Maternity waiting areas – serving all women? Barriers and enablers of an equity-oriented maternal health intervention in Jimma Zone, Ethiopia

Nicole Bergen, Lakew Abebe, Shifera Asfaw, Getachew Kiros, Manisha A. Kulkarni, Abebe Mamo, Sudhakar Morankar & Ronald Labonté

To cite this article: Nicole Bergen, Lakew Abebe, Shifera Asfaw, Getachew Kiros, Manisha A. Kulkarni, Abebe Mamo, Sudhakar Morankar & Ronald Labonté (2019): Maternity waiting areas – serving all women? Barriers and enablers of an equity-oriented maternal health intervention in Jimma Zone, Ethiopia, Global Public Health

To link to this article: https://doi.org/10.1080/17441692.2019.1597142

Published online: 25 Mar 2019.
Maternity waiting areas – serving all women? Barriers and enablers of an equity-oriented maternal health intervention in Jimma Zone, Ethiopia

Nicole Bergen a, Lakew Abebe b, Shifera Asfaw b, Getachew Kiros b, Manisha A. Kulkarni c, Abebe Mamo b, Sudhakar Morankar b and Ronald Labonté c

aFaculty of Health Sciences, University of Ottawa, Ottawa, Canada; bDepartment of Health, Behavior and Society, Jimma University, Jimma, Ethiopia; cSchool of Epidemiology and Public Health, University of Ottawa, Ottawa, Canada

ABSTRACT
In Ethiopia, maternal waiting areas (MWAs) – residential areas near health facilities where women can stay while waiting to give birth – are community-based, equity-oriented interventions to improve maternal outcomes among rural populations. In this qualitative study we sought to explore the barriers and enablers that Health Extension Workers (HEWs) encounter when engaging with communities about MWAs. We conducted semi-structured interviews with HEWs across rural sites in Jimma Zone, Ethiopia. Drawing from an ecological model of social determinants of maternal and child health, we analysed data using thematic coding methods. HEWs reported a variety of factors that determined MWA use, including the number of children at home, previous childbirth experiences, community support networks, decision making practices within families, the availability and acceptability of health services, geographical access, and health beliefs. HEWs worked to increase the use of MWAs by engaging with husbands and communities, raising awareness in target groups of women, and managing community participation. Policies and practices that support enhanced training for HEWs, increased resources for communities, and greater opportunities for HEWs to liaise with decision makers at various levels of influence are possible ways forward to improve MWA use, specifically, and maternal and neonatal/child health outcomes more generally.

ARTICLE HISTORY
Received 23 August 2018
Accepted 11 March 2019

KEYWORDS
Maternity waiting area; health equity; maternal health; social determinants of health; qualitative research

Introduction
The reduction of maternal and neonatal mortality remains a major challenge in many low-income countries (Victora et al., 2016). In Ethiopia, the maternal mortality rate in 2015 was 353 deaths per 100,000 live births, and neonatal mortality was 29 deaths per 1000 live births, representing a considerable improvement since 2000, when these rates were 897 per 100,000 live births and 48 per 1000 live births, respectively (World Health Organization, 2018a). The country has seen recent gains in coverage of key maternal health services, such as receiving antenatal care (increasing from 27% to 62% from 2000 to 2016) and delivering in a health facility (increasing from 5% to 26% from 2000 to 2016) (Central Statistical Agency, 2017). Women from poor households, in rural areas, with low levels of education and/or with closely-spaced children, however, were less likely to benefit from these services – and so, too, their children (Central Statistical Agency, 2017).
Maternity waiting areas (MWAs) are an equity-oriented intervention to improve maternal and neonatal survival by addressing geographical barriers to accessing health facilities. MWAs are residential structures built near health facilities where women can stay during the final weeks of pregnancy, giving them access to maternity care, and allowing them easy access to the facility when labour begins. In Ethiopia, the first MWAs of the 1970s and 1980s were built near hospital delivery units and pioneered by faith-based organisations (Gaym, Pearson, & Soe, 2012; Poovan, Kifle, & Kwast, 1990). In more recent years, with the Federal Ministry of Health goal for all women to give birth at a primary health care unit or hospital, renewed MWAs at primary health care units are being initiated through the support of local governments (who are responsible for monitoring the construction and implementation of MWAs) and communities (who contribute money, supplies and/or labour) (Ministry of Health Ethiopia, 2015). In 2016, 20% of health facilities had a standalone MWA, and an additional 32% had an MWA room within the facility (Ethiopian Public Health Institute and Averting Maternal Death and Disability, 2017). Although giving birth at a health facility has been shown to reduce the risk of neonatal mortality rate by nearly one third (Tura, Fantahun, & Worku, 2013), studies have yielded inconclusive evidence that MWA use lowers maternal and neonatal mortality (Kelly et al., 2010; van Lonkhuijzen, Stekelenburg, & van Roosmalen, 2009).

