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# Perceived barriers to utilization of antenatal care services in northern Uganda: a qualitative study

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## Abstract

**Objective:** Antenatal care (ANC) utilization remains a challenge in efforts to reduce maternal mortality and improve maternal health in Uganda. This study aimed to identify perceived barriers to utilization of ANC services in a rural post-conflict area in northern Uganda.

**Methods:** A qualitative study using in-depth interviews and focus group discussions of seventeen participants (pregnant women, health workers and a traditional birth attendant). The study was informed through a phenomenological approach to capture perceived barriers to utilization of ANC. The study was carried out in post-conflict Awach sub-county, Gulu District, northern Uganda. Data was analyzed using inductive conventional content analysis.

**Results:** The main perceived barriers to ANC utilization were identified as: poor quality of care including poor attitude of health workers; socio-cultural practices not being successfully aligned to ANC; and lack of support from the husband including difficulties in encouraging him to attend ANC. Additionally, institutional structures and procedures at the health centers in terms of compulsory HIV testing and material requirements and transportation were perceived to prevent some pregnant women from attending ANC.

**Conclusions:** Identifying local barriers to ANC utilization are important and should be considered when planning ANC programs. We propose that future efforts should focus on how to ensure a good patient-provider relationship and perceived quality of care, and further how to improve inter-spousal communication and sensitization of husbands for increased involvement in ANC. We recommend more research on how socio-cultural context can meaningfully be aligned to ANC to improve maternal health and reduce maternal mortality.

**Keywords:** Maternal health, antenatal care, Uganda, post-conflict, qualitative

## **Highlights**

- A complex and interrelated set of barriers affects utilization of ANC services in northern Uganda
- Poor quality of care at health centers, including poor attitude of health workers, was perceived as a critical barrier to ANC utilization
- Socio-cultural practices were perceived as not being successfully aligned to current ANC practices
- Lack of support from husband was perceived to negatively affect utilization of ANC

## **Introduction**

The burden of maternal mortality continues to be a great public health concern and is part of the Sustainable Development Goals framework [1]. Despite global efforts to improve maternal health outcomes, reducing maternal mortality rates (MMR) remain a key challenge in many developing countries [2], including Uganda. The MMR in Uganda remains high at 336 deaths per 100,000 [3,4]. As a model to improve maternal health and prevent maternal mortality, the World Health Organization recommends that pregnant women in developing countries attend at least four ANC visits in each pregnancy [5]. ANC programs are developed to ensure the use of skilled attendants at birth and to promote healthy behaviors during pregnancy, such as appropriate nutrition and recognizing complications [6]. This is achieved by providing a platform for important health care functions including health education, screening, diagnosis and disease prevention [5]. Evidence suggests that ANC not only saves lives but is critical in improving health status, quality of care and health service utilization [5]. The government of Uganda encourages the use of ANC during pregnancies [4]. However, according to the most recent data from 2016, the proportion of pregnant women in Uganda who received the recommended number of ANC visits was only 60% [3]. Inadequate use of ANC services may pose a significant health risk for both mothers and their children [5,7].

In northern Uganda, the MMR is estimated to be higher than the national average [8]. Northern Uganda is a post-conflict area, which is recovering from 20 years (1986-2006) of civil war between Lord's Resistance Army and the government of Uganda [9,10]. The conflict resulted in disruption of health services, damage to the infrastructure and massive population displacement with nearly 90% of the population living in camps as internally displaced persons. After the conflict ended, resettlement resulted in movement out of camps to rural areas with poor services [11], posing challenges to access and quality of ANC services [8-10].

Previous studies exploring barriers to uptake of ANC and maternal health services have indicated that a complex and interrelated set of barriers affects the utilization of ANC. In Uganda, studies have found that perceived quality of care [12,13], long distances [6,10,12], lack of male partner support [12,14,15], lack of financial

resources [6,10,12,16], routine HIV testing [15,17] and cultural barriers [12,14,18] were inhibiting factors to ANC attendance and number of ANC visits. Despite existing literature into factors influencing ANC utilization, there is a need for a deeper and more context-specific understanding of pregnant women's uptake of ANC. This will support development of contextualized and appropriate interventions for improved maternal health in specific settings. Therefore, this study aimed to identify perceived barriers to utilization of ANC services in a rural post-conflict area in northern Uganda.

