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## Perceived Physical Barriers to Maternal Health Seeking Behavior among Rural Women: The Case of Raya-Alamata District, Southern Tigray, Ethiopia

Hayelom Abadi Mesele\*

**Affiliation:** Department of sociology, Wollo University, Dessie, Ethiopia

\***Corresponding author:** Hayelom Abadi Mesele, Department of sociology, College of Social Sciences and Humanities, Dessie, Ethiopia, E-mail: [abadihayelom129@gmail.com](mailto:abadihayelom129@gmail.com)

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### Abstract

**Introduction:** Maternal health is a state of complete physical, mental and social well-being of the mother; it is a resource for everyday life of the mother. It encompasses the health care dimensions of family planning, preconception, prenatal, and postnatal care in order to reduce maternal morbidity and mortality. The use of antenatal, delivery and postnatal care services can be accessed through the number and timing of ANC visits, proportion of births delivered in health centers, attendants during delivery and antenatal care and number of postnatal visits. Health care services during pregnancy and after delivery are important for the survival and wellbeing of both the mother and the infant.

**Objective:** The overall objective of this study is to investigate the perceived physical barriers to maternal health seeking behavior of rural women in Raya Alamata district.

**Methods:** The researcher employed mixed research methods (both qualitative and quantitative). The study populations were reproductive women in the age category of 15-49. In doing so, a sample of 359 reproductive women was selected from three Tabias by using simple random sampling techniques. The qualitative data analyzed using thematic analysis whereas the quantitative data analyzed using descriptive statistics.

**Result:** Based on the finding this study, the majority of the respondents 31% were found between the age category of 25- 34 years, 87.5% were married, 93.6% belongs to Tigrayan ethnic groups, 71.6% are followers of orthodox Christian, 60.7% were illiterate; and the majority 44.7% of the respondents earned an average monthly income of 501-1000 birr. Rural women also travelled 3.87 km, 5 km, 10 km and 6.4 km in average to get maternal health services from health posts, health centers, hospitals and private clinics respectively. Moreover, long distance and lack of transportation, inequitable distribution of health facilities, inconvenient topography and weather related problems were the major barriers for rural women to get maternal health services. These perceived physical barriers have affected the treatment seeking behavior of rural women especially throughout pregnancy, delivery and postnatal stages.

**Conclusion:** The findings of this study give much emphasis into the perceived physical barriers to maternal health seeking behavior among rural women. The physical barriers restrained rural women from getting antenatal, delivery and postnatal care services which led to pregnancy complications, home delivery, and post-delivery problems which resulted in maternal morbidity and mortality.

**Keywords:** Delivery Care, Ethiopia, Maternal Health, Physical Barriers, Postnatal Care, Rural Women.

### Introduction

Maternal health is a state of complete physical, mental and social well-being of the mother; it is a resource for everyday life of the mother [1]. Maternal health comprises the health of women during pregnancy, childbirth, and the postpartum period [2]. It encompasses the health care dimensions of family planning, preconception, prenatal, and postnatal care in order to reduce maternal morbidity and mortality [3]. The use of antenatal, delivery and postnatal care services can be accessed through the number and timing of ANC visits, proportion of births delivered in health centers, attendants during delivery and antenatal care and number of postnatal visits [4]. Health care services during pregnancy and after delivery are important for the survival and wellbeing of both the mother and the infant. Skilled care during pregnancy, childbirth, and the postpartum period are important interventions in reducing maternal and neonatal morbidity and mortality [5].

Maternal health is important to communities, families and the nation due to its profound effects on the health of women, immediate survival of the newborn and long term well-being of children, particularly girls and the well-being of families [6]. As an investment in maternal health is an investment in health systems. These investments help to improve the health of pregnant women, as well as the health of the general population. Healthy mothers lead to healthy families and societies, strong health systems, and healthy economies. As one step towards achieving these results, there are proven cost-effective interventions that can dramatically improve maternal care in Sub-Saharan Africa health systems. Investing in maternal health is urgent: not only because giving life should not result in death, but also because women are important economic drivers and their health is critical to long-term, sustainable economic development in Africa. Furthermore, investing in maternal health is a way to improve health systems overall, which benefits the entire population of a country [7]. Furthermore, strong

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maternal health investments are a key to ending poverty and improving the status of women [8].

