusion criteria, 23 papers were selected for quality assessment and synthesis.

Results: Socioeconomic and regional disparities significantly affect ANC utilization. Studies from India, Uganda, Kenya, Myanmar, Zimbabwe, and Pakistan show varying levels of ANC service utilization. India and Myanmar reported high utilization in some areas, while regions like North India and Zimbabwe face challenges due to long distances to health facilities, lack of transportation, and inadequate health services. Factors such as education, transportation, income, and geographical location significantly impact ANC attendance. In Kenya and Somaliland, traditional birth attendants and low confidence in healthcare practitioners contribute to low ANC utilization rates. Pakistan shows moderate improvement in maternal health services utilization, yet significant challenges remain in ensuring comprehensive ANC coverage.

Conclusions: Barriers to ANC utilization in LMICs are multifaceted, including individual, community, and healthcare facility levels. Low education, cultural influences, lack of support, cost, distance, dissatisfaction with services, and inadequate staffing are major obstacles. Addressing these issues requires a holistic approach to improve accessibility, quality of care, and community awareness, ensuring that pregnant women receive the necessary healthcare services.

Keywords:

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Background

The importance of antenatal care as a component of women's health, particularly in achieving Sustainable Development Goals (SDG) 3.1 and 3.2, was emphasized. By 2030, the global maternal mortality ratio is aimed to be reduced to less than 70 per 100,000 live births, and preventable deaths of newborns and children under 5 years of age are aimed to be ended, with all countries targeting a reduction in neonatal mortality to at least 12 per 1,000 live births and under-5 mortalities to at least 25 per 1,000 live births (WHO 2020). Approximately 830 women die daily from preventable pregnancy and childbirth causes, predominantly in low-resource settings. (Galea, Merchant et al. 2020).

Antenatal treatment is also a crucial method for enhancing the safety of mother and child. Many researchers hypothesize as to why women are expected to avail of ANC. There are many reasons which include that antenatal care is a micronutrient supplementation source, that detects pregnancy-induced hypertension to stop preeclampsia and eclampsia treatment (Singh and Patra 2013). For multiple services and comprehensive treatment delivery, ANC is an important entry point to further maternity care. Pregnancy is often the first time an individual enters the health system (Kim, Choi et al. 2019). ANC services and visits target the promotion and maintenance of long-term health covering antenatal, intranatal, and postnatal phases. It often encompasses clinical records and support for pregnant mothers, relatives, and societies (Kawungezi, AkiiBua et al. 2015). ANC includes the ability to establish a contingency program for births and emergencies. It is recommended by the WHO (World Health Organization) that every pregnant woman should have a recorded plan to manage birth and any adverse events, such as pregnancy or birth-related complications or emergencies (Namatovu 2018). However, ANC facilities have not proved particularly effective in anticipating pregnancy problems. ANC makes people understand pregnancy and conception early signs (Narayana, Siddalingappa et al. 2016). Antenatal care significantly minimizes antepartum hemorrhage which was a main cause of maternal death (Kim, Choi et al. 2019). The concept of antenatal care empowers the midwives to play a central role in the better health of the pregnant woman and her fetus. Their work encompasses taking history and performing physical assessment; therefore it is pivotal for the midwives to conduct themselves in a professional manner. The midwives are expected to be optimistic towards mothers during antenatal care visits. Empathy along with substantial knowledge and acumen towards the pregnant females is of utmost significance so that they can provide immediate healthcare services needed by the mothers without wasting time. (Kanyangarara, Munos et al. 2017). Midwives are hence regarded as responsible healthcare personnel with good observational and communication skills to save lives, educate to spread awareness, and contribute to promoting the community's health standards (Abdillahi, Sahlén et al. 2018). Antenatal care services also cover the health of the neonates and children and focus on making their health status better by providing necessary facilities. It also targets dissemination of information into the community regarding timely and proper management of unforeseen events and emergency situations (Abdiwali, Abdisalam et al. 2019).