## **Methods**

### **Study design**

The study applied a qualitative study design to identify perceived barriers to utilization of ANC services in northern Uganda. A phenomenological approach was used to develop the qualitative frame. Phenomenology is a research method that is used to describe how human beings experience a certain phenomenon [19,20]. The phenomenological approach was therefore chosen to explore understandings and perceptions of ANC utilization through the lived experiences of the selected participants (pregnant women, health workers and a TBA). The study design provides a depth of insight and explanations of the phenomenon in order to answer the overall research question: What are the main perceived barriers to utilization of ANC services in rural post-conflict northern Uganda?

### **Study setting**

The study was carried out in Awach sub-county, Gulu District, northern Uganda, under the Gulu Health and Demographic Surveillance System (HDSS). The Gulu HDSS was established in 2010 by Gulu University to provide a framework for continuous registration and monitoring of vital demographic indicators in the post-conflict recovery process. Awach sub-county has a population of about 17,000 people, of which approximately 50% are below 15 years of age, and covers 250 km<sup>2</sup> divided into four administrative parishes. Each parish has a health center; Awach Health Centre IV, Gwengdiya Health Centre II, Paibona HC II and Pukony Health Centre II. All health centers provide ANC for pregnant women.

In 2015, about 2,000 women in Awach sub-county were in the reproductive age (15-49 years). Gulu HDSS registered pregnant women who attended ANC through a questionnaire-based interview and assessment of anthropometric measurements. Follow-up was conducted at the women's home, at the time they were giving birth. During follow-up, the child's birth weight was measured and a questionnaire-based interview was carried out. During this quantitative data collection from May 1<sup>st</sup> 2015 to April 30<sup>th</sup> 2016, a total of 421 pregnancies were reported. Among the registered women with a live birth, 60% attended ANC four times during their pregnancy. Additionally, 11% of these women were below 18 years of age and 16% were 35 years of age or older; 55% had not completed primary school (P7); 7% were HIV positive; and 27% reported malaria symptoms during the pregnancy (data from Gulu HDSS, not published). Quantitative information on pregnant women who did not attend ANC during pregnancy was not available from the Gulu HDSS.

During the qualitative data collection, Awach sub-county was part of an intervention group in a scale-up project to reduce maternal and newborn deaths [21]. The study by Sensalire et al. took place from February 2015 to December 2016 and was in the initial phase of implementation when data was collected for this study. In 2016 at the end of the scale-up project, Sensalire et al. estimated the MMR to be slightly below the national average, in contrast to previous estimates [21].

### **Study population**

The study was based on interviews with seventeen participants: ten pregnant women who attended ANC during their pregnancy (ANC users), three pregnant women who did not attend ANC during their pregnancy (ANC non-users), three health workers, and one traditional birth attendant (TBA). The participants were selected through purposive sampling in which participants were selected based on their experience and knowledge of ANC utilization in the study setting [22]. This sampling technique was used to ensure a diverse study population that was information-rich and had in-depth experience to identify descriptive perceptions and perspectives of barriers to ANC utilization. The selection was based on the following criteria: pregnant women (currently using/not using ANC services), health workers (nurses/midwives) and traditional birth attendants. Participants were either recruited through the network of local field assistants working with Gulu HDSS or at the health centers. Identified

participants were invited to participate mainly through face-to-face or phone calls by field assistants employed by Gulu HDSS. All participants who were contacted agreed to participate and only one health worker was ultimately unable to participate due to a busy working schedule.

The health workers interviewed were between 29 to 35 years of age and had between 5 to 15 years of professional experience. In comparison, the interviewed TBA was 54 years old and had 27 years of experience (data not illustrated). The pregnant women interviewed were between 16 to 38 years of age. Characteristics of pregnant women by ANC-users and ANC non-users are summarized in table 1.

**Table 1: Characteristics of pregnant women by ANC users and ANC non-users**

|                             | <b>ANC users (n=10)</b> | <b>ANC non-users (n=3)</b> |
|-----------------------------|-------------------------|----------------------------|
| <b>Age</b>                  |                         |                            |
| <19                         | 1                       | -                          |
| 19-24                       | 7                       | -                          |
| >24                         | 2                       | 3                          |
| <b>Level of education</b>   |                         |                            |
| P1-P4                       | 2                       | 3                          |
| >P4                         | 8                       | -                          |
| <b>Previous pregnancies</b> |                         |                            |
| 0                           | 1                       | -                          |
| 1-2                         | 4                       | -                          |
| >2                          | 5                       | 3                          |
| <b>Distance to ANC</b>      |                         |                            |
| <2 km                       | 5                       | 2                          |
| 2-4 km                      | 3                       | 1                          |
| >4 km                       | 2                       | -                          |