The Safe Motherhood Project, a collaborative research project between Jimma University and the University of Ottawa, is currently underway in the Jimma Zone of Ethiopia to evaluate the implementation and effectiveness of renewed MWAs in improving the rate of health facility deliveries and, in turn, maternal and neonatal health outcomes. In 2016, the Safe Motherhood Project undertook a quality assessment of 24 MWAs in Jimma Zone based on the indicators in Table 1, and found high variability in the materials, infrastructure and services available. At this time, none of the 24 MWAs was considered fully functional (i.e. satisfying all 11 indicators).

Given that renewed MWAs target women with limited contact with the health system, MWA use is contingent on community-based agents to raise awareness, promote their use, and refer pregnant women (Figa-Talamanca, 1996). In Ethiopia, the predominant health workforce in rural and remote communities is Health Extension Workers (HEWs). HEWs were introduced as part of the Ethiopian Federal Ministry of Health’s 2003 Health Extension Program, which aimed to recruit, train and deploy two female HEWs at each rural health post (serving approximately 5000 people) (Banteyerga, 2011). HEWs’ work mainly centres on disease prevention and health promotion through community mobilisation and health education, including a large role in demand creation for maternal, neonatal and child health (MNCH) services (Mangham-Jefferies, Mathewos, Russell, & Bekele, 2014). HEWs are deeply embedded in families, communities and the health system and, as such, are integral to the success of community-level health initiatives. To date, little is known about the present role that HEWs have in the promotion and implementation of renewed MWAs. This article aims to explore

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Physical structure with three rooms: one room for midwives and two rooms for mothers</td>
</tr>
<tr>
<td>2</td>
<td>Kitchen with standard utensils as well as with chimney and dishwashing system</td>
</tr>
<tr>
<td>3</td>
<td>Sufficient sleep area and beds to accommodate 10 women</td>
</tr>
<tr>
<td>4</td>
<td>Locally-appropriate food and drinks</td>
</tr>
<tr>
<td>5</td>
<td>Home-like environment (e.g. coffee ceremonies and other traditional elements)</td>
</tr>
<tr>
<td>6</td>
<td>Follow-up by skilled attendant (using partograph)</td>
</tr>
<tr>
<td>7</td>
<td>Attendant to prepare food and clean</td>
</tr>
<tr>
<td>8</td>
<td>Water supply</td>
</tr>
<tr>
<td>9</td>
<td>Bathing room</td>
</tr>
<tr>
<td>10</td>
<td>Electricity</td>
</tr>
<tr>
<td>11</td>
<td>Latrine facilities (separated, for MWA use only)</td>
</tr>
</tbody>
</table>

Notes: This list of standardised MWA indicators was used to conduct a quality assessment of 24 MWAs in Jimma Zone in 2016. The list was developed based on the Guideline for the establishment of Standardised Maternity Waiting Homes at Health Centers/Facilities (Ministry of Health Ethiopia, 2015) by the Jimma Zonal Health Department.
the barriers and enablers that HEWs encounter when engaging with communities about MWAs, and the strategies that they use.

Methods

This study is part of the Safe Motherhood Project, a mixed-methods, randomised cluster-intervention trial aimed at improving access to, and use of, MWAs as a strategy to reduce preventable maternal and neonatal mortality. The Project is being carried out across 24 study sites (i.e. primary health care units) in three rural districts of Jimma Zone, Ethiopia (Gomma, Kersa and Seka Chekoresa districts). Each study site consists of about five health posts, where two or three HEWs are stationed to serve the surrounding community. For the Safe Motherhood Project, the 24 study sites were randomly allocated into three study arms: a control arm; an arm receiving an information, education and communication (IEC) intervention; and an arm receiving both an IEC intervention and upgraded MWAs.

In this study, we report on results of some of the findings from the qualitative baseline component of the larger project. Our particular interest was to generate an in-depth understanding of HEW perspectives and experiences related to the MWA initiative in Ethiopia. Our framework (Figure 1) is based on the ecological model of social determinants of maternal health, originally developed by Solar and Irwin (Solar & Irwin, 2010) and adapted by the World Health Organization Commission on Social Determinants of Health (World Health Organization, 2011); the model has been further adapted and applied to low-resource settings (World Health Organization, 2018b).

Data collection

From November 2016 to February 2017, we conducted one-on-one, in-depth interviews with HEWs. The study sample frame included 36 HEWs from across the 24 study sites to align with the quantitative data collection of the larger mixed-methods trial. We recruited a minimum of one HEW from each of the 24 study sites; at 12 study sites (4 in each of the three arms, selected at random using Wolfram Alpha software), we recruited two HEWs (Appendix 1). Within study sites, we consulted with primary health care unit directors to purposively select health posts, and then recruited participants from the HEW (or HEWs) present at the health post at the time of data collection.

