

**ORIGINAL ARTICLE****The Role of Health Extension Workers in Linking Pregnant Women With Health Facilities for Delivery in Rural and Pastoralist Areas of Ethiopia****Ruth Jackson<sup>1</sup>, Assefa Hailemariam<sup>2</sup>****ABSTRACT**

**BACKGROUND:** *Women's preference to give birth at home is deeply embedded in Ethiopian culture. Many women only go to health facilities if they have complications during birth. Health Extension Workers (HEWs) have been deployed to improve the utilization of maternal health services by bridging the gap between communities and health facilities. This study examined the barriers and facilitators for HEWs as they refer women to mid-level health facilities for birth.*

**METHODS:** *A qualitative study was conducted in three regions: Afar Region, Southern Nations Nationalities and People's Region and Tigray Region between March to December 2014. Interviews and focus group discussions were conducted with 45 HEWs, 14 women extension workers (employed by Afar Pastoralist Development Association, Afar Region) and 11 other health workers from health centers, hospitals or health offices. Data analysis was done based on collating the data and identifying key themes.*

**RESULTS:** *Barriers to health facilities included distance, lack of transportation, sociocultural factors and disrespectful care. Facilitators for facility-based deliveries included liaising with Health Development Army (HDA) leaders to refer women before their expected due date or if labour starts at home; the introduction of ambulance services; and, provision of health services that are culturally more acceptable for women.*

**CONCLUSION:** *HEWs can effectively refer more women to give birth in health facilities when the HDA is well established, when health staff provide respectful care, and when ambulance is available at any time.*

**KEYWORDS:** *Health extension workers, skilled birth attendance, maternal health service utilization, rural and pastoralist Ethiopia*

DOI: <http://dx.doi.org/10.4314/ejhs.v26i5.9>

**INTRODUCTION**

Women's preference to give birth at home is deeply embedded in Ethiopian culture. Many women in Ethiopia only go to health facilities if there are complications during birth (1-4). The Maternal Mortality Ratio (MMR) is estimated to be 353 maternal deaths per 100,000 live births, with a lifetime risk of maternal death of one in 64 (5). According to the *Mini Ethiopian Demographic and Health Survey*, 85% of women give birth at home; most women are assisted by

family members and Traditional Birth Attendants (TBAs) (6). The Federal Ministry of Health's (FMOH's) target is to reduce the MMR to 199 deaths per 100,000 live births by 2020, and to increase Skilled Birth Attendance (SBA) to 90% (7).

In 2003, the FMOH introduced the Health Extension Program (HEP) as a strategy to promote health and prevent disease, with selected high impact curative interventions at the community (kebele) level. Since then, almost 40,000

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government-salaried Health Extension Workers (HEWs) have been trained and deployed to improve the utilization of health services and bridge the gap between communities and health facilities.

Recently, HEWs role changed from one of providing safe and clean delivery at home or in health posts, to one of assisting birthing women to move from home or health posts to health centers staffed with skilled birth attendants capable of managing complications (8,9). Other developments include the introduction of the Health Development Army (HDA) (or Women's Development Groups in Tigray Region). Groups of 25-30 women are organized into sub-groups with a leader and five members in a group (7,8). The HDA conducts regular discussions about health needs among the members, follows up and supports pregnant women to ensure the continuum of care from pregnancy to postnatal stage, and supports the referral system by organizing 'traditional ambulances' (stretchers) to main roads or health posts.

The introduction of the ambulance service has made the HEWs crucial role of referring women for delivery more viable. In recent years, the FMOH has delivered 1,247 ambulances across the country. Ambulances provide much needed transportation linking health posts with health centers, and health centers with primary hospitals. In the nine months to October 2014, 317,988 persons utilized ambulance services: nearly 70% (220,547) were mothers (10).

Despite the expansion of health infrastructure and the introduction of the HEP, there are still many barriers preventing women from accessing SBA. These include lack of transportation, distance to referral facilities, poor road infrastructure, lack of community awareness, and in some instances, fee for service and/or drugs at the referral facilities (11-18). Therefore, the objective of this study was to explore what pregnant women and HEWs view as barriers to and facilitators for SBA, and for referral to mid-level health facilities for birth.

## METHODS

This qualitative study was conducted in Afar Region, Southern Nations, Nationalities and

Peoples' Region (SNNPR) and Tigray Region. These research settings were selected by building on previous research about maternal health services in rural and pastoralist Ethiopia by the first author (2,12,19,20). We adapted the research methods used by the Nepal Safer Motherhood Project (21) and the Participatory Ethnographic Evaluation and Research approach (22-24).