### **Data collection**

The study used both in-depth interviews and focus group discussions to capture the participants' different experiences and perceptions. In-depth interviews were used with health workers, ANC non-users and the TBA, whereas focus group discussions were used with ANC users. The different methods of interviewing reflected different sensitivity levels of the topic among the participants. In-depth interviews were chosen for ANC non-users to ensure truthful answers as the topic might be considered sensitive. Focus group discussions were chosen for ANC users to stimulate fruitful discussions as the topic was not considered sensitive for this particular group.

Semi-structured interview guides were created in English to facilitate the interviews. The interview guides were developed with broad open-ended questions to encourage detailed and descriptive perceptions of the research topic. Examples included, “Why do you think some women do not attend ANC in your community?” and “Can you tell me about some of the barriers pregnant women experience in using ANC services at the health facilities?”. Prior to data collection, the interview guides were discussed and pre-tested with a small group from the study population in close cooperation with local field assistants to match the specific context. The local field assistants were employed by Gulu University and had at least one year of experience working with maternal health, including extensive training in interview techniques and data collection methods. Final interview guides were reviewed and approved by senior researchers of the study.

Interviews with health workers were carried out in English, and interviews with pregnant women and the TBA were carried out in the local language, Acholi Luo. Two local field assistants assisted the data collection and acted as interpreters for interviews with pregnant women and the TBA. All interviews were facilitated by the first author and one local field assistant.

Data was collected in the period between August to October 2015. Each interview lasted from one to two hours. Interviews were conducted at private settings outside the health centers or outside participants’ homes. Data collection was continued until the main researcher and the field assistants sensed to have reached data saturation and quality in data. This was indicated by a full understanding of the participants’ perspective, when the same themes were recurring and no new insights were given by additional sources of data.

### **Data management and analysis**

All interviews were audio-recorded, transcribed and then imported into NVivo for further analysis. Data was analyzed using inductive conventional content analysis, as described by Hsieh and Shannon [23]. This strategy was used to interpret meaning from the content of text data through a systematic classification process of coding and identifying themes. In the inductive approach, the coding categories were derived



directly from the text data. The first step included reading the transcripts several times in order to obtain an overall understanding of the data and the perceived barriers to utilization of ANC services in the study area. The next step in the analytical process included organizing the raw data through an initial open coding to extract all emerging codes corresponding to the research question. This helped to direct the further analysis. In the following step, identified codes were further grouped and reduced to a number of categories by combining similar headings into broader categories [23]. For instance “lack of resources at health centers” and “poor attitude of health workers” were combined into the overall category “poor quality of care”. In the final step, the identified categories were used to compose possible answers to how the participants perceived barriers to utilization of ANC services.

First and second author critically reviewed and compared the identified categories and all researcher quality assured the findings to ensure reliability. The researchers were both familiar with the local context and hold degrees in either medicine or public health.

**Ethical considerations**

The Research and Ethics Committees of Gulu University and The Uganda National Council for Science and Technology (UNCST) (study ref: SS 3407) approved routine procedures by Gulu HDSS, including pregnancy registration and monitoring. Verbal consent was obtained from all participants prior to the start of each interview.

Participants were allowed to withdraw from the study at any time.

**Results**

Three overall categories of perceived barriers to utilization of ANC services were identified; 1) poor quality of care, 2) misalignment between ANC and socio-cultural practices and 3) restricting structures and procedures at health centers (table 2). Each category including the respective subcategories will be further described and illustrated by quotations.

**Table 2: Identified categories and subcategories of perceived barriers to utilization of ANC services**

| Categories | Subcategories |
|------------|---------------|
|------------|---------------|

|                                                         |                                                                                                                                                       |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Poor quality of care                                    | Lack of resources at health centers<br>Poor attitude of health workers                                                                                |
| Misalignment between ANC and socio-cultural practices   | Poor acceptance of cultural practices and beliefs at health centers<br>Lack of support from the husband during pregnancy<br>Young or old maternal age |
| Restricting structures and procedures at health centers | Compulsory HIV testing<br>Material requirements and transportation                                                                                    |

