

# Efficacy of Community Factors in the Implementation of Community-Based Interventions to Improve Antenatal Care: Lessons from IMCHA Programme, Tanzania

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## Research

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# Abstract

**Background:** Efforts to improve antenatal care have been heightened to reduce global maternal deaths. In resource-limited settings, community-based interventions play a pivotal role in improving antenatal care services. However, effective implementation of community-based interventions is influenced by prevailing community-related factors. Drawing from the community-based interventions implemented in Iringa Region in Tanzania, this paper underscores how community factors influenced implementation and ultimate improvement of antenatal care services.

**Methods:** A qualitative case study design involving interviews (n=86) and focus group discussions (n=6). Data was collected in Kilolo and Mufindi districts in Iringa Region and analysed thematically.

**Results:** The community readiness to adopt the interventions and effective local administrative systems were the key factors that influenced the implementation of the community-based interventions. Stakeholders' engagement and the local health system support were also pivotal for improving antenatal care services. However, physical environment, bullying of implementers of interventions and family-related challenges constrained the implementation of the interventions.

**Conclusion:** The performance of community-based interventions was highly determined by the community-related factors. In-depth understanding and adequate management of community engagement are important during the planning, development and implementation of the interventions. Inadequate community engagement may lead to community members reluctance to adopt and implement community-based interventions.

## Plain English Summary

Community Based Interventions have been conducted to increase women access to maternal and child health services mostly in resource constrained countries. In such interventions, the use of Women Groups has been emphasised. While implementing such interventions, the role of the community in facilitating or hindering progress is cautioned. In Tanzania Iringa region, implementation of community-based interventions which was geared towards improving antenatal care services was carried out from 2015 to 2020. This study underscores the role played by the community factors as the intervention commenced and progressed.

A survey of community members who participated in the implementation of the interventions was held. Eighty six participants who included women group members, community leaders, community health workers and others attended. In this study in-depth interviews and focus groups discussion are used to enlist data.

It was revealed that community engagement was very important for the success of the implemented interventions. A number of factors were revealed to have facilitated the implementation of the interventions like community readiness, stakeholder's engagement and the local health systems support

while hindrances such as physical environment, bullying implementers of the interventions and family-related challenges were highlighted.

In conclusion, community-based intervention can effectively succeed if the community is effectively engaged. In the process, identification of challenges that may hinder community engagement need to be determined prior to the implementation of the intervention. At the same time, existing facilitators of the interventions need to be crosschecked and strengthened in advance and during the entire intervention phase.

## Introduction

Efforts to improve maternal and child health have been long prioritised at local and global levels. This is precipitated by the fact that preventable deaths caused by pregnancy-related complications are still recorded globally. Evidence shows that everyday 830 women die worldwide from pregnancy and childbirth-related complications, with 99% of the deaths occurring in low and middle-income countries (LMICs) [1]. The average of maternal mortality rate (MMR) in Sub Saharan Africa (SSA) stands at 510 per 100,000 live births, which raises doubts as to whether the targeted goal of reaching 140 per 100,000 live birth will be achieved by 2030 [2]. In Tanzania, for instance, in 2015–2016, maternal mortality was 556/100,000 live births; which was higher compared to the 454/100,000 live births in 2010 [3]. Effective adherence to Antenatal Care (ANC) can potentially reduce adverse effects during pregnancy and after delivery. In particular, ANC has the capacity to provide a platform for critical healthcare function, health promotion and prevention thereby enabling screening and appropriate diagnosis of risks that may affect pregnant mothers [2, 4]. Additionally, pregnant women who attend ANC as recommended have the potential to get treatment of any complications as well as getting preventive interventions like tetanus toxoid immunization, intermittent preventive treatment of malaria, deworming, iron and folic acid among other benefits [5].

The World Health Organisation (WHO) currently recommends that pregnant women without health complications should attend at least eight ANC visits with the first attendance being within the first trimester [6]. This is improvement of the former ANC guidelines that demanded four ANC visits or more, in the absence of complications [7]. Some LMICs including Tanzania still follow four ANC visits or more for pregnant women not diagnosed with severe complications [8]. Despite various efforts in most LMICs, attendance to ANC is still below the desired levels. In Tanzania, for instance, only 24% attended the first ANC visit within the first trimester, whereas 51% attended four times or more [2, 9]. This trend is prevalent in other LMICs; for instance, in Ethiopia, in 2014, only 18% of pregnant women attended ANC early with 32% attending four times as recommended [10], and in Uganda, only 21% attended ANC early, with 48% attending four times or more [11].

In order to address the causes leading to the delays in attending ANC and completion of recommended visits, different strategies have been implemented in LMICs, including Community-Based Interventions (CBIs) that are implemented by Women's Groups (WGs). WGs interventions have the potential to improve

the provision of ANC services and Maternal and Child Health (MCH) services in poor resource settings [12–14]. For instance, in Nepal, the WGs interventions lowered neonatal mortality by 30% and maternal mortality by 80% per 100,000 live births [15]. Whereas Maikhandia interventions in Malawi reduced neonatal mortality rate by 22% and perinatal mortality by 16% [16]; the interventions implemented in Jharkhand and Orissa in India 2009–2012 lowered maternal deaths by 32% and maternal depression was lowered by 57% [17]. However, not all WGs interventions successfully managed to achieve targeted goals. In Bangladesh, for example, WGs interventions did not lead to significant reduction in maternal and child health, and stillbirths did not differ between the intervention and control cluster [18].