Methods

The principal author (GT) carried out the literature search. The search was limited to

publications published in English between January 1, 2009, and December 30, 2020. The year 2009 was chosen because WHO had launched the Focused ANC model by this time. To locate research in the databases, we used MeSH keywords, Emtree, and CINAHL titles, as well as key phrases. Major medical electronic databases, including PubMed, Medline (OVID interface),), and CINAHL (EBSCO host), were utilised to find relevant material for the review. To cover grey literature, we manually examined the Google search engine and Google Scholar; official WHO websites; online libraries of academic and government organizations; and references to electronically identifiable papers. The search strings or phrases were based on the following key words: delayed initiation, ANC, related factors, Ethiopia. The search phrases were utilized to get relevant material in a combined format tailored to the needs of the given database.

The inclusion criteria

- All observational research, as well as Demographic and Health Survey (DHS) results.
- Studies that looked at the prevalence and variables related with delayed ANC start among reproductive-aged women (15-49 years old).
- Studies that defined the primary outcome variable "delayed initiation of ANC" as entering care after at least 12 weeks of pregnancy, as well as those that defined delayed initiation of ANC as entering care after 16 weeks of gestation.
- Quantitative research studies.

The exclusion criteria

- Reviews, editorials, case series, and case reports on the delayed commencement of ANC.
- Studies that solely provided qualitative data on delayed ANC commencement.

The literature study yielded 2034 findings, with 876 duplicates deleted. Exclusion criteria included being inappropriate to the issue, published in high-income areas, or published before 1990. One hundred and fifteen articles were downloaded for full-text reading, and 23 were added by manually examining the reference lists of these publications.

Twenty-three papers were selected for quality assessment based on the review procedure (Figure 1). The latter determined that eight studies were of excellent quality, with 15 being of average quality. Two articles obtained a 'low' quality grade and were removed final synthesis comprised 7 qualitative investigations, 14 mixed-methods research articles, and a literature review.

Factor associated on under-utilization of ANC service for pregnant mother*:*

A study by Narayana, Siddalingappa et al. (2016) found that 186 mothers (93%) had received full ANC services in India cross-sectional study by Mumbare and Rege (2011) in the tribal area of Nashik District, Maharashtra, India revealed that 71.90% of women had received full antenatal services. Similarly, a study by Vasuki and Kalaiselvi (2018) in rural Mysore (India) reported a high utilization rate of full antenatal services, with 94.95% of women receiving comprehensive care during their pregnancy.

100% registration of pregnancy with 98.5% early registrations in the study area is consistent with study from rural community of Pondicherry (100% registration of

pregnancy in 2010) and rural north Karnataka (Metgud, Katti et al. (2009) revealed it to be 92.31%. But only 59.4% registrations in first trimester in Pondicherry and 30% in North Karnatnaka suggest improved awareness (84.5% maternal literacy), better sense of accessibility to healthcare facilities and utilization of services, in the study area. Nearly all, 90% women had more than three antenatal visits in the study area (Metgud, Katti et al. 2009, Vasuki and Kalaiselvi 2018).

A Comparative study done in Tamil Nadu revealed that 96.8% of the women made at least three antenatal visits in Tamil Nadu while Karnataka it was 80.5 (Rejoice and Ravishankar 2011). Scenario in North India is worrying as seen in rural areas of Aligarh where 72.1% of currently pregnant women and 59.7% of recently delivered women did not have any antenatal checkup (Ansari and Khan 2011). A study by Narayana et al. 2016 revealed that all women had received TT (Tetanus Toxoid) injection and maximum (95%) consumed (Iron and Folic Acid Supplementation) IFA (>100) tablets during pregnancy. Though other studies also reported high coverage of TT injection, IFA consumption was inadequate. A study conducted in Pondicherry revealed that 75.3% mother received more than100 IFA tablets whereas tribal Maharashtra represented that 86% mothers had received 100 IFA tablets during pregnancy (Mumbare and Rege 2011, Vasuki and Kalaiselvi 2018). One study on ANC checkups found that all women were weighed, blood pressure measured, blood sample taken, abdominal examination and ultrasound done (Narayana, Siddalingappa et al. 2016). While there was 37.5% women whose height measurement was not done. It showed that 74.5% had done more than two ultrasounds and 12.5% had done only once during pregnancy. A study conducted in Uttarakhand in 2011 by Chipmaker and Sahoo that found that the level of education of a mother had a positive effect on full ANC use. Women with a high level of education were five times more likely to seek prenatal care than those with no formal education.