If this is the case, it is important to give women-friendly health services. The maternal health services must be available, geographically accessible, affordable, and culturally acceptable in order to reduce maternal morbidity and mortality. Services should include Essential Obstetric Care (EOC) at the primary and referral levels in order to minimize delays in deciding to seek care, reach a treatment facility, and receive adequate treatment at the facility. Besides, all women should have access to a skilled attendant during pregnancy, childbirth, and the postpartum period. This attendant should be able to provide basic EOC and refer women to comprehensive EOC, in case of complications. No woman should be denied access to life-saving essential obstetric care when complications occur during pregnancy or childbirth [9].

Access to health services has to be guaranteed for all people throughout the world; however, it is not yet fully achieved in many developing countries, particularly in rural areas [10,11]. In Ethiopia, the utilization of health services is low due to limited availability of maternal health services, poor service quality and unaffordable costs to the client [8]. Moreover, there are also other common barriers that contribute to the low utilization of maternal health services includes lack of compliance of services with defined standards, the shortage of supplies, infrastructure problems, deficiency in detection and management of complications or emergency cases, and poor client-provider interaction. Furthermore, services are also underutilized when they are perceived to be disrespectful of women's rights and needs, or are not adapted to the cultural contexts [9].

The other problem is related to power consists of restrictions on women's access to resources such as land, credit, and education limit their engagement in productive work, constrain their ability to seek health care, and deny them the power to make decisions that affect their lives. Even when women do seek health care, they face high opportunity costs. They must give up time that they would normally spend on household chores such as caring for children, collecting water and fuel, cooking, cleaning, doing agricultural work, and engaging in trade or other employment. These restrictions and other human rights abuses are pervasive, and they relate, in part, to gender inequities and can impede progress in improving maternal health outcomes among the poor [12].

In addition to this, poor geographic access has been identified as one of the major barriers facing rural women in seeking and using life-saving maternity care services in many developing countries including Ethiopia [13,14]. Geographic access, the distance (or time) needed in order to reach a health facility, is not only a direct physical barrier that precludes women from reaching health institutions but it also affects even the decision to look for care. It could have more influence in rural areas of Ethiopia, where it is norm to see women in labor being carried on men's shoulder traveling many km to reach a health facility [15]. Women in rural areas often walk more than an hour to the nearest health facility. Poor road infrastructure and lack of reliable public transport or access to emergency transportation make access difficult, especially when obstetric complications occur [16].

Therefore, the most important objective of this study is to identify the major perceived physical barriers to maternal health seeking behavior among rural women of Raya Alamata district. It is also hoped that the results of the study is essential to policy makers to identify the major physical barriers like distance, transport related problems, inequitable distribution of health services, weather and topography. Last not least, it also served as a foundation for any possible intervention aimed at reducing the physical barriers that affect the maternal health seeking behavior of rural women of the study area.

## Research Methodology

### Description of the Study Area

Raya Alamata is located at 600 km north of the capital city Addis Ababa and about 180 km south of the capital city of Tigray Regional State, Mekelle. It is the south most administrative district of Tigray Region State bordered in the south with the Amhara Regional State in the east with Afar regional State in the North East with Raya Azebo woreda and in the North with Oflla woreda. Alamata woreda has 15 tabias (peasant associations) and 2 town dwellers associations. The number of agricultural households of the woreda is approximately 17,597. The total population of the woreda was 128,872 in 2003/04 [17]. Regarding the health infrastructure, the district had one hospital, six health centers and 13 health posts [18].

### Research Methods

The study is intended to explore the perceived physical barriers that affect maternal health seeking behavior among rural women in Raya Alamata district, southern Tigray. In doing so, a cross-sectional study design is employed. Furthermore, the objective of the study requires the integration of both quantitative and qualitative data to best answer questions that cannot be answered by either of the two approaches alone. Therefore, the study employs both data and methodological triangulation.

### Study Population and Sampling Method

The target populations of the study are all women in the reproductive age group (15-49 years) in Raya Alamata District. Particularly, the study focuses on 5467 households of the study area. Out of this, the researchers selected 359 samples of women from Raya Alamata district based on simple random sampling technique. The samples were selected by Kothari [19] sample size determination formula. On the other hand, the informants for FGD, key informant interview and in depth interview were selected by using purposive sampling.