Contextual factors in which interventions are implemented have a determining role in facilitating and/or constraining the implementation of WGs interventions [19–22]. In fact, the context in which interventions are implemented has an impact on the potential user of the interventions, implementers of the interventions, professional, and organizational outcome [23–25]. Scholars have underscored different types of contexts that may influence the implementation of CBIs; which are categorised into (i) external context, which includes policy and legislations and buy-in by internal and external stakeholders (ii) organisational factors which include organisational culture, leadership and resources (iii) professionalism like roles and competency and (iv) interventions like nature, characteristics and complexity [26]. Community Contextual Factors (CCF) are also recognised as a strategy for maximizing the performance of WGs interventions to improve ANC [26, 27]. This is because WGs interventions are embedded within the community systems that affect the ability of the interventions to create community change as well as help the implementers of the interventions, implementation research team and other stakeholders to anticipate barriers and problems before they arise [27]. A study by Kok and colleagues identified several community factors that influence the performance of interventions including socio-economic, cultural norms, values, practices and beliefs; gender roles, disease-related stigma, safety and security as well as education and knowledge level of the targeted groups [28]. Effective use of the existing community resources especially social norms and values [29], long-distance and lack of affordable and accessible transport [30] have also been reported as community factors hindering the performance of the interventions

While community factors are important in the implementation of WGs interventions, there is scant literature from LMICs. For instance, most of the existing literature addresses holistic contextual factors as it covers all aspects of context-settings; and this limits an in-depth analysis on either part [12, 21]. Moreover, in Tanzania, literature that addresses WGs interventions are unsatisfactory with few enlisted [31, 32] while that which addresses community contextual factors is virtually missing. This study, therefore, explored the influence of community-related factors on the performance of WGs interventions in Iringa Region.

## **Methodology**

### **Study Design and Setting**

This study employed a qualitative case study design because it aimed to examine the implementation of CBIs in the real-life context of rural intervention villages while reflecting upon the perspective of the participants (33,34]. The study was conducted in Kilolo and Mufindi districts in Iringa Region which were implementing a large project under the Innovating for Maternal and Child Health in Africa (IMCHA) programme (2015–2020). The IMCHA project sought to improve maternal and child health by increasing community demand in seeking ANC services while improving health service delivery at the facility level. The two districts were selected because they exhibit unacceptably low ANC uptake. In 2018, for instance, the first ANC attendance records within twelve weeks in Kilolo and Mufindi districts were 16.8% and 27% respectively. In the same year, pregnant women who completed four ANC or more visits 27.1% in Kilolo district and 23% in Mufindin district as shown in Table 1 which also shows the key characteristics of the study settings

Table 1  
Key Characteristics of the Study Settings

	Kilolo District	Mufindi District
Population	218130	265896
Division	03	05
Wards	22	28
Villages	106	121
Public Hospitals	0	0
Health Centre	2	8
Dispensaries	56	45
Health Workers Available	61%	62%
Shortage of Health Workers	39%	38%
ANC Attendance within 1st trimester as of 2016	16.8%	27%
Four ANC completion as of 2016	27.1%	23%
<b>Source:</b> CCHP Mufindi, 2018 and CCHP Kilolo, 2018		

### Participatory Action Research under IMCHA

The IMCHA project was implemented through Participatory Action Research (PAR) in which the Implementation Research Team (IRT) worked together with community members to address MCH challenges with emphasis on ANC. The PAR was implemented through a series of meetings with implementers of the interventions, namely Women Groups (WGs), Male Champions (MCs), Women Groups Supervisors (WGS) and other stakeholders. The PAR was facilitated by the IRT from the University

of Dar es Salaam and health managers from Iringa Region. The phases and series of meetings are indicated in Fig. 1.

As shown in Fig. 1, Phase I covered identification of ANC problems facing the respective villages and prioritized the most 3–5 ANC problems affecting the community. Phase II involved developing strategies to address the prioritized ANC problems. The proposed strategies were presented to the community meetings by WGs involving different stakeholders, namely government and community leaders, religious leaders, health care providers and health facility governing committees. In phase III, WGs implemented the proposed strategies to improve ANC services. The dominant strategies that were developed included conducting community sensitisation meetings, visiting households with pregnant women, engaging male champion engagement, engaging community gatekeepers' such as religious leaders and village elders as well as health care providers (HCPs) engagements. In Phase IV, the implementers of interventions evaluated the effectiveness and sustainability of the implemented strategies. Details of the PAR process have been reported elsewhere [35].