Women in Class III and Class IV (middle and lower-middle socioeconomic levels) use antenatal care (ANC) services more frequently because they have more access to healthcare and are more aware of its value. These women can afford ANC treatments and frequently have employment that offer health coverage. This increased use of ANC promotes better pregnancies and deliveries, demonstrating improvement in healthcare access, but it also emphasises the need to assist lower-income women in receiving the same treatment. ANC utilization is significantly higher among women in Class III and Class IV. Contrasting observations were reported by many studies which revealed that pregnant females belonging to socioeconomic status (SES) class I and II as well as houses with richest wealth index had significantly higher rate of full ANC coverage (Narayana, Siddalingappa et al. 2016). Narayana, Siddalingappa et al. (2016) could be because of limited representation from upper SES. As upper SES mothers would have visited private clinics for immunization of their kids.

Milkowska-Shibata, Aye et al. (2020) conducted a study on the barriers and facilitators in the utilization of the maternal health services in the Myanmar which in Asia have maternal mortality ratio high. Data collected from 258 mothers that had under five children from survey of health occurred in Mandalay in between 2016 -2017. The findings revealed that late antenatal care utilization stood at 41.7%. There was a significant association observed between antenatal care attendance and factors such as education, transportation, income, and geographical location. Out of 258 one third women deliver child at home and out of one

third (18.5%) women deliver child without the help of attendant. Services utilization after postnatal was from 47.9 % to the 70.9 %.

In Zimbabwe there is high rate of maternal mortality in Southern Africa. The reason behind this is the home delivery practices and late use of the services care of antenatals. A study by Gore, Muza et al. (2014) in Zimbabwe district Chipinge south identifying the motivators and barriers in utilization of the ANC services. The approach of their study was qualitative in nature as information collected by in depth interviews and group discussion. Identified barriers encompassed long distances to health facilities, unwanted pregnancies, limited access to public transportation, insufficient knowledge, poverty, inadequate health facility services, and religious beliefs. Motivators include awareness of ANC importance and services at health facilities. These findings help in the implementation of policies to address these issues.

In Kenya, initiatives are underway to bolster the expertise of community health workers in health centers, empowering them to administer curative care and support during childbirth. The country's focus on ANC strives to reach every pregnant woman, providing comprehensive services including HIV management and prevention, syphilis screening, prevention of mother-to-child transmission (PMTCT), treatment and advocating for laboratory testing during the initial visit. In western Kenya, 80 percent of women opt to give birth outside health institutions, with 42 percent receiving assistance from traditional birth attendants (TBAs), 36 percent from laypersons, and 22 percent without any assistance. (Abdillahi, Sahlén et al. 2018). The research participants' ages varied from 25 to 34 years (60.4 percent). Most of the study participants, accounting for 204 (79%), were unemployed mothers. A significant portion of fathers, 135 (52.3%), worked in office or service-related occupations. Moreover, more than half of the participants, totaling 162 (62.8%), reported a family income ranging approximately from 100 to 499 (United States dollar) USD per month.

The Maternal and Child Health Centers in Hargeisa, Somaliland, provide a well-defined prenatal care services program (MCHs). However, prenatal care services are underutilized, with country data indicating that just 20% of pregnant women use them. The low rates are attributed to a lack of trust and confidence in healthcare practitioners specializing in MCH (Maternal and Child Health), alongside a preference for traditional birth attendant care provided at home (Abdillahi, Sahlén et al. 2018).

Negative attitudes about ANC, poverty, lack of understanding, family difficulties, and long wait periods at health care facilities for ANC, high costs of care, distant travel distances, previous unsatisfactory experiences, mothers' education levels, inadequate help from husbands and relatives, marriages that occur early, low socioeconomic level, a shortage of female physicians, compromised levels of healthcare services, as well as healthcare shortages at healthcare centers all contribute to the challenges associated with ANC utilization.. Roozbeh, Nahidi et al. (2016).