### Focus Group Discussion (FGD)

Focus groups are a form of strategy in qualitative research in which attitudes, opinions or perceptions towards an issue, product, service or programme are explored through a free and open discussion between members of a group and the researcher [20]. It is useful data collection method which helps to generate qualitative data from the discussion by making group interaction between members of the target population. The FGD helps to capture more deeper and comprehensive information from respondents such as model women and males.

The researcher conducted three FGDs one from each Tabias. Each FGD participants are selected based on purposive sampling technique and each discussion comprises eight members. Therefore, a total numbers of study participants addressed with FGD are 24. These were organized for women (both model and non-model women) and husbands/males respectively. The discussion with the participants of the FGD was based on discussion guide that were structured around the key themes by using local Tigrigna language to avoid misunderstandings. Besides, the moderator was sensitive to local norms and customs during discussion. Before the commencement of the discussion, the moderator specified the objective of the FGD and guides the discussion accordingly.

### Key Informant Interview

Key informant interview is used to collect qualitative data from informants that have knowledge and experience on the issue of maternal health. This enabled to get in-depth information from informants. Interview guide with loosely structured conversation is used to collect data. This allows the interviewee to respond flexibly and the interviewer to manage the core issues of the study.



In this study, nine model women, six health workers including health extension workers, six religious leaders, three community leaders, were selected purposively and interviewed.

### In-depth interview

In-depth interviewing is the most commonly used data approach in qualitative research. In-depth interviews are those interviews that are designed to discover underlying motives and desires. Such interviews are held to explore needs, desires and feelings of respondents [19]. This method enabled the researcher to generate highly detailed information and to have better understanding on the perceived physical barriers to maternal health seeking behavior. In doing so, in-depth interview is conducted with twelve women with the help of interview guide check lists.

### Methods of Data Analysis

The data obtained from various sources is analyzed using both quantitative and qualitative data analysis methods. The qualitative data was collected from respondent using focus group discussion, key informant and in depth interview. Qualitative data analysis is conducted concurrently with gathering data, making interpretations, and writing reports [21]. The researcher listen all audio taped and read the field notes step by step to jot down all the information. After that the audio taped from FGDs, key informant interview and in depth interview transcribed verbatim, and translate from Tigrigna to English. Then, the translated data is organized, prepared, and broken up into sections based on their themes. Then a technique of thematic analysis is used to interpret and make sense of the organized data.

On the other hand, the quantitative data was processed as an important part of the whole survey operation. It includes editing, coding, data entry, data cleaning and consistency checking. A Statistical Package for Social Sciences (SPSS, version 20) was used to analyze the data. The researcher used descriptive statistical tools to analyze the quantitative data. Descriptive tools such as frequency, percentages, and graphs are employed to present the results. Finally, the quantitative findings are used to substantiate the qualitative findings.

### Ethical Consideration

In the progress of research, researchers need to respect the participants and the sites for research [21]. Thus, due respect was given to the participants during the data collection process. Besides, an informed consent was received from participants before the commencement of the interviews to ensure that participation in research was voluntary. Respondents were informed that they have the right to participate voluntarily and withdraw from the research at any time. Anonymity of respondents and confidentiality of their responses were ensured throughout the research process. Information that was provided by informants would not be transferred to a third party or would not be used for any other purpose.

### Results and Discussion

In this part, the major findings of the study, based on the data obtained through household survey; in-depth interview, key informant interview and FGD were presented and discussed, in a descriptive way. Theories relevant to the underlying themes and related literatures are used to interpret the primary data.

#### Socio-Demographic Characteristics of Respondents

The quantitative data is collected and analyzed on demographic and social characteristics of sample respondents. As indicated in the **Table 1**, the socio demographic characteristics in this study include age, marital status, ethnic identity, religious affiliation, educational background and income of the respondents.