### **Study site selection and participants**

The study was conducted in the respective wards and villages where WGs interventions were implemented. In each district, five wards were selected; the selected the wards in Kilolo District were Lugalo, Ibumu, Ng'uruhe, Mlafu and Ukumbi. In Mufindi District the selected wards were Kibengu, NyololoShule, Itandula, Igowole and Kasanga. In each ward, two villages were selected to implement the interventions. Participants in this study were purposively sampled from those who directly participated during the implementation of the interventions. In total, 86 participants were involved in the study as indicated in Table 2.

Table 2  
Study Participants

S/N	Category of Participants	Number per district	
		Kilolo	Mufindi
1	Women Groups	15	15
2	Male Champions	05	05
3	Women Group Supervisors	05	05
4	Community Gatekeepers	03	03
5	Health Care Providers	04	04
6	Village Management Team	05	05
7	Council Health Management Teams	04	04
8	Implementation Research Team	04	
	<b>Total</b>	86	
<b>Source:</b> Field Data (2019)			

### Data Collection Techniques

The first author (CJ) collected data using in-depth interviews (IDIs), Focus Groups Discussions (FGDs) and document reviews. The interviews enabled collection of detailed information regarding CCF and provided insights on how this influenced the implementation of WGs interventions. Interview guides were developed after reviewing the IMCHA technical reports and grant proposal. Interview guides were developed to suit each category of the participants. The information required revolved around the community readiness to adopt the designed strategies, the role played by the local leadership, stakeholders' engagement and the role of the local health system. The IDIs were conducted at the participants' homesteads or workplaces. Interviews were conducted from June to September 2019, and each session lasted between 30 and 45 minutes. The interviews were tape-recorded with permission from the participants.

FGDs were conducted with WG members and supervisors who were actively involved during the implementation of WGs interventions. In total, six (6) FGDs, three (3) in each district were conducted with the average of 8–10 participants. The FGDs enabled the participants to discuss their experiences during the implementation of the WGs interventions. The data collected from the FGDs revolved around the factors that facilitated or slowed down the implementation of WGs interventions.

In addition, document evidence was collected in order to elicit meaning and gain an understanding of the health status as well as CCF influencing the implementation of WGs interventions. The reviewed

documents included the Comprehensive Council Health Plans (CCHPs) which provided information on the status of maternal and child health, antenatal care and overall health services provision in the two districts. Other documents included The IMCHA project strategic and action plans, programme meeting reports, formative research reports, workshop reports, and project progress reports. These reports provided a good opportunity to gain a detailed analysis on how WGs interventions were implemented, recorded successes, the challenges experienced as well as the perceptions of the community members on the interventions. On the whole, the documents enabled comparison, triangulation and confirmation of the findings generated in-depth interviews and FGDs on the implementation of WGs interventions.

## **Data Analysis**

A thematic approach was used to analyse the data [36]. In-depth interviews and FGDs were transcribed verbatim and translated from Swahili into English. Transcripts and field notes were read several times in order to identify common patterns which were then crosschecked with tape-recorded information. Common ideas that emerged included community readiness, the role of local administrative systems, health system factors, community physical environment, bullying of WGs by the community members and WGs family challenges among others. These common ideas were coded and categorised into common themes, namely community facilitators and barriers of the WGs interventions.

## **Ethical Considerations**

The study was approved by the ethics committees of the University of Dar es Salaam in Tanzania with the certificate No AB3/14 (B). Permission was sought from the Regional Administrative Secretary in Iringa and the respective offices in Kilolo and Mufindi districts. Verbal Informed consent was obtained from participants because in these settings asking respondents to sign consent forms would be threatening. Participants were also informed of their rights to withdraw from the interviews for any reasons. Interviews were audio-recorded after obtaining consent from the participants. The transcripts were only accessible to the team members. Individual identification was not attached to the findings and all quotes used to illustrate participants' views did not have any personal identities.

## **Findings**

The findings reported in this paper are broadly categorised into two major themes namely facilitators and barriers to the implementation of the WGs interventions. On the one hand, facilitating factors include community readiness to adopt the interventions, the role of community leaders, stakeholders' engagement and support of the local health systems. On the other hand, constraining factors include unfavourable physical environment, victimization of the WGs and family-related challenges.

### **Community-related Factors that Facilitated the Implementation of WGs Interventions**

#### **Community readiness to adopt the interventions**

During the implementation of the interventions, community members' showed satisfactory readiness to adopt the strategies implemented by the WGs. One of the factors that triggered the community readiness to adopt the interventions included active participation during the sensitisation meetings. During these meetings, community members were sensitised on the importance of attending ANC within the first trimester, completing four or more ANC visits, use of family planning methods and avoiding home delivery, among others. During the sensitisation meetings, community members had the opportunity to ask, get clarification and probe more about ANC from WG members as illustrated by one respondent:

*Whenever we conducted sensitisation meetings, community members were always willing to attend. In fact, there were a few instances when the attendance was poor but this was due to other factors, especially unfavourable weather. In these meetings, participants were curious about raising so many maternal related issues. They went further telling us that they wished this intervention would have taken place many years back (IDI with WGs members in KDC).*

Another reason for community readiness was the direct support provided by the WG members to pregnant women who needed help. This increased community confidence and trust of WGs hence they adopted the implemented interventions. WGs provided material support such as sugar, cooking oil, soaps, flour as well as escorting pregnant women who needed facility assistance. During the FGDs participants explained how this touched community members as narrated by one participant.