### **Poor quality of care**

#### ***Lack of resources at health centers***

Lack of resources at the health centers was perceived as a crucial barrier to pregnant women’s ANC utilization. Six of the ten ANC users interviewed had experienced long waiting time at the health centers, mainly due to a shortage of health workers. Two of these stressed that pregnant women often have to leave the health center without receiving any service:

*It is happening to almost every woman that they will come and sometimes not get the midwife – and you will go back home. They will tell you to come another day. (ANC user, 23 years)*

*Sometimes they will not get a health worker at the health center. Because here, there have few health workers, so sometimes there are no one at the antenatal unit (...) Then they just go home. (ANC user, 24 years)*

In addition, two participants spoke about episodes in which women had to give birth outside the health center because they could not find a present or available health worker.

*There was one day, when a woman came and did not find any health worker. So she delivered from outside. (ANC user, 23 years)*

Similarly, two of the health workers expressed a need for more support at the health centers in order to ensure good quality of care to the pregnant women.

The lack of resources was also expressed in terms of shortage in vaccines, commodities, and other supplements for pregnant women. Participants complained that they sometimes could not receive the needed medicine or services due to stock-outs.

### ***Poor attitude of health workers***

All participants in the study mentioned the attitude of the health workers as an important factor in receiving good quality of care and in deciding whether to attend ANC. About half of the pregnant women, both ANC users and ANC non-users, argued that the attitude of many health workers was poor and that some health workers were profoundly disrespectful and abusive. The fear of being neglected, humiliated or verbally abused was a continuing perceived matter among the pregnant women. They either described their own past experiences with experiencing disrespectful behavior from health workers, or they knew of women with bad experiences.

*Some of the nurses, they will just abuse you because the way you are dressed. Maybe they will tell you that you are not smart, and they only want those who are smart. (ANC-user, 24 years)*

*It depends on the nurses, but there was one time, when the nurse started abusing her, and saying 'you are not clean and whatever'. (ANC-user, 16 years)*

Similarly, the TBA stated that many pregnant women come to her because of mistreatment at the health centers:

*The reason why most women come here is because many nurses just abuse those mothers – like, 'I am not the one who put that pregnancy on you. You just go away'. (TBA)*

However, the perceived quality of care by health workers was also explained to be depending on the specific health center and the individual health worker:

*People like coming for ANC here [one of the health centers in the study area], but nurses at another health center [in the study area] like abusing people.  
(ANC user, 23 years)*

The health workers did not indicate any problems with the patient-provider relationship in terms of attitudes and quality of care. One midwife said she made great efforts in welcoming the pregnant women in a good way so they would come back.

### **Misalignment between ANC and socio-cultural practices**

#### ***Poor acceptance of cultural practices and beliefs at health centers***

The participants reported that many cultural rituals as part of the pregnancy and birth experience are mainly performed after giving birth. However, some cultural behaviors and practices were still perceived to influence ANC utilization. Two of the three ANC non-users explained how they did not believe it was necessary to attend ANC unless you experienced complications. This reflected some women's view that a pregnancy is a healthy state in which there was little reason to go to ANC when the perceived health risk was low. If a pregnant woman experienced complications, she would consult a TBA. In general, the pregnant women, both ANC users and ANC non-users, expressed a positive attitude towards seeking advice and guidance from local TBAs, especially when only experiencing mild complications.

*She [participant] went to the TBA, because she was feeling pain all around the waist. So she was given local herbs that helped to stop those pains. (ANC user, 24 years)*

*She [participant] fears to go to the health center though she is having some problems. Nowadays, she uses traditional herbs from the TBA. (ANC non-user, 36 years)*

Another perceived cultural barrier was expressed in the position for giving birth at the health centers. Some pregnant women in the study area feared going to the health centers because they would encourage you to give birth while lying down. Instead, the cultural practice is to give birth in a squad position.

*Some people fear to deliver from the health center, because the nurse will force you to lay down with one leg on one side and your other leg on the other side. (ANC user, 23 years)*

*She [participant] fears going for delivery at health centers because of the way they make you deliver. That's why she goes for the TBA. (ANC non-user, 38 years)*

Timing of first ANC was perceived as a barrier for not completing all four recommended ANC visits. This was explained by the cultural perception that the pregnancy is not officially acknowledged until the stomach is visible. In this regard, the health workers highlighted that many pregnant women do not attend ANC until relatively late in the pregnancy.