Variables	Category	Frequency	Percentage
Age range	15-27	106	30
	25-34	113	31
	35-44	100	28
	45-49	40	11
	Total	359	100
Marital status	Single	14	3.9
	Married	314	87.5
	Widowed	7	1.9
	Divorced	24	6.7
	Total	359	100
Ethnicity	Tigray	336	93.6
	Amhara	23	6.4
	Total	359	100
Religion	Orthodox	257	71.6
	Muslim	98	27.3
	Others	4	1.2
	Total	359	100
Education	Illiterate	218	60.7
	Read and write	16	4.5
	1-8 grades	94	26.2
	9-12 grades	31	8.6
	Total	359	100
Monthly income	Below 500 birr	132	37.1
	501-1000 birr	159	44.7
	1001-1500 birr	43	12.1
	1501-2000 birr	16	4.5
	2001 and above	6	1.7
	Total	356	100

**Table 1:** Demographic and socioeconomic characteristics of respondents (n=359). Source: Own survey, 2016

In this study, a total of 359 rural women aged 15-49 years were included. Out of 359 respondents, the majority 113 (31%) of women were found between the age category of 25- 34 years. With regard to marital status, the majority of the respondents 314 (87.5%) were married followed by divorced consists of 24 (6.7%). According to participants marital status of the respondents has an association with maternal health seeking behavior. Being and becoming divorced and widowed affect maternal health seeking behavior of rural women.

Accordingly divorced and widowed women were at risk, lack financial resources, lack emotional, psychological and physical support; and are less likely to receive maternal health care services than the married ones. Moreover, women FGD participants also revealed that most divorced and widowed women were female headed households who have different duties that restrained women from visiting health facilities.

Furthermore, almost all respondents 336 (93.6%) belongs to Tigrayan ethnic groups followed by Amhara ethnic groups consists of 23 (6.4%). With regard to religious affiliation, the majority of respondents 257 (71.6%) are followers of orthodox Christian followed by Muslim 98 (27.3%). In relation to educational level of respondents, 218 (60.7%) are illiterate, 94 (26.18%) are educated up to grade eight, 31 (8.63%) are educated up to grade twelve; and the rest 16 (4.5%) of the respondents are simply able to read and write. Another important indicator for understanding the socio-economic status is the monthly income of the respondents in the household. Out of 359 respondents, 159 (44.7%) of them earn an average monthly income of 501-1000 birr, whereas 132 (37.1) of the respondents earn less than 500 birr per month.



### The Influence of Distance and Lack of Transport on Maternal Health Seeking Behavior

In line with this, distance is an obstacle for rural population of the study areas. The long distance of health facilities from the dwelling of rural women is the main factor that can influence a womans access to maternal health services. Similar to this vein, the quantitative result in **Table 2** revealed that out of 359 respondents, 278 (77.4%) were travelled less than 5 km to arrive at the nearest health post whereas the remaining 81(22.6%) traveled more than 5 km. This shows that the respondents travelled 3.87 km in average to reach to the nearby health post to get maternal health services. With regard to the distance of health center from home, 256 (71.2%) of the respondents were travelled less than 5 km to reach the nearest health center and the rest 103 (28.8 %) of the respondent were travelled more than 5 km to reach the nearest health center. In average, respondent travelled about 5 km to get to the nearest health center.

In addition to this, as the above table indicates, more than 333 (92.8%) of the respondents travelled more than 5 km to get maternal health services from the nearby district hospital while the rest 26 (7.2%) travelled less than 5 km. Respondents in average travelled more than 10 kilometers to reach to the district hospital. Besides, more than half 216(57.1%) of the respondents were travelled more than 5 kilometers to get the private clinic and 143 (42.9%) travelled less than 5 kilometer to reach the nearest private clinics. They travelled 6.4 kilometer in average to reach the private clinic to get medical treatments. In consistent with the above findings, study by Zegeye [22] in rural Jimma, Horro District revealed that 189 (35.8%) of the mothers were found to live within 5 kilometer, 495 (93.8%) of the mothers reside within 10 km walking distance of the nearest health center. But these studies failed to identify the distance of the home to the health facilities separately.

On the other hand, the research result revealed that distance to health facility and means of transportation are major obstacles to service utilization [23]; it has been observed as an important factor that can influence a womans access to health care [24] and it was consider as a major reason for rural women for non-attendance of antenatal and postnatal care services [25]. Likewise, in this study, distance was one among the major hindrance for rural women. The absence of roads also makes the distance and travelling times so long and unsafe for rural women. In rural areas of the study area, distance and lack of transportation were the major blockades to utilize maternal health services like antenatal, delivery and postnasal care services. As a result of this, a number of women were travelling very long distance frequently on foot to reach the nearby health facility. This is still a problem to access health facilities for women residing far away from health facilities at Raya Alamata district. Likewise, Thaddeus and Maine [26] in their studies found that distance to health services exerts a dual influence on use, as a disincentive to seeking care in the first place and as an actual obstacle to reaching care after a decision has been made to seek it. Many pregnant women do not even attempt to reach a facility for delivery since walking many km is difficult in labour and impossible if labour starts at night, and transport means are often unavailable. Those trying to reach a far-off facility often fail, and women with serious complications may die en route.