*At first, community members were sceptical of our works; they thought we were not serious enough. But having witnessed our support to pregnant women and searching for malnourished children in the village their confidence in us increased. Afterwards, it was the community members themselves who used to direct us to pregnant women whom they thought needed our assistance (FGD with WG, in KDC).*

Participants also revealed that following the implementation of the interventions, pregnant women were keen to complete four or more ANC visits, and even their spouses were supportive. It was evident that some community members who had myths on contraceptive started using family planning methods. Hospital deliveries had also increased because of the increased sensitisation and home visits as affirmed by one health care worker:

*Community members have embraced this programme and have adopted the interventions. Since this intervention started, we have seen women from the communities coming to the health facility to inquire about different family planning options. They even come along with their partners. Our records also show that deliveries at this facility have increased (IDI with health worker in MDC).*

Additionally, the fact that community members participated during the first stage of implementing the interventions by selecting WGs, supervisors increased the sense of ownership of the programme. They had confidence in the among implementers of the interventions because they participated in selecting them. As a result, health education messages on the importance of utilisation of ANC services disseminated by the WGs were easily accepted by the community.

## **The role of community leaders**

The WG members frequently cited the support of community leaders in the implementation of the interventions. These included the elected and appointed leaders who formed the VMT especially, the Village Executive Officers (VEOs), the Village Chairpersons (VCs) and hamlet chairpersons. These leaders were actively involved throughout the implementation phases and Community leaders played different roles including (i) introducing WGs to the community members during the sensitisation meetings; (ii) organising meetings in their areas of jurisdiction for WG members to deliver their ANC messages, (iii) providing moral and material support such as space to hold their meetings and items to facilitate their work such as reams of papers and pens (iv) prioritising ANC issues and integrating them in the village development plans; (v) recognising and appreciating WGs implemented activities; (vii) providing security to WGs especially when visiting pregnant women at night and (viii) introducing WGs to the neighbouring village leaders where they wished to extend the implementation of the interventions. Some respondents narrated:

*Our village leaders accorded us all assistance that we needed. Whenever we went to their offices or called them on phone, they were quite ready to help us. Our local leaders especially the VEOs would even provide us with security in case we wanted to check on pregnant women at night (IDI with MCs, in MDC).*

The IRT member added:

*Community leaders were important during the implementation of the interventions. Given the fact that we involved them from the beginning of the interventions; it was very easy for them to support the implementation of the interventions (IDI with IRT).*

## **Stakeholders' engagement**

Effective participation of stakeholders was mentioned by the participants as an important aspect that facilitated the adoption of the interventions. It was revealed that stakeholders were fully engaged through different series of workshops and review meetings that were held during the implementation of the interventions. In most of the meetings and workshops, the participants included; district health personnel, ward and village leaders, elders, religious and traditional leaders and health care workers. During the workshops the stakeholders and WG members shared various problems, proposed interventions and reported success as well as the challenges they encountered in their respective communities. Stakeholders who attended these workshops got the opportunity to provide their opinions on the strategies and implementations process. In addition, these workshops served as the forum for health care workers to engage the community members and jointly refine the proposed strategies to improve ANC services in the health facilities as illustrated by one respondent:

*Our participation during the implementation of the interventions is commendable. It helped to understand what WGs we were doing in the community. After being convinced by their activities as in charge of the*

*facility, I used to ask my fellow staff to join them during sensitisation meetings so as to elaborate some issues that needed professional know-how (IDI with health worker, in MDC).*

Having witnessed the roles that WGs were playing through the series of meetings and workshops, community and religious leaders joined the implementers to educate the community members in the church congregations as reported by one respondent:

*IMCHA was one of the blessings for our village. I used to participate in several review meetings where we were informed of the good work that WGs were doing in our communities. Thus. I frequently preach during church congregations the significance of ANC services for our mothers and children during church congregations (IDI with CG, in MDC).*

The views from the participants explain how crucial the engagement of stakeholders was during the implementation of WGs interventions was very crucial as it enabled most of the community members to know the implemented interventions in their areas of jurisdiction. Apart from providing technical knowledge during the meetings, stakeholders also served as the mouthpiece of sensitising community members on the need to utilise ANC services. The engagement, community stakeholder engagement was acknowledged by the IRT who mentioned that this was very pivotal for establishing supporting mechanisms that encouraged, advised and helped the WGs during the interventions.

### **Support of local health systems**

It was revealed from the findings that the success of the WGs interventions relied upon the support of the local health systems. Participants reported that health workers were actively involved in different stages during the implementation of the interventions. Effective participation of health workers in the workshops enabled them not only understand strategies that were implemented by the WGs to improve ANC services but also to become part of the implementation process as expressed by one respondent.