Figure 1. An ecological model of determinants of MWA use in Jimma Zone, Ethiopia.
We developed an interview guide based on results of a rapid qualitative assessment conducted in May-June 2016 (Asfaw et al., 2019; Bergen et al., 2018). The guide consisted of question sets related to: MNCH service provision and use; community participation in MNCH activities; MNCH problems; MWAs; and health education and community interactions (Appendix 2).

English-speaking data collectors from Jimma University conducted interviews with HEWs in the local language (Afan Oromo). All of the data collectors were trained to the graduate university level, and several of the data collectors had previous experience working with the study on the rapid qualitative assessment (Bergen, 2018) or had conducted interviews or focus groups as part of other research projects. Prior to data collection, these individuals participated in a specialised week-long data collection training and induction workshop facilitated by the research team. Data collectors conducted interviews independently under the supervision of at least two researchers from the Safe Motherhood Project. The data collectors audio recorded the interviews and prepared written transcripts in English. To ensure completeness, researchers fluent in English and Afan Oromo checked a random sample of transcripts against the recordings. Data collectors and researchers kept field notes to document their experiences and impressions, which we read alongside transcripts during data analysis to add depth and context.

Data analysis

We undertook thematic content analysis focusing on emergent concepts and categories (rather than words or phrases) (Low, 2013) in two stages using Atlas.ti software. In the first stage, following multiple readings of the transcripts, five members of the research team (all of whom were involved with the day-to-day data collection activities, and had previous experience and training with qualitative methods) collaboratively developed an initial code guide (inductive, according to the domains of questioning), and coded an initial selection of transcripts. A group of six researchers (including three of the data collection supervisors) familiar with the transcripts convened to discuss the preliminary findings and refine the code guide to accommodate emergent themes. The Project co-leads advised on the process and provided guidance as required. After reaching agreement about how to apply the code assignments, and then applying the guide to all HEW transcripts, we generated coding reports of quotes related to aspects of MWAs for the second stage of analysis. The codes specific to MWA included: strengths, weaknesses, promotion efforts, community awareness, community participation, vulnerable populations, and strategies for improvement.

In the second stage, we read the MWA-specific coding reports multiple times to identify emergent subthemes that corresponded with the four domains of the ecological model (individual attributes; family and peer influences; intermediary determinants of health; and structural determinants of health); we added a fifth domain to capture the strategies and solutions that HEWs mentioned about the barriers and enablers to MWA use, which cut across multiple levels of the ecological model. We grouped supporting quotes from all transcripts according to each domain and subtheme, and prepared thematic summaries for the five domains. Through discussion, the research team reached consensus about the key subthemes and conclusions. All members of the research team reviewed and agreed upon the presentation of the findings.

Trustworthiness

To promote credibility, the researchers held regular debriefing sessions with the data collectors to discuss and share strategies to enhance the data collection process. Prior to data collection, the survey tools were pilot tested in similar context to the study and minor modifications were made to maximise the applicability of the tools. The use of open-ended questions in the semi-structured in-depth interviews and focus group discussions was a way to encourage participants to respond in an uninhibited manner, while retaining the central focus on the topic of interest. Transferability was promoted through generating sufficiently thick description of the case context, for example, through
the use of question probes and detailed field notes. Additional qualitative analyses of the study have been conducted, including the preparation of a detailed internal field report. Confirmability was addressed by discussing the findings with experienced researchers working on related topics within the same zonal area, as well as national experts in the topic area. Researchers remained reflexive in identifying and taking measures to limit potential sources of bias, including social desirability bias (Bergen & Labonté, 2018). We addressed dependability through having multiple researchers engaged in the data analysis process, and several members of the research team involved in writing up the analyses.

**Ethical considerations**

We obtained ethical clearance for this research from Jimma University College of Health Sciences Institutional Review Board and University of Ottawa Health Sciences and Science Research Ethics Board. All research participants provided informed consent (verbal or oral) prior to their participation in the study. The research was conducted in accordance with the prevailing ethical principles.

**Results**

Thirty-one HEW transcripts were included in the analysis (five transcripts were missing because the interview was not conducted due to logistical limitations or the data collector did not submit the transcript to the research team). The 31 HEWs included in the study represented 22 of the 24 study sites; the two missing sites were from Gomma and Kersa districts (Appendix 1). On average, the age of HEWs in the study (where available) was 24.7 years (ranging from 20–32 years) and the average number of years served was 5.8 (ranging from 1 to 10 years). Out of the 31 participants, 6 had received a year of additional training, gaining the accreditation of HEW practitioners. All HEW participants were female.

**Individual attributes**

Several HEWs acknowledged that the woman’s family structure – whether they had children already, and the age of these children – was a determinant of MWA use. Women with younger children at home were less likely to use MWAs because it required them to be away from their children and arrange for childcare, stresses that were compounded by women not knowing how long they would be away; in contrast, women who have older children at home have greater ability to go to the MWA, as the older children could attend to the younger children and household chores.