Although studies indicate that the international focus on maternal health and the target of a three-quarters reduction in the 1990 MMR has resulted in improvements in accessibility to high-quality reproductive and maternal and newborn health care worldwide (5), there is still unfinished business of addressing pervasive inequities, to ensure that all women and children receive the services they need, regardless of wealth, gender, ethnic group, or geography (25). To address inequality in maternal health care, Ethiopia adopted community-based strategies through the HEP and is also expanding Emergency Obstetric and Newborn Care (EmONC) services to mid-level providers. Some studies show that the HEP has been well received, and that the use of family planning and ANC by women has increased, but the impact on other maternal health indicators such as skilled assistance at birth has been limited (4,15,17,18,26-31).

HEWs were selected as key informants for two reasons: they are the health workers closest to where most rural women live, and they play a crucial role in referring pregnant and labouring women from rural kebeles to woreda health centers (32,33). The woredas and kebeles in Afar Region were selected in consultation with Afar Pastoralist Development Association and the Afar Regional Health Bureau; in Kafa Zone with the Kafa Zone Health Office; and in Tigray Region, with the Tigray Regional Health Bureau. One HEW in each kebele was invited to participate in the research, generally the HEW with the most experience.

In each setting 14-16 HEWs attended a two- or three-day workshop where they were trained how to interview women from their kebeles. The aim of the interviews was not to focus on the number of barriers to health facilities, for instance, but in understanding 'the different ways in which people talk about and describe the social world

they experience around them' (21). We wanted to understand the women's experiences; we were interested in their stories rather than finding a representative sample.

University lecturers or researchers from each region were hired as interpreters during the workshops and in interviews and focus groups as required. Members of the research team interviewed the HEWs about the maternal health services they delivered. In this article, we present some of this interview data here. Interview data from the women was presented in reports to the FMOH, Regional Health Bureaus and Kafa Zone Health Office. In total, 45 HEWs interviewed 126 women (we were unable to follow up with three HEWs in Afar Region because of logistical reasons). We interviewed staff from regional, zonal, and woreda health offices and staff from two hospitals in Afar Region: Dubti Hospital (one

nurse and one midwife) and Barbara May Maternity Hospital in Mille (three nurses or midwives and one woman extension worker). Women extension workers are literate Afar women trained by Afar Pastoralist Development Association to mobilize their communities in sanitation, nutrition, mother/child care, safe motherhood, HIV prevention and stopping harmful practices.

Table 1 shows where the HEWs who participated in the research were based, how many years' experience they have had, how many women they interviewed and the number of women referred to a health facility for birth in the six months prior to the research. It also shows the percentage of women who gave birth in health institutions in each research setting and a comment about where most women give birth (at the time of the research).

Table 1: Characteristics of the HEWs and percentage of women giving birth in health institutions

	<b>Afar Region (Mar/Apr 2014)</b>	<b>Kafa Zone (May/June 2014)</b>	<b>Adwa Woreda (Nov/Dec 2014)</b>
Woreda(s)	Adaar, Dubti, Chiffra, Ewa, Kori	Bitta, Chena, Decha	Adwa
No of years' experience (HEWs)			
1-2 years	0	1	9
3-4 years	7	0	3
5 or more years	7	13	4
No of women interviewed	33	42	48
Reported number of women referred by HEWs to a health center (in the six months prior to the research)	5	79	All women (although not all women went to health centers)
Percentage of women giving birth in health institutions (at the time of the research)	5% (34). Most women give birth attended by a TBA.	15.5% (35). Most women give birth at home supported by family members, their neighbour or TBAs.	29% in health centers; 4% in a health post; 21% of women referred from health post to health center or health center to hospital (36).

Data analysis was based on the research questions and the themes that were agreed during a second workshop with HEWs following the interview period. First, HEWs presented and discussed their findings and identified key issues. Second, the research team collated the data and identified key themes emerging from the interviews and the lessons learned.

Ethical approval was obtained from Deakin University (2013-055) and the Federal Democratic Republic of Ethiopia Ministry of Science and

Technology National Research Ethics Review Committee (Phase 27, No 189). Free and informed consent was obtained for each interview with HEWs and other health workers and also by each HEW when they interviewed women in their kebeles. All the information was kept confidential, and each respondent was given a coded identifier (e.g. Afar HEWs were numbered AHEW1 or AHEW2, Kafa HEWs, KHEW1, KHEW2, and Adwa HEWs were THEW1 and so on).

## RESULTS

### **Distance and HEWs role in referral in Afar Region:**

In Afar Region, where most people have a nomadic or semi-nomadic/pastoralist way of life far from main roads, water supplies, telephone networks and health facilities were typically 120 kms away with a 40 km walk to the main road. For example, one woman extension worker employed by Afar Pastoralist Development Association described how she walked 10 kms to climb a hill to reach telephone service to call an ambulance—some women took three to four days to reach a hospital.