*We worked closely with health workers; and in the facilities and this made our work persuasive. For instance, whenever we referred pregnant women to the facility for more information, health workers would attend to them very well. Similarly, whenever we invited them to attend our community sensitisation meetings, they would come and help us in clarifying some of the health issues (IDI with WGS in KDC).*

This revelation was affirmed by health workers who concluded that it would be difficult for WGs to accomplish their mission without their participation:

*We are the one who received clients who were sensitized by the WGs. And in most cases, we used to attend sensitisation meetings that were held at the village level and clarified several ANC issues that were technical such family planning issues (IDI with WGS in KDC).*

The, community health workers who were also Women Group Supervisors (WGSs) in this programme, were actively involved in the implementation of the interventions. Their roles were among others to

supervise all activities implemented by WGs, and liaising with health workers and village leaders to ensure that all envisioned activities were implemented. They also organised sensitisation meetings, strategised the process of visiting pregnant women at households and arranged with religious leaders to visit churches. WG members also received support from Health Facility Governing Committee (HFGC) members who also participated in the training, workshops and meetings. Apart from participating in sensitizing community members on the importance of ANC, these leaders served as a bridge between the community, implementers of the interventions and health facilities.

## **Factors that Constrained the Implementation of WGs Interventions**

### **Physical Environment**

Participants complained that unfavourable weather the topographic nature of the villages and the long distances from communities to health facilities hindered the implementation of the interventions. It was revealed, for instance, that heavy rains from December to May halted the implementation of most of the strategised activities. Several sensitisation meetings were postponed, while a few that were held attracted few community members and implementers of the interventions. The most affected intervention villages, were Igowole, Ibatu, Kasanga, Ihomasa, Kibengu and Usokami in Mufindi District, and Ng'uruhe, Isuka, Winome, Ukumbi, Mlafu villages in Kilolo District as illustrated by one respondent:

*Rains were a hindrance to our efforts in sensitising the community on the use of ANC services. We used to hold public meetings in open spaces but when it rained, we had to postpone them. Attendance by community members in these meetings during the peak of the rainy season was also poor. In several occasions, we postponed the meetings in the middle as rains continued. In some months, it rained consecutively for the whole week and thus disrupted our work plan (FGD with WGS, in MDC).*

This view was supported by some village leaders as exemplified by one respondent:

*...In our villages, especially from January to April, it rains consecutively. During this period, getting adequate attendance in public meetings is always challenging (IDI with Village leader in MDC).*

In addition, heavy rains disrupted community infrastructure and the means of transport within the villages were highly affected. As a result it became difficult to walk or even drive within the village or move from one household to another during the rainy season because of slippery roads, heavy mud as well as wet and narrow footpaths. Participants complained that during the rainy season transport costs became so high as many roads were impassable. At the same time, not all WGs had fare to reach particular hamlets to attend sensitisation meetings since they were located very far; which significantly affected the interventions.

### **Mistreatment by Community Members**

Findings in this sub-theme revealed that in some households which WGs visited, they were not jovially received, and instead, they were rebuked such that some of them were about to despair while carrying on

with the interventions. It was revealed that some pregnant women and their partners were of the view that the WGs wanted to scout their private life. The situation worsened when WGs visited some households at night after receiving information from community members that some pregnant women had not attended ANC. In order to reduce some risks, WGs asked village leaders to offer them security while executing such tasks during the sundown. A few WG members reported that in some households they were even intimidated, especially during the early stage of implementing the interventions when village members were not yet fully aware of the roles of the WGs in their villages. This was mentioned in the FGDs held with women group members as listed in Table 3.

Table 3

Embarassing Statements during Home Visits.

Kilolo District	Mufindi District
√ How did you come to know that I am pregnant?	√ You better leave my home, I have nothing to tell you.
√ I will deal with whoever told you that I am pregnant.	√ I don't know why you ask me such private questions.
√ If anything bad happens to me you will be liable.	√ Make your story very short; I have other businesses to attend to. After all, what you are saying is not new to me.
√ My daughter is not pregnant unless you have come for other issues.	√ My husband is not here, I cannot listen to what you are talking about. You should come next time when he is present.
√ Give us the money that you are given instead of tormenting us with your questions.	√ I am old enough to know my responsibility when pregnant, you are still too young to advise me.

**Source:** Field Data (2019)

### Family-related Challenges among the Implementers

Families of the implementers of the interventions were stated to have constrained the performance of the interventions as well. It was revealed that not all families approved their family members to actively participate in the implementation of the interventions. For instance, married WG members faced the challenges of convincing their partners to continue implementing the interventions. Findings revealed diverse intriguing issues that surfaced among family members who disapproved their partners to participate in the interventions. Some male partners were also reported to demand their wives to withdraw from the project as it was wastage of time. Respondents reported that women in Kilolo and Mufindi districts are the ones who fully engage in productive activities like cultivation, thus spending more time implementing interventions could have affected food security at the family level. During the FGDs, one participant had this to say:

*...At times I failed to tell my husband where I was going. This is because he was not supportive of the interventions we were implementing. I knew the risk of telling him where I was going daily since I knew his*