According to HEWs, women who felt confident about giving birth at home, especially those who previously had problem-free home births, were less inclined to use MWAs; women’s male partners echoed this view. One HEW described the non-use of MWAs as ‘carelessness’, relating that:

> Some of them [pregnant women] say why would I go there? I have given birth at my home previously.

HEWs perceived that MWA use was particularly important for women with complicated pregnancies, such as those with anemia, history of caesarean section or the fetus/baby in a ‘bad position’, especially if they lived far from the health centre.

**Family/peer influences**

Several HEWs reported that male partners and mothers-in-law made decisions about whether the woman would attend the MWA. In most of these cases, HEWs identified male partners as barriers to use: men did not want their partners to leave the home, especially if they had other children to care for.
There are husbands who are opposing them going […]. If their husbands do not approve, they will not come for the service.

Women who have poor access to resources, such as money (sometimes required to pay for transportation to the facility and/or to buy food to eat while staying at the MWA) and clothes (to change into after giving birth), were less inclined to use MWAs, according to HEWs. An HEW acknowledged that a woman staying at an MWA could represent a loss in family income during that period due to costs associated with staying at the MWA.

Family and community support networks played a large role in whether women attended the MWA. Women who have family members or neighbours willing to take over her responsibilities at home (e.g. childcare, cooking, and chores) could attend MWAs; in the absence of these supports, it was difficult for women to attend. Additionally, in areas where the MWA was not fully functional, HEWs described that a woman’s family or neighbours would ensure that she is cared for at the MWA, for example, by bringing her food and water, or keeping her company while she is away from home.

When a pregnant mother stays at the maternal waiting area, three times per day (morning, afternoon and evening) her families should have to bring food for her. She can’t get out from the health center or around the kebele to buy by herself, because this is rural. Recently I took three mothers to stay at maternal waiting area and I have seen the problem myself.

Intermediary determinants of health

Health services
The availability of other relevant health services factored into whether women used MWAs. Women who have had previous contact with HEWs and the health system (e.g. by attending antenatal care visits) were more aware of MWAs and their benefits, and thus more likely to use them. One HEW mentioned that women who knew their estimated date of delivery could better time their arrival at the MWA. Another HEW recounted that women may stay at the MWA after having false labour because of the availability of health workers at the nearby facility to monitor her condition.

HEWs’ opinions about the acceptability of the MWA influenced how they promoted them in the community. HEWs were unlikely to recommend using the MWA if they perceived the services or facilities to be inadequate or unacceptable to women. A major issue in many areas was the lack of food and water. Other HEWs mentioned that the environment at the MWA was unhygienic, or that the facilities lacked kitchens, latrines, clean bedding, etc. HEWs thus recommended that women bring their own supplies. HEWs spoke about how a good facility attracts women to stay there, for example, by providing good food and services. An HEW described the attributes of the MWA that drew women to attend:

There is separate home for them, bed made with clean bedding materials, food (injera, different wot types [stews], coffee, tea) cooked and prepared there by the employed server. There is also a water source for them.

Respectful treatment of women by health workers at the MWA and adjacent health facility was a prominent factor. In a few cases, health workers had a reputation for demonstrating exemplary behaviours like bringing food for women at the MWA or being friendly and welcoming. HEWs recognised that mistreatment of women by health workers at the MWA was a deterrent, noting that women from rural or remote areas may be particularly prone to mistreatment.

Community context
Issues surrounding geographical access to health facilities were mentioned by nearly all HEWs. Generally, HEWs felt that MWAs were important for women who live far away and were most likely to benefit from them. A few HEWs, however, spoke about how MWAs may be used in unexpected and unintended ways. For instance, at one MWA that lacked food and water, the women who lived close
to the facility were more likely to use it, as their families could more easily bring them necessary supplies from home. One HEW spoke about how transportation costs for women to travel to and from the MWA could be a barrier for women who lived far away.

HEWs noted that women who stay at MWAs would share their experience – good or bad – with other women in the community, influencing whether others will use the facility. An HEW recounted how one woman spread word about her bad experience at the MWA, and called into question the value of continuing to contribute money for the initiative:

She was not getting service, so the mother left the waiting area and went home. Then when she got back home she informed the others that there was no service at the waiting area, despite her contributions to the ‘one birr for one mother’ campaign – so why do we keep contributing to it?

In areas where MWAs were functional, HEWs worked to create demand for MWAs among pregnant women and in the wider community by raising awareness about the initiative and preparing them for what to expect.

**Structural determinants of health**

**Governance and policies**

When presented with a standardised list of 11 MWA indicators (Table 1), the majority of HEWs considered the MWA in their area to be mostly functional but lacking in one or more indicators; just two HEWs considered the MWA in their area to be fully functional, while four HEWs reported that there was no MWA in their area, or that the MWA was non-functional. Some HEWs mentioned that women might attend an MWA outside of their area if it was better equipped. One HEW explained that the infrastructure at the MWA was insufficient for women to stay, and that women close to their estimated date of delivery may be turned away:

Some women said that the health workers send mothers back to their homes […] at the fourth ANC visit. The health workers say to go to your home and come back when you start labouring. So, most have not enough room in the waiting area for the women to stay at health center. Because of the limitation of waiting area, some of the women deliver on the way to their home for instance. As a result, women are not going to health center for delivery services. In other words, the inadequacy of the waiting area at the health center is discouraging women from receiving delivery services.