HEWs reported they were almost never called during labour or birth as most women give birth at home assisted by TBAs. Although some HEWs had called the ambulance service to transfer women, staff at both Dubti and Mille Hospitals reported that pregnant women would only come for a Tetanus Toxoid vaccination, sickness or problems during birth. HEWs and other health staff reported that women were too frightened to seek skilled labour attendance unless it was an emergency.

### **Distance and HEWs role in referral in Kafa Zone:**

In Kafa Zone, where most people are engaged in agriculture and many rural roads are impassable in the rainy season, most women still give birth at home assisted by family members or TBAs. HEWs reported many recent changes in their role in supporting women during pregnancy and childbirth. Three months before the research, a 70/30 policy was announced: 70% of births should be in the health centers and 30% in the health posts with no woman giving birth at home. At the same time, with the introduction of the HDA, HEWs are now expected to know the number of pregnant women in the kebele and to refer them to health centers for ANC after the first visit at the health post. However, one HEW reported:

*There is a problem with the ANC schedule which is on Tuesdays and Wednesdays. Mothers can't get transportation on these days as there is only a bus on Thursday and Sundays which are the market days. If women go on a different day, they have to wait. There is no waiting room. Those who have no relatives in town cannot stay for four or five days so it's a burden for them to go to ANC two or three times (KHEW14).*

Although many more women are attending ANC, some are still reluctant to go to the health center for birth (KHEW9). However, KHEW11 reported a significant change in how some men are now encouraging their wives:

*One man had two wives attending ANC at the same time. He reported to the health center and said "I will not be responsible" because both wives did not want to go to the health center for delivery. I visited them, and told them to come, and both women gave birth at the health center.*

In Kafa Zone, HEWs reported differences between ambulance service performances in different woredas. In one woreda, three HEWs reported that they were able to refer women to the health center at any time, even at night. However, HEWs from two woredas reported that they had been told not to call the ambulance at all and that women should use other transportation (Isuzu truck or contract minibus taxi) as the ambulance only took women from the health center to the hospital:

*Sometimes the driver won't come, or when he comes, he challenges us by asking if the delivery is beyond our capacity. Sometimes he refuses to take the woman. The health center staff don't want 10 referrals a day—they think they are doing more than HEWs so they tell us not to refer anyone... Sometimes when we refer a woman on the first day of labour, they send the woman back home. Then the woman feels there is no problem and may develop complications at home... We observe other sectors using the ambulance... they use it for officials to go to meetings. People in the distant kebeles, those three or four days walk away, say that the woreda officials are pregnant (KHEW3).*

### **Distance and HEWs role in referral in Adwa Woreda:**

In Adwa Woreda, where the topography is dominated by highland plains and vast escarpments with most people being small-scale farmers, HEWs have been instructed to refer women to health centers two weeks before their expected due date. A chart in each health post lists each pregnant woman's name, last menstrual period, expected due date, name of the woman's husband, women's development group leader, sub-kebele, name of religious father, name of kebele cabinet member responsible for the pregnant mother and name of the individual responsible for calling the HEW if labour starts at home. HEWs are supported by women's development groups who assist them by identifying pregnant women, advocating the benefits of SBA to women and men and notifying HEWs when a woman's labour starts. HEWs use story-telling about past experiences to encourage women to go to the health center. Some HEWs tell women that they can wear perfume and burn incense (*etan*) during labour, that health centers have put a picture of *Mariam*

(Saint Mary, the protector of labour and childbirth) on the labour room wall, and that porridge (*genfo*) and coffee ceremony are provided after delivery.

Some women were referred if their labour started at home. However, as one HEW reported, sometimes it is impossible to reach women in time:

*One woman started her labour at home and called me. I called the ambulance and we waited on the road, but the ambulance had gone somewhere else. The woman delivered on the roadside. The family were angry with me for this—they said I was doing a favour to some families and not to others. The woman said, “If she can’t call it on time—why didn’t I have my labour at my home—it is not acceptable to have a baby on the roadside” (THEW13).*

Women’s fear of Caesarean Section was a common theme in all regions. For instance, during the workshop a HEW related a story about a woman who was diagnosed with hypertension who was admitted to the hospital but escaped and hid at home: *She was fearful and thought the doctors would do an operation forcefully. She started labour at home and had antepartum haemorrhage. Luckily, she was taken to Adwa Hospital where she had a normal delivery (THEW final workshop discussion).*

#### **Disrespectful care at the health center/hospital:**

Women in Afar Region expressed their preference to give birth at home with a TBA because TBAs are women they know, attend many births, stay with the woman from the start of labour to delivery, and ensure women’s ‘secrets’ regarding Female Genital Cutting are kept. There were many instances of women and health workers raising the issue of privacy and shame which leads women to refuse to be examined, especially by male health workers. Women feared going to a health facility: they fear they may catch a disease while travelling; they fear how they will be treated when they arrive at a health facility; and the need to have a Caesarean Section. The presence of male staff was a strong disincentive to husbands who do not want their wives to be seen by another male.