*reaction” (IDI with WG, in MDC).*

Secondly, some members complained of lack of payment for the WGs efforts. Findings revealed that during the period when women were selected to join WGs, their family members relaxed hoping that it was a kind of income-generating activity, only to find out that their partners were merely volunteering. According to the participants, their partners were not happy having heard that there would be no payments for the tasks they were performing, as elaborated by one respondent:

*My partner always wanted to know the amount of money I was paid. No matter how often I told him that we were not paid, he never understood. You know, when you spend such a long time walking all over the village and come back home very tired with nothing in the pocket, very few partners will understand why you keep committed to the intervention (IDI with WG, in MDC).*

Thirdly, some male partners complained that WGs were not taking care of their families as they spent more time implementing the interventions. Some WG members used to meet twice a week for visiting households. In most cases, sensitisation meetings were conducted in the evening and thus WG members who lived far from the hamlets where meetings were conducted arrived home very late as narrated by one respondent:

*I Often, I arrived home late because I had to walk a long distance from my home to the meeting venue. I would get back home late after meetings and I often found my little children asleep. This most often annoyed my husband (IDI with WG, in MDC).*

Lastly, some WG members reported that family members were worried that WGs were draining more family resources for the intervention than it was anticipated. In some cases, WGs had to incur transport costs when attending sensitisation meetings, and also bought stationeries and drinking water during the meetings. Moreover, some more funds were needed to buy uniforms like *Vitenge (local print fabric)* and helping pregnant women who needed assistance as illustrated by one respondent:

*It is true that at first when we were selected to join WGs, our partners were contented that we would bring food home; to the contrary, we took food away. This is what contributed to discontentment in our families and they did not want to hear anything regarding the interventions. At times, we did not even inform our household members about where we were going to avoid escalating the conflicts (FGD with WG, in KDC).*

## **Discussion Of The Findings**

This study aimed at examining the influence of community-related factors on the performance of community-based interventions in a bid to improve ANC services drove this study. The study specifically examined how community-related factors facilitated or constrained the implementation of the interventions. This was triggered by the fact that strengthening ANC services has the potential of attaining the sustainable development goal (SDG) no 3, which emphasizes that no country should have maternal mortality Rate (MMR) above 140 per 100,000 live births by 2030 [2]. In this regard, the

implementation of CBIs through WGs is envisaged by scholars and health policy analyst as an important initiative in reducing the appalling maternal deaths, especially in resource-constrained settings. The intervention strategies which were common in all intervention villages included like community sensitisation meetings, household visitations, sensitisation of community members in informal gatherings such as local bars, playgrounds, and formal gatherings like religious gatherings. The findings revealed that the facilitating factors included community readiness to adopt the interventions, the role of community leaders, stakeholders' engagement and support of local health systems. On the other hand, the key factors that constrained the implementation of the community-based interventions included unfavourable physical environment, victimization of the WGs by community members and family-related challenges.

It is evident from the findings that without community readiness to adopt interventions, the implementation of the designed strategies would fail. Evidence elsewhere indicated that unless a community is ready, initiation of the interventions programme is unlikely, and if a programme starts without the support of the community, it is likely to fail [37]. Thus, tailoring community needs at the centre of interventions strategies is essential for programme success [38]. A review of 61 studies revealed that effective community readiness to adopt the interventions become effective when the designed strategies do not only engage women of reproductive age and their families, but also the whole spectrum of the community for sustainable outcomes [31]. A qualitative study that employed 29 studies across 17 countries revealed that community readiness played an important role in the utilisation of maternal waiting home to reduce maternal deaths [39]. In specific, community readiness helped in identifying and addressing the factors limiting the use of maternal waiting homes such as getting approval and support from partners, and risks of staying away from their families for a long time [40].

The findings confirmed that effective implementation of WGs interventions to improve community health relies more on the extent to which community leaders are engaged throughout the implementation phase. The interventions implemented in Kilolo and Mufindi districts benefited from the exerted endeavour by the community leaders. A handful of studies have shown that engagement of local leaders serves as a bridge between the community, implementers of the intervention, health facilities and higher administrative structures [21, 40, 41]. In the ACCLAIM project implemented in Uganda, Malawi and Swaziland to improve maternal health local leaders mobilised community members to seek MCH services, interacted with facility workers to ensure proper service delivery, engaged in resource mobilisation and communicated facility needs to the responsible authorities [39]. It is argued that community leaders have identities of 'trust'. For instance, informal leaders like pastors, church leaders and elders are normally trusted while formal leaders have authority over the community; which enables them to enforce some directives to the community [39]. In India, it was attested that when local health personnel and chairmen participated in community meetings to plan strategies with community members, the discussion was livelier and planning more productive [14]. In addition, a study that was conducted in Nepal reported that community leaders had a direct interactions with government officials on the problems that faced health providers and women themselves; and thus there was more openness among officials in resolving the issues, and a greater willingness to accept feedback from the community [42, 43]. It has been reported that if the roles

of leaders are not taken seriously, the outcomes can be compromised. This was evidenced in the intervention implemented in Uganda where local leaders failed to exert the anticipated cooperation; and thus the performance of the intervention was slowed down [44].