Many HEWs expressed that promoting MWA use was part of their job, and something that they were instructed to do during ANC visits. HEWs recognised that related policies and initiatives that encouraged health service use – for example, an HEW cited an initiative encouraging all women to give birth at a health facility – could be more easily satisfied if women used MWAs.

HEWs expressed that community members should contribute money and in-kind donations, like cereals or coffee, noting that, beyond a minimum expected contribution (as specified in the one birr for one mother campaign), the community members could give as much as they want. HEWs noted a link between community involvement and support for MWA use, as communities with higher levels of involvement were more likely use the MWA.

**Cultural and social values**

HEWs acknowledged that community members hold certain beliefs related to health and health services that influenced their decision about whether to use the MWA. For instance, HEWs encountered women who blamed the health facility or the MWA for a bad health outcome. Several HEWs expressed that women feel shame for using health facilities, especially if the MWA (or adjoining health facility) was staffed by a male attendant.

Normative gender roles and established community practices were considerations that affected MWA use. HEWs explained that women may not stay at an MWA because the women felt they should stay home to care for their families. HEWs themselves, all women, sometimes were not
respected by men while working in the community. An HEW recounted being challenged by a pregnant woman’s husband while advising her about MWA use, and how she deescalated the situation:

At some places, their husbands disrespect us, even he wants to prohibit us from entering his home […], because he thinks that we will advise his wife to go to maternal waiting area. For example, this was what happened to me a few years ago in one neighbourhood: a husband at his home even wanted to start a fight with me! Even though he […] told me to get out of his home, I treated him patiently. And I advised him what about what his actions would mean in terms of law (that this would led him to be imprisoned and away from his family). Moreover, I told him the government policy about the right she [his wife] has and the gender equality of today. I calmed him down. I returned back to his house within three days and we agreed to send her to stay there. But […] at that time he wanted to fight me, so this means I needed to show him patience.

One HEW recounted how staying at an MWA may be viewed as an infringement of personal freedom, as women cannot come and go freely from the MWA (as they can from their homes), hindering their ability to be involved in community activities. HEWs recognised that MWA use was not currently part of the community culture. One HEW explained what it would mean for MWAs to be integrated within the local culture:

As a community, bringing mothers and having mothers stay at the maternity waiting area should be taken up as the culture of the community. They should be actively involved in this regard. A husband should be responsible for bringing his wife to the maternity waiting area and encourage her to receive required services.

**Strategies to overcome barriers**

HEWs acknowledged that interacting only with pregnant women had limited success in promoting MWA use, and thus negotiated with husbands and other community members to: convince them to allow women to attend the MWA; encourage them to assume women's chores and responsibilities at home; and instruct them about how to support women staying at MWAs (e.g. bringing food and supplies). Directing their efforts at the women’s support networks would ensure that the woman’s home and family would be cared for, overcome shortfalls in infrastructure and services at the MWA, capitalise on community support, and change community practices and norms. One HEW explained:

If we give advice to the women to stay at MWAs, sometimes the husband may not give permission, as she would need to stay far from their home. In this case, we have to convince him and the mother-in-law to accept that the pregnant women should stay at the MWA.

HEWs provided education about MWAs and worked to create demand, focusing their efforts on women who were most likely to benefit from MWAs: those who live far away from the health facility, those with high-risk pregnancies and those with a stressful situation at home (e.g. engaged in physical labour). For instance, HEWs advised women that using an MWA allows them to get rest from their work, and is better than staying at home and being worried about problems that might arise. One HEW underscored the importance of giving education ‘in detail’ because behaviour change is not an easy process.

When promoting the benefits of MWAs, HEWs also often communicated the possible consequences of non-use. For example, one HEW described how she convinces women to use MWAs by pointing out their advantages, namely, that when staying at an MWA health problems can be addressed quickly, healthy foods and coffee are provided, and delivery services are readily available. Another HEW took the approach of conveying an extreme consequence of MWA non-attendance (death), asking women what their families would do without them:

We encourage them [women] by saying that if you die, you leave all things [your children and home]. What if you [do not attend and] die? But if you save your life, you can nurture your kids. So, we send mother to the health center after convincing her in such way.

HEWs had ideas about how to make MWAs more comfortable and home-like. At one study site, the HEW suggested that the MWA policy should be changed to allow women to bring their young children with them. Other HEWs thought that giving women clothes to wear at the MWA would
encourage them to stay, and that more steps could be taken to create a home-like environment (such as having customary coffee services). Overall, HEWs urged that the necessary infrastructure should be in place to ensure that MWAs are comfortable for women, and that women should be treated nicely when they stay at MWAs.