### Inequitable spatial distribution of health facilities and its influence on maternal health seeking behavior

The government is the main health provider in Ethiopia but the coverage and distribution of its health facilities among regions remains uneven. This weak infrastructure and limited distribution systems in low income countries complicate access to health services, especially in rural areas. Government health outlets may be relatively few and widely dispersed resulting in uneven service availability within a country [27].

Distance of health institutions from home	less than 5 Km		more than 5 Km		mean
	F	%	F	%	
Distance of health post from home in Km	278	77.4	81	22.6	3.87
Distance of health center from home in Km	256	71.2	103	28.8	4.5
Distance of hospital from home in Km	26	7.2	333	92.8	10.12
Distance of private clinic from home in Km	143	42.9	216	57.1	6.4

**Table 2:** Respondents opinion about distance of health institutions from home. Source: Own Survey, 2016.

The absence of equitable distribution of health institutions was one among the other problems that challenge rural woman to get maternal health services. Based on government of Ethiopian health strategy; the population health center ratio: the health centers are adequate but it was not constructed at the appropriate places. In supporting the above statement, one of the key informant interviewee, said:

“In the rural area some health facilities are not constructed at the hub of the Tabias. The health facilities are concentrated at specific areas. They are not equally distributed. This was difficult for those who have not health centers at nearby place because they travelled long distance with difficult topography to get maternal health services. This is not fair and it raises the question of equity (A 44 year old health expert at Raya Alamata district health office)”.

Finding from district health workers revealed that health centers were distributed disproportionately at Raya Alamata district. For instance, around Waja there were three health centers in one cluster. On the other hand, in the highland areas of the district, there was only one health center which has given health services to four Tabias. Tabias that were found in one cluster like Selam Bekalsi, Limiat and Hulu Giziye lemlem also have not any health center and they were used services from the town health facilities. So this indicated that the distribution of health centers was not equitably distributed across Tabias.

Moreover, the key informants approved the existence of thirteen health posts in the district but it was not constructed at the appropriate places. In support of this argument, a 24 year key informant from Tabia Selam Bekalsi noted that:

“For instance, at Tabia Selam Bekalsi the health post is not found at the right places. The health post is found at one margin of the Tabias which is not accessible to all population of the Tabia. The health post is more accessible only to one village whereas the other villages did not come and use the health post owing to long distance”.

In general, these haphazard distributions of health centers as well as health posts affect treatment seeking behavior of rural women during pregnancy, delivery and postnatal services. Rural women are being restricted to make contact with health care providers. As a result the number visit to health facilities was reduced. Besides, it has restrained rural women from using antenatal care services such tetanus toxoid immunization, iron and folic acid. They were deprived of accessing screening services for conditions and diseases such as anemia, STIs,



HIV and other pregnancy-related complications due to haphazard distribution of health centers. In general, the geographical location of health facilities affected the overall health seeking behavior of rural women at Raya Alamata district.

Qualitative data from FGD and key informant also revealed that haphazard distributions of health centers also contribute to home delivery under the supervision of Traditional Birth Attendants or other relatives. It has also reduced the proportion of babies delivered in a safe and clean environment under the supervision of health professionals. The mother and the child affected by complications arising from the delivery. Hence, this situation increases the risk of complications and infections that may cause the death or serious illness of the mother and the baby or both.

### **The influence of Topography and Weather on maternal health seeking behavior**

The diversity of socio-economic environments, climates, and terrains among regions in Ethiopia greatly impacts health conditions and outcomes [27]. Other studies also showed that geography and terrain were significant barriers to care seeking and utilization [28]. Besides, study conducted in Nepal also revealed that difficult geography was the main reason for poor access to the birthing center. The terrain and long walking hours for both women and services providers are well-known barriers to accessing health services [14]. Similarly, topography of the area specifically the mountainous nature is challenging for women to get timely maternal health services specifically in the highland parts of the district. In substantiating this, key informant from Timuga health center noted that:

“The topography of the area hinders women from attending antenatal care services. Most women were tedious to have four visits to the health facilities due to tough topography and distance. Then, the majorities were made a decision to abstain from attending health facilities however some women are tried to visit health facilities erratically [A 48 years of midwife]”.