Abdiwali, Abdisalam et al. (2019) The study indicated that respondents often had late antenatal checkups, with a majority (70%) not planning where they would deliver, and 41% undergoing late antenatal checkups. In contrast, Abraham's study (2016) in Mekelle City, Northern Ethiopia, 4.7% did not plan their birth, while 67.3% of women who received health care services had late

antenatal check-ups. Furthermore, the survey found that around 24% of people who participated delivered their previous deliveries at their homes, and 13% cited financial limitations, 2.2% lack of transportation, and 2.9% absence of partner support as reasons. Affordability of prenatal care services is also a well-known aspect. This encompasses a woman's capability to cover expenses like consultation fees, medications, transportation, vaccinations, delivery, and cesarean sections. The term "acceptability of prenatal care services" denotes the satisfaction of women of reproductive age with the antenatal care services provided by MCH facilities (Fagbamigbe and Idemudia, 2015; Kanyangarara, Munos et al., 2017).As a result of the excellent quality treatment provided by private hospitals, public hospitals are sometimes faced with problems such as lack of current technology, unavailability of medications, and occasionally unqualified employees (He, Toloo et al. 2016).

Utility of ANC in Pakistan

Pakistan is a South Asian country, part of the previously recognized Indian subcontinent, which was called the subcontinent, situated as a smaller part of Asia's vast continent, Pakistan ranks as the seventh most populous nation worldwide, characterized by its rich ethnic and cultural diversity. The country has various geographical features, including high mountains, large fertile plains and deltas, deserts and plateaus. It has many different landscapes. It has historically been the home of one of the oldest urban civilizations in humanity. In today's culture and society, the lifestyle, health conditions, determinants, and health behavior of the people in this country mirror the enduring influence of ancient and subsequent cultures (Ahmad 2012).

Pakistan is a wide nation with five provinces "Sindh, Punjab, Baluchistan, Khyber Pakhtunkhwa and Gilgit-Baltistan [GB] also areas of federally administered" with a total population of 208 million (Sahito and Fatmi 2018). The most recent maternal mortality ratio (MMR) recorded was 276 per 100,000 live births, representing an improvement over neighboring regional countries, except Afghanistan. Nevertheless, the accessibility and utilization of maternal health services remain inadequate. Presently, figures indicate that 73% of women receive AN) even with just one maternity visit, 60% receive post-natal treatment (PNC), and 52% benefit from SBA (Sahito and Fatmi 2018). While significant, only 52 percent of pregnant mothers in the developed world provide ANC prescribed (i.e. four or more times during pregnancy with a qualified provider). Although regional surveys should provide details about what defines maternal health care, such knowledge was not included because of an insufficient study. Accordingly, in the 2012-13 PDHS "Pakistan Demographic and Health Survey", ANC was recommended for just 37% of married women of reproductive age (MWRA). (Tariq, Sajjad et al. 2018). Over 86% of women who had given birth five years before the study got antenatal care (ANC) from a trained provider, a significant 13-point rise from 2012-13. Just over half (51%) had attended at least four ANC visits. During ANC visits, roughly 89% of women had their blood pressure tested, while 7 in 10 women had their urine and blood samples taken. Counseling sessions through ANC covered various aspects: 52% received advice on starting nursing early, 54% were told about only breastfeeding, and 70% were advised to have a healthy diet. 69% of the most recent births received adequate protection against neonatal tetanus. Skilled birth attendants handled 69% of deliveries, with 66% occurring in health facilities. However, postnatal care check-ups within 2 days of

delivery were received by only 6 in 10 mothers and newborns. Nearly 7 in 10 women faced challenges in accessing healthcare, including concerns about going alone (58%), distance to health facilities (42%), financial constraints (30%), and obtaining permission for healthcare (21%).