*They think that, when the stomach is big, then is when you should come. (Midwife, 35 years)*

### ***Lack of support from the husband during pregnancy***

In Uganda, it is required that the husband accompanies the first ANC visit. To meet this requirement, the husband has to be willing and able to attend. The participants indicated several challenges in encouraging the husbands to attend ANC. Both the health workers and the pregnant women mentioned that it was problematic if the husband was out of town or unavailable. They explained that in Acholi culture, it is common for men to have more than one wife; so the husband might stay with another wife in a different location or he might not feel committed to the pregnancy.

*Their husbands postpone coming to the health center, maybe because they are having another appointment with another wife. They will tell you that let us go tomorrow. (ANC user, 23 years)*

Additionally, several participants including all ANC non-users argued that many husbands did not understand why it was important for them to attend ANC. The husbands believed that the pregnancy was the wives' responsibility; therefore, they should not participate or engage in pregnancy-related matters. Four pregnant women explained how their husband would either refuse to go or continue to postpone.

*When she [participant] wants to go for ANC at the health center, she will first ask the husband. Then the husband will say that "I'm not the one who is pregnant, so you have to go alone". (ANC non-user, 26 years)*

### ***Young or old maternal age***

In Uganda, the fertility rate is high; women on average give birth to 5.4 children [3]. Women get pregnant at all ages, both at very young and very old ages. Nevertheless, 'unusual' maternal age was generally perceived as a barrier to ANC utilization among the participants. Pregnant women showed great fear in going to ANC because they believed that they did not reflect the expected age group to be pregnant. One ANC non-user explained that the health workers often were young, and she perceived to have more experience than them. In addition, another ANC non-user explained how she refused to attend ANC because she could meet her own daughters there:

*She [participant] is having like 5 grandsons and 4 granddaughters. So she fears to go. Even her daughters are going to the health center for the antenatal. (ANC non-user, 38 years)*

In addition, the participants stressed that many pregnant women in the study area are teenagers when they get pregnant and the majority of these young girls would fear going to the health centers because of shame and stigmatization.

*Some girls fear because of their age. Some are too young to be pregnant and they fear what other people think. (ANC user, 16 years)*

## **Restricting structures and procedures at health centers**

### ***Compulsory HIV testing***

In Uganda, there has been a strong focus on reducing the prevalence of HIV including introducing routine HIV testing as part of the ANC services [24]. The health workers reported that this has led to more HIV testing at the health centers and several positive effects such as increased knowledge and awareness about HIV in the communities. Despite a suggested positive impact of the compulsory HIV testing, the participants still perceived the HIV testing as a critical barrier to ANC utilization. They indicated that some pregnant women would fear being diagnosed with HIV and therefore avoid attending ANC:

*Some people are living positively (HIV), and they may know before they go to the health center. They fear to come because you are going to get tested and diagnosed. (ANC user, 24 years)*

*People fear coming to the health center, because they live positively (HIV). They will stay at home during the pregnancy and deliver at home, because they know if you reach the health center, the health worker will know you are HIV positive. (ANC user, 23 years)*

This fear of getting diagnosed with HIV during ANC appeared stronger when women had co-wives. Three of the thirteen pregnant women in the study were in polygamous marriages and they anticipated to be HIV positive and therefore feared to get tested.

*Her [participant] husband has four other women. So she fears to test for HIV. She fears the result. (ANC non-user, 38 years)*

In addition, participants explained that some husbands would similarly hesitate to attend ANC because of the HIV testing.

### ***Material requirements and transportation***

In Uganda, health care is free for all pregnant women. However, participants still perceived ANC to be associated with some required payments. The participants

stressed that pregnant women routinely are expected to provide certain materials such as a basin, soap, blankets, and clothing. These materials are required for giving birth at the health centers as part of the ANC program, though not provided for the pregnant women. The participants emphasized this requirement as a crucial barrier for attending ANC, especially for those with lack of financial resources.

*In most health centers, health workers will just demand for a lot of things. You have to come with a basin and other things. (ANC non-user, 26 years)*

In addition, almost all participants mentioned that pregnant women would feel ashamed if they could not provide the required materials. They would not go to ANC because of fear of humiliation. One participant explained how some pregnant women would rather stay at home and avoid the embarrassment:

*Sometimes women don't have money to buy baby things. So they think instead of coming here being ashamed, it is better that they deliver at home. Because from home, nobody will know [that you cannot provide the required materials]. (ANC user, 30 years)*

Attending ANC was for also perceived to be associated with payments to transportation, as not all pregnant women lived in walking distance to the health centers. Due to lack of financial resources among some pregnant women, this was too perceived as a crucial barrier to ANC.