As the above narration indicates, topography of the area is considered as barriers for rural women to use maternal health services. Due to its terrain nature of the physical environment, women were discouraged to use antenatal care services. They had turn down the amount of visits to health facilities. Some of them tried to visit health facilities but it is not even.

Concomitantly, the topography of the area is considered as barriers for rural women to use maternal health services. Due to its terrain nature of the physical environment, rural women were discouraged to use antenatal care services. They had turn down the amount of visits to health facilities. Some of them tried to visit health facilities but it is not even. This negatively affects the overall maternal health utilization in general and maternal health seeking behavior in particular. In addition to topography, a problem related to climate is another barrier for a number of women to seek and use maternal health services. In corroborating this idea, one of the respondents from Selam Bekalse has said respectively as follows:

“When I gave birth to my first kid it was at the summer time...my family and the Traditional Birth Attendant is waiting, at times, thinking she will give birth after a while. But as time went on I have been in pain and I suffer a lot and they went on thinking to take me to Alemata district hospital but in vain. This is because there is no access to road during the summer time and the muddy nature of the area has troubled us not to go. In the meantime, I began to labor and give birth in the nearby vicinity with the help of God [45 years old FGD participant]”.

As the above narration of the woman indicated that labour and birth mother were forced to suffer from pain why it happened is due to lack of access to road during the summer time and the muddy nature of the area. The absence of road and muddy nature of the vicinity restrained women from accessing maternal health services at the right time.

Besides, women were forced to give birth at home with the assistance of traditional birth attendant even they did not like to do it. Similarly, another study also revealed that the absence of road and muddy nature of the vicinity restrained women from accessing maternal health services at the right time [26]. Besides, women were forced to give birth at home with the assistance of traditional birth attendant even they did not like to do it. Another study also showed that difficult terrain, poor condition of roads, and unfavorable weather conditions such as rains and snowfall sometimes influence their decision to use facility-based services. They were also afraid of facing complications on the way to health facilities as it might take long for them to reach there [29]. In line with this literature, the informant stated the condition as follows:

“I know a woman in our village that had encountered a problem during the summer time. For it Greb Etu, Hara and Greb Odo have been flooded. The family of the pregnant woman and the accompanied neighbors were trapped because of the flood to get medical assistance going to the nearby town and they turned back to home to use any traditional measure for the delayed labor. Adding salt to injury, the local Traditional Birth Attendants says the fetus is coming upside down and she went to recommend making downward the pregnant woman using her to legs to rearrange and upright the misplaced fetus structure. Fortunately enough, after a couple of hours in labor, due to Gods assistance she has given birth. In a nutshell, during summer time especially when the three rivers flooded we have a lot of problem in our area to take pregnant women to health center [45 years old FGD participant]”.

Heavy rain and flooding were the major barriers for rural women during the rainy season to get maternal health services from modern health facilities at the right time and place. During this season, everything is hard for women because of the cold summer seasons at some parts of Raya Alamata district. In this season, the rural roads were covered with mud and become difficult for ambulances to transport labour women. So people forced to carry out women by using traditional ambulances (stretcher) to the nearest dry areas or roads this delays women from getting timely treatment and many of them delivered before reaching to the health centers without the assistance of health professionals. In line with this, studies in Zimbabwe revealed that during the rainy season women are affected as they become immobile because of the lack of transport [30].

### **Conclusion**

This study has tried to assess the perceived physical barriers to maternal health seeking behavior in Raya Alamata district, Southern zone of Tigray region by giving a particular emphasis on rural women. Accordingly, long distance and lack of transportation, inequitable distribution of health facilities, inconvenient topography and weather related problems were the major barriers for rural women. These perceived physical barriers have affected the treatment seeking behavior of rural women especially throughout pregnancy, delivery and postnatal stages. As a result, the number visit to health facilities were reduced, they restrained from using antenatal care services such tetanus toxoid immunization, iron and folic acid; and they were also deprived of accessing screening services for conditions and diseases such as anemia, STIs, HIV and other pregnancy-related complications. Besides, they are forced to deliver at home without the assistance of skilled birth attendants. This increases the risk of complications and



infections that may cause the death or serious illness of the mother and the baby or both.

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