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Country	Distance	Cost Impact	Cultural Implications	Education Level	Insufficient Knowledge and Lack of Awareness	Role of Family, In laws and Friends	Unsatisfactory Services provided at the Healthcare Centers	Inadequacy of Staff to handle complications	Limited Use of Technology	Parity of Women	Lack of power to make decisions	Transport	Occupational Status
Zimbabve	+	+	+	+	-	-	+	+	+	-	-	+	-
Uganda	-	-	+	-	-	+	+	+	+	-	-	-	-
Kenya													
Myanmar	+	+		+								+	
India	+	+	+	+	+			+				+	+
Pakistan	+	+	+	+	+	+	+	+	+	+	+	+	+

The table provides a detailed analysis of the multifaceted challenges influencing the utilization of antenatal care (ANC) services across Zimbabwe, Uganda, Kenya, Myanmar, India, and Pakistan. Each country exhibits a unique set of factors that shape how pregnant women access and utilize ANC services. In Zimbabwe, significant barriers include the long distances to healthcare facilities and financial constraints, which pose substantial challenges to accessing ANC. Cultural factors also play a pivotal role, influencing perceptions and practices related to maternal healthcare. Dissatisfaction with healthcare services and concerns about the adequacy of healthcare staff further complicate access to ANC. While transportation issues hinder mobility, factors such as parity of women and occupational status have varying impacts on ANC utilization.

Conversely, Uganda presents different dynamics where proximity to healthcare facilities and costs are less influential barriers compared to other countries. Here, strong cultural influences and social pressures from family, in-laws, and friends heavily impact ANC utilization decisions. Dissatisfaction with healthcare services and concerns about staffing adequacy pose considerable challenges, highlighting gaps in service delivery that affect maternal health outcomes. Education levels and awareness about ANC play moderate roles in influencing utilization patterns.

Although specific data for Kenya and

Myanmar were not detailed in the table, general observations suggest similar challenges related to cultural beliefs, healthcare service quality, and social pressures on ANC utilization. In India and Pakistan, distance to healthcare facilities, financial constraints, cultural beliefs, and social pressures significantly influence ANC attendance. Despite moderate levels of awareness, dissatisfaction with healthcare services and issues related to staffing remain major barriers.

The table underlines the complexity of ANC utilization across these diverse settings, illustrating the need for context-specific strategies to improve maternal healthcare outcomes. Enhancing accessibility by reducing transportation barriers, improving awareness about ANC benefits, ensuring healthcare facilities meet quality standards, and culturally adapting ANC services are essential steps toward addressing these challenges. By addressing these factors comprehensively, countries can work towards ensuring that all pregnant women have equitable access to high-quality ANC services, thereby improving maternal and child health outcomes on a global scale.

Discussion

The systematic review on factors impacting antenatal care (ANC) utilization in fragile and conflict-affected situations identified key barriers such as distance to healthcare facilities, transportation challenges, and poor quality of ANC services (Basha 2019). Despite the high number of studies reviewed, women in these regions are not meeting the recommended ANC visits, with socioeconomic status and education playing significant roles. Conflict was identified as a direct barrier in only a few studies (Ngowi, Mkuwa et al. 2023). These findings emphasize the need for tailored interventions to improve access to essential maternal health services in these challenging environments, guiding policymakers and healthcare providers in addressing specific barriers to ANC utilization (Simkhada, Teijlingen et al. 2008).

Delicate and conflict-affected regions create a complex situation for pregnant women seeking essential antenatal care (Arsenault, Jordan et al. 2018). Security concerns, damaged infrastructure, and healthcare worker shortages significantly limit access to these vital services (Jiwani, Amouzou-Aguirre et al. 2020). Poverty, exacerbated by conflict, along with cultural norms, can further hinder women's ability to prioritize and afford prenatal care. Even awareness can be a challenge, as access to accurate information about the benefits of antenatal care may be limited (Arsenault, Jordan et al. 2018).