HEWs advocated on behalf of women to improve aspects of the MWA that women found unacceptable. For instance, one HEW reported negotiating with health centre staff to ensure that women at the MWA would be fed (the normal practice there was to only provide food after the woman had delivered). HEWs called upon governments to have a greater role in supporting people who are poor, and to ensure that health facilities are adequately staffed with knowledgeable midwives and nurses. HEWs saw that communities had a role to play in maintaining the facility (e.g. through monetary and in-kind donations) and encouraging women to use it. Some HEWs had an active role in the collection of money or food from community members for MWAs. One HEW explained:

Regarding the crops and money for the MWA, we ourselves, with the ‘gare’ [community] leader collect it and submit to the health center.

Discussion

This study aimed to identify major barriers and enablers to MWA use encountered by HEWs, and strategies employed to address them, in an Ethiopian context. Many of the major barriers and enablers to MWA use corresponded with previous findings about place of birth decisions (Gebrehiwot, Goicolea, Edin, & San Sebastian, 2012; Jackson, 2014; Jackson, Tesfay, Gebrehiwot, & Godefay, 2017; Teferra, Alemu, & Woldeyohannes, 2012; Warren, 2010). Notably, at the individual level, HEWs reported that some women did not see the importance of using an MWA, while other women were compelled to prioritise remaining at home to care for their families. Within families and communities, male partners and support networks appear to be instrumental in enabling or deterring MWA use. Prominent factors associated with intermediate and structural determinants of health included functionality and acceptability of the MWA and/or adjacent health facility, geographical access and cultural/social norms.

While MWAs, by design, aim to address geographical barriers to facility birth, access frequently emerged as a barrier. While ambulances, if available and functioning, may be a viable transportation option for women during labour (Jackson et al., 2017), this service is not available for women attending MWAs.

When compared with decisions about place of birth, decisions about MWA use entail additional considerations, as women face spending a greater amount of time away from home, and adapting to different living conditions at an MWA. These considerations can exacerbate the consequences of determinants across the four domains. For instance, compared to a woman not staying at an MWA, a woman spending several weeks at an MWA would require a stronger support network to care for her family at home and, depending on the functional status of the MWA, to provide supplies to ensure her comfort there. A woman staying at an MWA may also be in stronger defiance of traditions and gender normative roles, which dictate that she obey her husband and limit her time away from home (Gebrehiwot et al., 2012).

In our study, while many HEWs supported or facilitated MWA improvement activities, they expressed different ideas about the responsibilities of various actors and groups, noting that community participation in MWA construction and upkeep may promote its acceptance and use. Nationally, there appears to be little standardisation in MWA contribution schemes and functionality (Ethiopian Public Health Institute et al., 2017), and consequently, high ambiguity about how MWAs should be constructed and managed, and low accountability for ensuring that the facility is functional.

The findings of this study call into question the extent to which MWAs in Ethiopia are used by the populations to whom they are targeted. MWAs that are poorly-equipped (e.g. lacking food and water) unintentionally deter women whose support networks lived too far to bring supplies; likewise,
women living in very remote areas or women having very difficult pregnancies find it more challenging to physically get to MWAs. Although HEWs report doing their best to reach vulnerable populations, women who have less contact with the health system are in turn less likely to use MWAs. Unfortunately, this is not an uncommon challenge of equity-oriented health programmes (Spangler, Barry, & Sibley, 2014), underscoring the need for implementation research to explore equity outcomes (MacDonald et al., 2016).

Within their sphere of influence in the community and at the health facility, HEWs are advocates for pregnant women, and have ideas about how MWAs – and the experience of using them – could be improved by various stakeholders. While the extent to which HEWs can act as advocates outside of the health system and/or to higher levels of government has limits (Schaaf et al., 2018), Maes (2017) posits that increased political engagement of low-level health workers is a viable endeavour to further their rights and to promote a more ecological and humanistic approach among higher-level actors.

The strategies adopted by HEWs offer insight into how their position in the community can be harnessed and strengthened to promote the use of MNCH services. Although HEWs routinely engage with community members and have contributed to the expanded use of certain services (e.g. family planning, antenatal care and HIV testing), they have been less successful in increasing the rate of facility deliveries and skilled birth attendance (Medhanyie et al., 2017). Indeed, inciting behavioural changes related to childbirth practices poses unique challenges that resonate across multiple levels of influence, from individual attributes to structural determinants (Jackson, 2014; Jackson et al. 2017).