In Kafa Zone, HEWs explained that women told them they were like family members and that they preferred to go to health posts rather than health centers or the hospital where the staff treat poor rural women with little respect:

*At the health post, they can tell us their secrets like a sister—they can’t talk about these things to people they don’t know (KHEW3).*

*We are like family. I didn’t feel that the community really likes HEWs but I learnt that they prefer us to*

*the others at the health center. We go home to home and we know how people live...Women feel comfortable with us...once I explained to a woman that she should go to the health center because it is a good facility. She replied that she preferred the friendly approach and not the facility (KHEW11).*

One HEW reported that staff at health centers treat rural women differently:

*They make a distinction between the civilized and the uncivilized, the rural and the city, and they don’t listen to hear what the problems are. Staff don’t want to listen, they just want to prescribe, so women are not happy and there are a lot of complaints against the health centers (KHEW9)*

By contrast, during visits to the health posts and the final workshop, HEWs in Adwa Woreda described why women want to go to health centers for delivery but not to the hospital:

*Women feel there is more respectful care at the health center. This problem was solved by the woreda head, not to mistreat women from rural areas at the hospital (THEW8).*

*Before there were a lot of problems because of mistreatment of rural women. We meet the medical director of the hospital every three months to discuss this (Adwa Health Office interview).*

## **DISCUSSION**

As one of the least urbanized countries in the world, Ethiopia’s Road Sector Development Program aims to enhance interconnectivity and to bring the rural population to within two km of an all-weather road. The average distance to an all-weather road is 8.7 km and more than 62% of the rural population does not have access to all weather roads (37). Other studies showed the influence of distance and need on an efficient referral system to increase SBA (2,13,38-41). Although other studies found that HEWs increased women’s attendance at ANC during pregnancy and that there was no association between HEWs and increased rates of SBA (15-17,42,43), recent policy changes emphasize that HEWs should now refer all women to health centers for birth. We found that introduction of ambulances provided much needed transportation to reduce the second delay, but the ambulance service functioned better in some woredas than in others. National guidelines on the use of ambulances have been prepared, but there are clearly new challenges to ensure that ambulances are used as intended – to transfer women before their

expected due date or for those women experiencing obstetric emergencies.

Our findings are consistent with previous studies from Ethiopia which showed that the place where women give birth is influenced by socio-demographic and cultural factors (2-4,15). With the exception of Afar Region, where women are still more likely to give birth with TBAs, our findings confirm that where women reported that HEWs are like family members – many HEWs reported that women trust them and can share their secrets with them (44). Several other studies also identified that disrespect and abuse are determinants for women when they are deciding on the place for delivery (45-47).

Studies in Bangladesh, India, Malawi and Nepal showed that involving women's groups is a cost-effective way to improve maternal and newborn health in developing countries (48-51). We found that factors influencing women's decision to go to health centers for delivery are the HDA or Women's Development Groups who work with HEWs to ensure that women attend ANC and report their expected due date. Additionally, the provision of ambulances ensures that more women are referred to the closest health center before their expected due date or if labour starts at home.

In conclusion, while the HEP has been described as the cornerstone to achieve universal primary health coverage at the community level, the critical role of HEWs continues to evolve alongside policy changes. Some women suggested that HEWs should also be assigned to health centers and hospitals to support women during labour and delivery. The results of this study suggest that improving the quality of care at health centers and hospitals should be a priority. Health facilities should consider annual meetings with HEWs and HDA leaders to review ways to make health services more culturally acceptable for women. For example, what may appear 'trivial' factors in Adwa Woreda appear to be making health services more acceptable for women. More support should be considered for HEWs if they are expected to refer more women to health facilities before their expected due date. Finally, well-designed referral policies and communication with a referral center (29) will result in fewer delays and the need to call an ambulance to refer a woman for EmONC. More research is needed to determine how effectively and efficiently ambulances are being used in rural Ethiopia.

## ACKNOWLEDGEMENTS

This research was funded by the Department of Foreign Affairs and Trade through the Australian Development Research Awards Scheme under an award titled: *Improving the Use of Maternal, Neonatal and Child Health Services in Rural and Pastoralist Ethiopia*. The views expressed in the publication are those of the author(s) and not necessarily those of the Commonwealth of Australia. The Commonwealth of Australia accepts no responsibility for any loss, damage or injury resulting from reliance on any of the information or views contained in this publication.

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