*Some women, they don't want to attend ANC because lack some money to transport. (ANC user, 23 years)*

## **Discussion**

In this study, we identified the main perceived barriers to ANC utilization as: poor quality of care including poor attitude of the health workers; misalignment between ANC and socio-cultural practices; and lack of support from the husband including difficulties in encouraging him to attend ANC. Furthermore, institutional structures



and procedures, such as compulsory HIV testing and required materials, were perceived to prevent some pregnant women in the study area from attending ANC.

Our findings are similar to what has been reported in existing literature about barriers to ANC utilization in Uganda [10,12–14,25–28]. Access to high-quality maternal health care has already proven critical in improving maternal health [13,29]. In this study, the poor perceived quality of care was mostly discussed around a poor attitude of the health workers. We found that some pregnant women in the study area were reluctant to go to ANC if they perceived the health worker's attitude as negative and unwelcoming. Other studies from Uganda have likewise identified the patient-provider relationship to have a large impact on ANC utilization [12,25,26,29]. These studies indicate that a negative reputation and perception of health workers and previous mistreatment at the health centers can result in fear among pregnant women, which negatively affects their health-seeking behavior and utilization of ANC services. A study from northern Uganda emphasized that the conflict has resulted in multiple challenges for health workers including increased workload, longer working days, lack of payment and more complex cases than qualified to care for [11]. Staff motivation and supervision may therefore be important focus points to improve quality of care in ANC in post-conflict settings, where health system governance and management is often poor [30]. Further, there is growing consensus that midwifery care contributes to high-quality maternal services and reduction in maternal deaths. As such, future planning of ANC may benefit from resource allocation to scale up midwifery practices including ANC [31]. This resource allocation may further support the use of midwife-led continuity of care (MLCC), in which pregnant women receive support by a known and trusted midwife throughout the antenatal period. Evidence on the effect of MLCC report higher level of satisfaction among women and benefits for both mother and babies by experiencing better pregnancy outcomes [32]. However, MLCC are complex interventions and require that well-trained midwives are available in sufficient numbers [5,33]. Due to significant staffing issues in the study area and similar settings, concerns have evolved around the feasibility of the model in low-resource settings [5]. Despite potential challenges in implementation, structuring ANC to incorporate some of the active ingredients of MLCC may be worth considering [5]. Sensalire et al. implemented a scale-up project with quality improvement strategies in districts of northern Uganda including Awach sub-county

[21]. They reported overall positive trends towards increased ANC utilization and decreased maternal and perinatal deaths during the intervention period. A system-strengthening approach focusing on quality improvement was suggested to address barriers of poor quality of care and strengthen health systems to reduce preventable maternal and perinatal deaths [21]. This could be done through training of health workers, community outreach activities and community mobilization messages.

The role of socio-cultural beliefs and practices in relation to pregnancy was recognized as important in achieving effective ANC utilization. In our study, cultural beliefs and practices were identified as consulting TBAs, getting pregnant at a very young/old age, late acknowledgement of pregnancy, and giving birth in a squad position. These key practices in Acholi culture were perceived as not successfully aligned to ANC services and negatively impacting ANC utilization in the study area. Literature from similar low-income developing countries have likewise indicated a misalignment between ANC services and cultural practices [34]. Studies specifically from Uganda have recognized a preference of TBAs in some rural areas and suggested that TBAs sometimes have a more appreciated and accepted role in local communities [10,14,28,35]. Some women consider TBAs to have more experience, be more knowledgeable and be more aware about culture and traditional matters in reproductive health, and thus they appear to have more respect for local conditions of poverty, culture, and disease [25]. Our findings suggested that pregnant women in the study area still consult TBAs during pregnancy despite the TBA encouraging pregnant women to attend ANC at the health centers. Whether the TBA actually referred pregnant women to the health centers was not clarified. Other studies exploring cultural barriers to ANC utilization have further emphasized the cultural view and perception of pregnant women. In some cultures, the social status of pregnant women is linked to their reproduction and ability to give birth to a healthy baby [18,28,35]. It is therefore implied that pregnant women should go unsupported through the pregnancy. This particular cultural view was not stressed in our study, but participants did explain that many pregnant women do not perceive it as necessary to attend ANC unless experiencing complications.