Some HEWs undertake special efforts to include male partners in their education and outreach activities. HEWs recognise that male participation could have cross-cutting benefits: as primary decision-makers in many families, male partners who understand the importance of MNCH services use could encourage attendance, ensure access to adequate resources, and establish positive support networks. HEWs in our study developed their own strategies for engaging with male partners, which sometimes turned into heated exchanges. HEWs may benefit from opportunities to collectively discuss and develop these strategies. For example, the application of popular education approaches with low level health workers in Ethiopia can facilitate greater awareness of the power-based societal structures within which they work (Maes, 2017). In Tanzania, community health workers received training for involving males in maternal health education, which improved shared decision-making for place of birth decisions (August, Pembe, Mpembeni, Axemo, & Darj, 2016). The implications of male involvement in MNCH activities on gender equity in low- and middle-income countries is not well established, and warrants further research (Comrie-Thomson et al., 2015).

Due to the complex interactions of the determinants identified in this study, our findings suggest a need for multilevel and coordinated approaches to the promotion of MNCH, encompassing health and non-health sectors. Between 1990 and 2010, an estimated 50% of gains in maternal and child mortality in low- and middle-income countries were attributed to improvements outside of the health sector in areas such as economic growth, good governance, environment, education, fertility and women’s empowerment (Bishai et al., 2016). The rising recognition of the importance of determinants of health has drawn attention to policy processes and the need for more constructive dialogue between policy makers and implementers (Carey & Crammond, 2015). Research that links community-level implementers with broader policy environments can lead to greater understanding and theorising around the actions needed to pursue social determinants of health (Exworthy, 2008; Nambiar, Muralidharan, Garg, Daruwalla, & Ganesan, 2015).

As the government of Ethiopia continues to move forward on ambitious commitments (e.g. the United Nations 2030 Agenda for Sustainable Development, the country’s own national Health Sector Transformation Plan, and the national Growth and Transformation Plan), it will be important to consider how the design and implementation of MNCH initiatives account for equity. At the community level, with strong connections to families, communities and low levels of the health system, HEWs have a unique vantage point to assess barriers and enablers to service use. By the nature of
their work, HEWs can offer a nuanced understanding of how determinants of health are experienced at the ground level. With training, resources and opportunities to liaise with higher-level decision makers, HEWs are positioned to play an important role in advancing equity-oriented MNCH initiatives.

**Strengths and limitations**

This research addresses an urgent need for more evidence about the implementation of MWAs, an equity-oriented MNCH intervention. Our findings were derived from interviews with 31 HEWs across sites in Jimma Zone, Ethiopia, which allowed us to capture data about a range of MWA facilities, communities and families. While we acknowledge that the findings may not necessarily be generalisable across Ethiopia (given the high degree of diversity with regards to MNCH practices, lifestyles, culture, etc.), we believe that our results have general implications for the design, implementation and scale up of MWAs in low- and middle-income country settings. Further, the application of an ecological model allowed for the conceptualisation of barriers and enables across the four domains, providing insights into possible entry points and synergies for advancing action on determinants of health.

Previous research with health workers in Ethiopia caution about a social desirability bias, whereby participants are hesitant to raise negative and/or politically sensitive issues (Bergen & Labonté, 2018; Jackson et al., 2017; Østebø, Cogburn, & Mandani, 2018). We encouraged HEWs to speak freely (by assuring them that their confidentiality and anonymity were protected; conducting interviews in private areas; and using interview techniques such as probing and repeated questioning to obtain more detail), but we cannot eliminate the possibility that such desirability biases existed in our study. Interview data were translated from the local language into English, and it is possible that the cultural meaning of certain words, phrases or concepts were not fully retained through this process. We attempted to minimise language interpretation issues by working closely with bilingual data collectors before, during and after the study, and being present with them at data collection sites. Forthcoming research from the Safe Motherhood Project will evaluate the effectiveness of MWAs on MNCH.

**Conclusions**

For women in rural and remote areas, the decision of whether to stay at an MWA is complex and multifaceted. The advancement of the MWA initiative would benefit from action across determinants of health, such as: improving the adequacy of the MWA facility; promoting acceptance by the community; promoting community contribution schemes; improving geographical access; encouraging shared decision-making between women and their partners; providing education about healthy MNCH practices; and encouraging support networks. HEWs are the primary contact point with the health system in rural and remote communities of Jimma Zone, and they routinely assist women and their families in navigating barriers to health service use. The findings of this study suggest that HEWs are well positioned to advance equity-oriented health interventions by promoting their use among target populations. With additional training, resources and opportunities to engage with policy processes, the roles that HEWs play in expanding health care use in at-risk populations can be strengthened.

**Acknowledgements**

We gratefully acknowledge Jimma Zonal Health Department (especially Gebeyehu Bulcha Duguma and Kunuz Haji Bedru), Safe Motherhood Project coordinators (Yisalemush Asefa, Gemechu Beyene and Corinne Packer), Safe Motherhood Project researchers and research assistants (Muluemebet Abera, Alzahra Hudani and Jaameeta Kurji) and data collectors from Jimma University, for their contributions to the research.
Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This work was carried out with grants #108028-001 (Jimma University) and #108028-002 (University of Ottawa) from the Innovating for Maternal and Child Health in Africa initiative (co-funded by Global Affairs Canada (GAC), the Canadian Institutes of Health Research (CIHR) and Canada’s International Development Research Centre (IDRC)); it does not necessarily reflect the opinions of these organisations.