The review proposes a multi-pronged approach to address these issues. Investing in rebuilding healthcare facilities and training more midwives are crucial steps to increase the availability of quality care (de Jongh, Gurol–Urganci et al. 2016). Community engagement plays a vital role in educating women about the importance of prenatal care, challenging cultural barriers, and empowering them to seek the services they need (Sharma, O'Connor et al. 2018). Addressing financial burdens through subsidies and integrating prenatal care with other health programs like nutrition can improve overall health outcomes for mothers and children in these challenging environments (Ngowi, Mkuwa et al. 2023). It highlights the necessity of shifting focus from mere service coverage to effective coverage and equity in health care delivery, consistent with the Sustainable Development Goals. The findings advocate for systematic improvements in healthcare quality, enhanced measurement strategies, and comprehensive policy reforms to ensure that all women, irrespective of socioeconomic status, receive high-quality antenatal care.(de Jongh, Gurol–Urganci et al. 2016)

By implementing these recommendations,

stakeholders and policymakers can create a more supportive environment for pregnant women in conflict zones.(Sharma, O'Connor et al. 2018) This will ultimately improve access to essential antenatal care, promoting better health for mothers and babies (Ngowi, Mkuwa et al. 2023). A key finding is that a woman's personal plans impact delays in accessing care (Amo-Adjei, Aduo-Adjei et al. 2018). Knowledge of danger signs, economic status, transportation issues, facility staffing and equipment, and management problems significantly influence timely and appropriate childbirth care. It highlights the need for a holistic and individualized approach to overcoming barriers to intrapartum care, emphasizing women's empowerment and involvement in healthcare decisions (Amo-Adjei, Aduo-Adjei et al. 2018). One study found significant disparities in antenatal care services, with nearly 27% of critical services not provided and no country offering all eight recommended services (Sk, Paswan et al. 2019). Socioeconomic status, particularly wealth and education levels, played a significant role in the quality of care received, though this disparity decreased in adjusted models. Geographic disparities were also observed, with women in East Asia/Pacific and Latin America receiving more services than those in Europe/Central Asia, the Middle East, and South Asia (Amo-Adjei, Aduo-Adjei et al. 2018). The study follows Donabedian's quality of care framework, focusing on the technical and functional aspects of care during antenatal visits. Addressing these socioeconomic and regional disparities is essential for improving maternal and child health outcomes in low- and middle-income countries (Basha 2019).

Strengths

Comprehensive Review: The systematic review conducted a thorough search across multiple databases, screening a large number of studies to provide a comprehensive analysis of factors impacting ANC utilization in fragile and conflict-affected situations. This extensive search strategy enhances the review's credibility and ensures a broad coverage of relevant literature, contributing to a robust analysis of the topic.

Clear Methodology: The review followed a structured approach, including a detailed protocol, adherence to the PRISMA checklist, and a narrative synthesis method, enhancing the rigor and transparency of the study. By clearly outlining the methodology employed, the review promotes reproducibility and allows readers to assess the validity of the findings, strengthening the overall quality of the research.

Relevance: By focusing on a critical issue affecting vulnerable populations in conflict-affected regions, the review addresses an important gap in the literature and provides valuable insights for policymakers and healthcare providers. The relevance of the study to real-world challenges faced by women in fragile settings underscores its significance in informing interventions and policies to improve maternal health outcomes.

Weaknesses

Heterogeneity of Studies: The review noted the heterogeneity of included studies in terms of design and methodology, which limited the ability to conduct a meta-analysis. This variability across studies may introduce inconsistencies in the data synthesis process and impact the generalizability of the findings. Addressing this heterogeneity through subgroup analyses or sensitivity assessments could strengthen the review's conclusions.

Limited Focus on Conflict Impact: While the review highlighted the impact of conflict on ANC utilization, it identified conflict as a direct barrier in only a small number of studies. Further exploration of the direct and indirect effects of conflict on healthcare access could provide a more nuanced understanding of the challenges faced by women in these settings. Enhancing the focus on conflict-related barriers may offer deeper insights into the complexities of accessing maternal health services in conflict-affected areas.

Potential Bias: As with any systematic review, there is a risk of publication bias, where studies with significant findings are more likely to be published. Ensuring a comprehensive search strategy and transparent reporting can help mitigate this bias. Additionally, addressing potential biases through sensitivity analyses or the inclusion of grey literature sources could enhance the review's robustness and minimize the impact of publication bias on the conclusions drawn.