Another aspect of the socio-cultural beliefs from our study was the perception that men should not necessarily take part in the pregnancy. Participants perceived lack of

support from the husband as a critical barrier to ANC utilization. Previous studies have recognized that encouraging and involving husbands in their wife's pregnancy increases the use of antenatal care services [36–38]. But studies provide different perspectives on how men want to be involved in pregnancy-related matters. Some men do not wish to be actively involved in ANC because they do not understand why it is their responsibility or because it has not been a part of their tradition [14,37]. Similar to our findings, a recent study from Uganda found that many male partners refuse to take part of the ANC due to the compulsory HIV testing [15]. Kaye et al. (2014) argued that men actually want to participate in the pregnancy, but they do not know their role or what the health care system expects from them [36]. The specific male perspective and perceptions of ANC was not explored in our study. Long-term observations from our research group have recognized that some women actually felt proud when they did not involve their husbands in their pregnancy because the pregnancy was culturally considered a woman's affair. It was observed that many believed that the husband's love and affection for his wife was increased if the wife was able to give birth successfully without his involvement (personal experiences with health care practices in Uganda, data not published). Male involvement interventions have been identified as promising to improve maternal health care [39]. A review by Tokhi et al. determined that interventions to engage men in maternal health have proven to increase health care-seeking behavior and support couple communication and joint decision-making [39]. Engaging men through family and community education have been suggested as effective means of changing attitudes and sensitizing men on their involvement in ANC [39]. Strategies to increase women's autonomy may further enhance ANC utilization, as women's autonomy has been positively associated with male involvement in maternal health care and a predictor of pregnant women's health-seeking behavior [16,39,40]. Increasing male partner involvement alone may in fact have detrimental effects by reinforcing unequal gender relations and disempower women [39]. Approaches to male involvement must therefore be carefully considered in order to be inclusive and support women's autonomy. Inter-spousal communication has in this regard been indicated as a mediating factor in enhancing both women's autonomy and husband's involvement [40].

The institutional structures and procedures at the health centers were perceived as restricting in encouraging pregnant women to attend ANC. Especially the compulsory HIV testing and consequent fear of being diagnosed with HIV was perceived as a crucial barrier. Other studies from Uganda indicate that stigmatization against HIV contributes to a negative health-seeking behavior during pregnancies [41,42]. Despite positive intentions of increasing HIV testing and reducing HIV-related stigma, routine HIV testing was perceived to affect ANC attendance by both pregnant women and their partner. Certain payments in terms of required materials and transportation were also perceived to prevent some pregnant women from utilizing ANC. Similar studies from Uganda have also recognized that even though ANC is free, it may still be associated with financial stresses [12,25]. In a study from western region of Uganda, the authors tested cash transfer systems as a method to address this barrier and found that even modest cash incentives may improve access to ANC and maternal health services. [43].

### **Strengths and limitations**

The main strength of the study was the qualitative phenomenological approach to gain knowledge and insight into how the study population perceived barriers to utilization of ANC services. The phenomenological approach ensured that data was obtained without imposing preconceived categories enabling all perspectives and perceptions to appear. This research methodology could be seen as a limitation since the analysis relied heavily on the researchers' interpretation. To avoid individual research bias, the researchers critically reviewed and compared codes and findings. Additionally, researchers were independent and had no conflict of interest to declare.

A limitation of the study was the relatively small sample size. The interviews were all considered thick in information and knowledge; therefore the researchers estimated sufficient depth of understanding without additional interviews. Furthermore, only one TBA was interviewed, as this was the only available TBA that the research group and the local field assistants could identify as preferred by pregnant women.

Purposive sampling was used to identify participants and hence the study findings might have limited generalizability to other geographical locations in Uganda.

## **Conclusions**

Identifying local barriers to ANC utilization are important and should be considered when planning ANC programs. This research highlights the significance of improving the quality and utility of ANC and provides useful insight into pregnant women's health seeking patterns. In light of these findings, we propose that future efforts in northern Uganda and similar settings should focus on how to improve engagement between pregnant women and health workers to ensure a good patient-provider relationship and perceived quality of care, and further how to improve inter-spousal communication and sensitization of husbands for increased involvement in ANC. We recommend more research on how socio-cultural context can meaningfully be aligned to ANC to improve maternal health and reduce maternal mortality.

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## **Declaration of interest**

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