The present study further showed that health workers, community health workers and local health facility committee members played a great role in ensuring that sensitized community members utilise the existing ANC services. Though WGs interventions are highly needed in settings with not well-functioning health systems, when it happens that interventions are implemented in settings where health systems are well established, the chances that interventions will perform better are higher. In other contexts, evidence has shown that in settings where WGs interventions were implemented in communities with weak health systems, the expected outcomes were compromised. For instance, in the interventions implemented in Zambia, women volunteers expressed their dissatisfaction as many sensitized community members did not attend the health facility due to long distance to health facilities [45]. Again, in Ghana, it was found that despite the increased demand for ANC at the community level, health system challenges like delays in service provision, staff absenteeism and poor interpersonal skills deterred clients from seeking further ANC services [46]. Thus, CBIs may not yield good results if the health system structures are not well mainstreamed. The findings of this study and evidence from the literature suggest that the interventions aiming at improving maternal health outcomes need to be multi-pronged and comprehensive so that they explicitly address both health service constraints on the supply side, as well as contextual factors like socioeconomic factors, demographic factors and knowledge barriers, on the demand side [47].

While some community factors play a pivotal role in facilitating the implementation of WGs interventions, other factors may impede the interventions. For instance, unfavourable geographical settings in which interventions are implemented to improve ANC services have received desirable attention among scholars [28, 48, 45, 30]. In the present study, access to community sensitisation meetings and mobility within the community was a big challenge during bad weather seasons. The study conducted in Northern Ghana reported similar findings as women volunteers and their supervisors faced great challenges especially during the rainy season as they were supposed to visit 200 compounds. They thus found it difficult securing transport to enable them make it regularly to the homes as walking on foot was very tiring due to the long-distance [46]. A study in Kenya revealed the same findings in which volunteers cited that though they were living within the community, they covered long distance on foot to reach some clients. The situation became worse when they encountered impassable roads even with the use of motorbikes [45]. In Zambia, it was reported that women group volunteers feared walking to reach distant households who needed referral assistance. In order to address geographical factors like transport challenges, some interventions designed emergency the means of transport ranging from motorised and non-motorised transport such as bicycles, animal-drawn carts and canoes, [49–51]. Such transport played an important role in mobilising pregnant women to attend ANC thereby increasing facility delivery in Nigeria [52].

The influence of some family members like husbands or mothers-in-law in the intervention villages were also determinant in the utilisation of the interventions. In particular, families that were not pro-

interventions discouraged WGs from active involvement in the interventions thereby impeding its implementation. The role of families especially husbands and in-laws in impeding not only strategies to improve ANC services, but also the whole continuum of care to pregnant women has been widely underscored [53, 54]. The reason for husbands discouraging WGs members participation in improving ANC has been attested to be influenced by a number of issues like existing gender inequality, lack of awareness due to inadequate sensitisation and child health education programmes in the communities [54]. The findings in the present study resonate with other studies conducted elsewhere which revealed that despite women volunteers' preference to implement the interventions; they were denied permission by their husbands and or family members [13, 55]. The same experience of women volunteers lacking the support of their family members to implement interventions was also highlighted by Morrison et al. [13] in rural Nepal.

A number of strengths and weaknesses can be drawn from this study. The findings of the study inform researchers, policymakers and other stakeholders about the importance of considering contextual aspects and, more importantly community-related factors during the planning, development and implementation of community-based interventions through WGs interventions. The study also informs the importance of prioritizing community prospects, worries, and opportunities when designing the interventions. This study utilized multiple participants and this, enabled effective validation of data from diverse participants. Besides, the qualitative design that was employed successfully captured participants' experiences during the implementation of the WGs interventions. However, the study was not without limitations. The sampled participants were only those who actively participated during the interventions, while WGs who dropped from implementing the interventions for some reasons were not included in the study. Perhaps, if their views were captured, validation of the data could be increased. Furthermore, the coverage of this study in the two districts in Iringa Region cannot warrant the findings to reflect the prevailing community-related factors in other districts in Tanzania. Notwithstanding these limitations, this study has managed to shed light on the importance of prioritising community-related factors in designing and implementing community-based interventions to increase the adoption and sustainability of the interventions.

## **Conclusion**

This study aimed to examine the influence of community-related factors on the performance of community-based interventions to improve ANC services. The study re-affirms that contextual factors in which interventions are implemented have a determining role in facilitating and/or constraining the implementation of the interventions. When designing, developing and implementing community-based interventions, it is important to consider community preferences because community members are the final consumers of the interventions. In other words, in-depth understanding of the community-related factors before the implementation of WGs interventions has the capacity of maximizing the facilitating factors while minimizing inhibiting factors during the planning, development and implementation of the interventions. therefore, during the process of designing intervention, the focus should not only be on the

outcomes but rather on the entire implementation phases especially the community spectrum in which the intervention will be implemented. This may warrant adoption and sustainability of the interventions.