Conclusion

Women and their ability and willingness to participate in maternity services are critical to an easily accessible and acceptable maternity care profession. In many LMICs, mothers know little about the joy of childbirth services. Previous research has found that high wait times for prenatal treatment deter pregnant women from seeking antenatal care at health institutions. This might be one of the causes of inadequate utilization of prenatal medical facilities, alongside other options. Accessibility to MCH services is associated with higher rates of prenatal care use. Pregnant women prefer MCHs with medications, equipment, and ambulances because they get all services they need and may be transported if necessary. MCHs with highly skilled staff and a positive attitude are likely to see many pregnant ladies. Pregnant women don't enjoy waiting for lengthy periods to be seen, therefore MCHs that provide quick treatment are likely to attract pregnant women.

In conclusion, challenges impeding the utilization of ANC services in LMICs are divided into three main domains, for instance at the individual, community, and health facility levels as described in the figure below. Low education, parity of women, occupation/work responsibility, affordability, and lack of power to make decisions are the barriers that a woman encounters at a specific level. Cultural effects in the community, insufficient knowledge and awareness as well as no support from family and friends play an important role in deciding to access healthcare facilities

Cost implications, distance, dissatisfaction with services, inadequate staffing to address complications, limited technological access, and transportation challenges are among factors influencing ANC service use at the healthcare facility level.

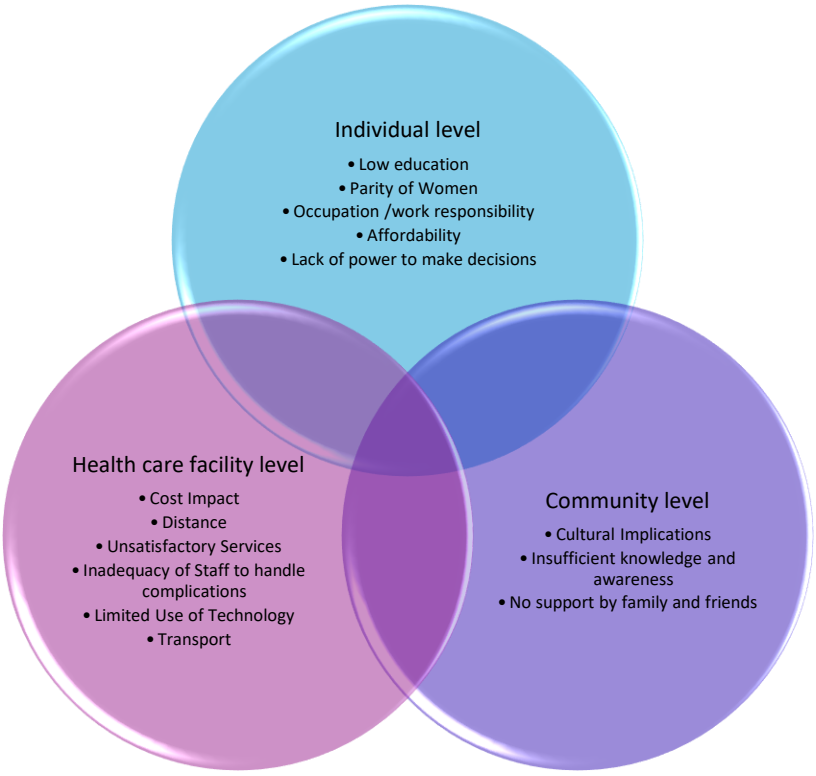

Figure 1 Analysis of barrier into individual, community and health care facility level

Recommendations

A variety of community based funds can be established for transportation and other costs to cover for the emergency cases and other healthcare services that are required by the women and her family while they are at the BHU or RHC. This would encourage community participation to access and utilize the facility.

Society and Region - members of the community should help the women and their families; help in identifying high-risk cases; members should volunteer to help the health care providers, help in transportation and in emergency obstetric conditions.

This analysis recommends developing more focus interventions at health system levels such as the availability of transport and ambulance to reduce distance, transport, and economic barriers. Staff pieces of training and quality of service delivery need planning and execution.

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