ORCID

Nicole Bergen http://orcid.org/0000-0002-8161-2599

References


Bergen, N., & Labonté, R. (2018). “Everything is perfect, and we have no problems”: Detecting and limiting social desirability bias in qualitative research (Manuscript submitted for publication).


## Appendix 1. Sampling frame for interviews with HEWs across three districts of Jimma Zone, Ethiopia

<table>
<thead>
<tr>
<th>District</th>
<th>Study site</th>
<th>No. HEWs (sampling frame)</th>
<th>No. HEWs (included)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gomma</td>
<td>Limu Shyi</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Beshasha</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Gembe</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Choche</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Yachi</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Kedemasa</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Chami Chago</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Omo Beko</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Dhayi Kechene</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Kersa</td>
<td>Serbo HC</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>A/Dika HC</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Kellacha HC</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Bulbul HC</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>K/Beru H/C</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>B/Wajo H/C</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>K/Gora HC</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Seka Chekoresa</td>
<td>Seka</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Wokito</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Buyo Kechema</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Bake Gudo</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Detu Kersu</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Lilu Omoti</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Getta Bake</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Setemma</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

## Appendix 2. Semi-structured, in-depth interview guide for Health Extension Workers

### Question set 1. Maternal and child health services

1. What is your role in managing and/or delivering maternal and child health services?
2. Given the maternal and child health services and activities that you perform, where do you feel you are doing well? Where do you feel you could improve?
3. How do you break down your time for maternal and child health services and other health extension program activities? How much of your work week is for maternal and child health programs?
4. What types of resources do you receive to provide these services?
5. Are there any families for whom these services are especially important? Please explain.
6. When do you refer pregnant women to upper levels of the health system for health care visits, delivery services and post-delivery care? Please explain how this process happens, and where they go.

### Question set 2. Community participation in maternal and child health activities and services

1. How do community members become aware of maternal and child health services?
2. Are community members encouraged to participate in activities related maternal and child health services, in ways like planning, promoting, financing or providing feedback? If so, please explain how this occurs.
3. What do you think motivates the women in this health district to participate in MCH activities or services?
4. Why do you think might women decide to not participate? Do you address these factors? If so, how?
5. Do you encourage participation in any way? If so, how?
6. How important is it that they participate? How do you think this participation affects maternal and child health outcomes? What examples of this participation have you experienced?

### Question set 3. Maternal and child health services across different stages of childbearing

1. Antenatal care (ANC)
   a) What types of ANC services do you currently provide as a HEW?
   b) What challenges do you face in providing these services?
   c) We know that some women attend ANC visits, while others do not. Some may drop out and not complete the four recommended visits. What do you think are the reasons why women may not attend ANC visits?
d) What do you do to encourage attendance and minimize drop outs?

e) How have you worked together to provide ANC to women?

f) Have there been any challenges in working with the PHCU?

2 Childbirth

a) How do women prepare for birth?

b) What are the factors for a woman to give birth at a health facility?

c) What are factors why a woman may not give birth at a health facility?

d) What do you do to encourage women to give birth at a health facility?

e) Are there financial barriers to women giving birth at a facility? What are these? What are the ways to overcome these barriers, if any?

f) Have you been involved with helping women give birth? If so, could you tell me about this experience?

3 Postnatal care (PNC)

a) What types of PNC services do you currently provide as a HEW?

b) What challenges do you face in providing these services?

c) What do you think are the reasons why mothers and babies may not use PNC?

d) What are reasons why mothers and babies may use PNC?

e) What do you do to encourage mothers and babies to make PNC visits?

Question set 4. Health problems

1 What types of serious health problems do you encounter during pregnancy?

2 What types of serious health problems do you encounter during childbirth?

3 What types of serious health problems do you encounter during the two days following childbirth?

4 What types of serious health problems do you see during the month after a woman gives birth?

Question set 5. Maternal waiting areas

1 What do you see as reasons for women to use MWAs?

2 What are the reasons for women to not use MWAs?

3 What do you do to encourage more women to use MWAs?

4 What qualities of MWAs do you think are the most important in encouraging women to use them?

5 How can qualities of MWAs be sustained or improved?

Question set 6. Working with other groups

1 How do you involve men during household visits or health education activities?

2 How do you work together with health development army, opinion leaders and model households?

3 How often do health center officers or district health officers visit your community pertaining to maternal and child health services? How do you work together?

Question set 7. HEWs in the community

1 As a HEW, which family members do you try to involve in education activities around maternal and child health? How do you go about doing this?

2 In what ways has your transition to being a trained HEW affected your status in the community?

3 What challenges, if any, have you encountered as a woman doing paid work in the community? What benefits, if any, have you realized?