## Abbreviations

ANC: Antenatal Care; CBIs: Community Based Interventions; CCHP: Comprehensive Council Health Plan; CG: Community Gatekeeper; CHMT: Council Health Management Team; CHW: Community Health Workers; FGDs: Focus Group Discussion; HCP: Health Care Provider; HFGC: Health Facility Governing Committee; IDI: In-depth Interview; IMCHA: Innovating for Maternal and Child Health in Africa; IRT: Implementation Research Team; LMIC: Low and Middle-Income Countries; M&E: Monitoring and Evaluation; MCH: Maternal and Child Health; PAR: Participatory Action Research; PLAWG: Participatory Learning and Action Women Groups; SDGs: Sustainable Development Goals; SSA: Sub Saharan Africa; VEO: Village Executive Officer; VMT: Village Management Team; WGS: Women Group Supervisors; WGs: Women Groups;

## Declarations

### Ethics Approval and Consent to Participate

This study was approved by the Ethics Review Committee of the University of Dar es Salaam Ref. No: AB3/14 (B). The University of Dar es Salaam has been given the mandate to issue research and ethics clearance to its staff and students on behalf of the Government of Tanzania and the Tanzania Commission for Science and Technology (COSTECH). Participants in this study were informed verbally and in writing. The collected data were treated confidentially and were used by the research team only. The privacy of the participants in this study was also upheld.

### Consent for Publication

Not applicable

### Competing Interests

The authors declare that they have no competing interests.

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## Authors' Contributions

CJ and SM conceived and designed this study. SM and PK supervised the implementation of field research and data management. CJ analysed the data and drafted the manuscript with inputs from all co-authors. All authors read and approved the final version of the manuscript.

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## Availability of data and Materials

The datasets generated and/or analysed during the current study are not publicly available because they are still in use but they are available from the corresponding author on reasonable request.

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## Figures

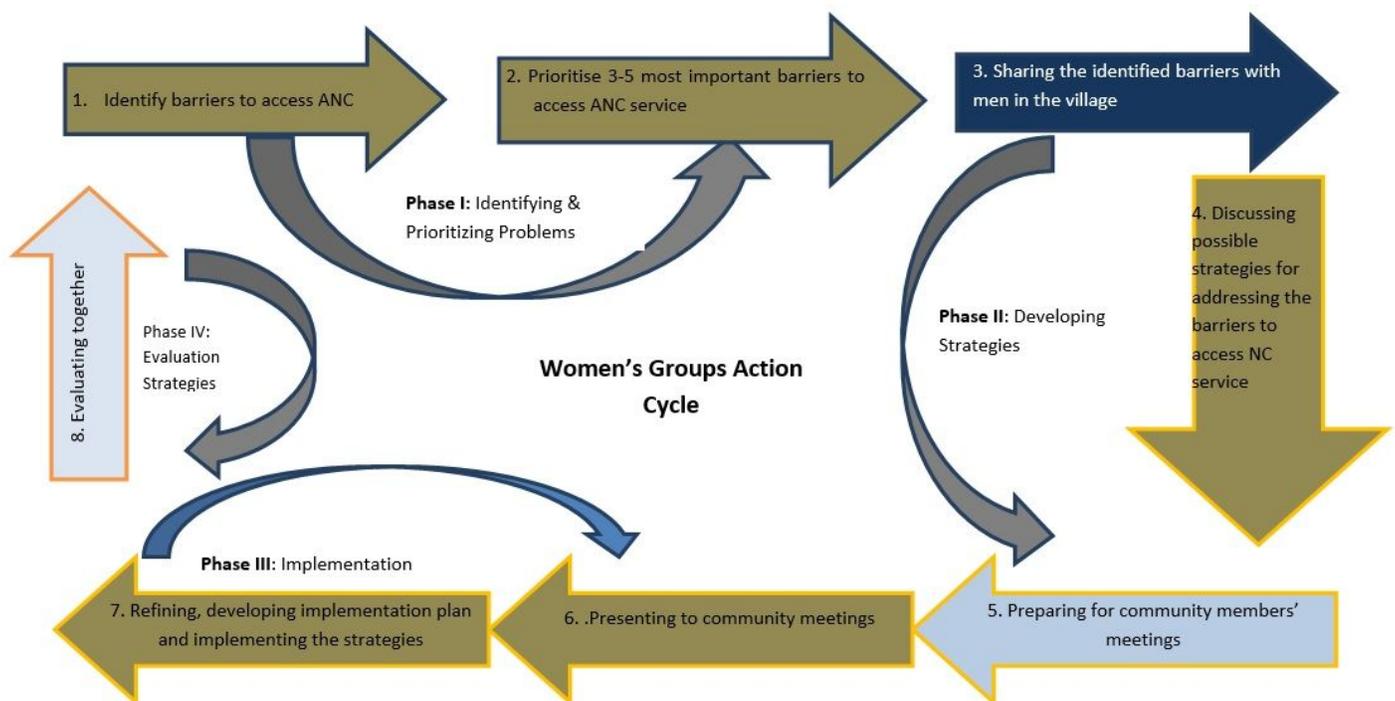


Figure 1

## Women Groups Participatory Action Cycle