



Health Extension Workers Involvement in the Utilization of Focused Antenatal Care Service in Rural Sidama Zone, Southern Ethiopia: A Cross-Sectional Study

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Abstract

Background: Health extension workers (HEWs) are primarily been assigned in rural areas of Ethiopia to provide maternal and child health services. Few studies have been done to investigate HEWs' contributions towards maternal health services. This study describes HEWs involvement in the utilization of focused antenatal care (FANC).

Methods: A population-based cross-sectional survey was conducted between January 21 and February 4, 2017. Mothers (2300) who gave birth in the last 6 months (0-6 months) in randomly selected 30 kebeles in the rural Sidama zone, participated in the study. A face-to-face interview was done using a structured questionnaire adapted from the Saving Newborn Lives Program. The main outcome variable was FANC utilization. Descriptive statistics and multivariate logistic regression analysis were used using SPSS statistical software.

Results: The FANC was used by 525 (24.36%; 95% confidence interval [CI]: 22.5%-26.2%) women. Health extension workers accounted for 244 (46.47%; 95% CI: 43.5-47.7%) of mothers. The FANC utilization was less likely among those who were illiterate (adjusted odds ratio [AOR]: .32; 95% CI: .18-.57) and those who attended first cycle (AOR: .41; 95% CI: .23-.74), those who attended secondary cycle (AOR: .47; 95% CI: .27-.82), primipara (AOR: 0.53; 95% CI: .35-.83), and those who gave birth at home (AOR: .66; 95% CI: .51-.84). Mothers who had knowledge of pregnancy danger signs (AOR: 1.42; 95% CI: 1.2-1.7) and exposure to mass media (AOR: 1.35; 95% CI: 1.1-1.66) were more likely to utilize FANC.

Conclusions: FANC utilization in this study was low compared to other studies. The HEWs had a major contribution to the services. However, it is low when compared to the plan set by the state ministry of health. The existing health extension program could be strengthened by increasing the number of HEWs. Empowering rural mothers through continuous education program to enhance the utilization of maternal health services.

Keywords

focused antenatal care, utilization, health extension workers involvement, rural sidama Ethiopia

Background

Focused antenatal care (FANC) is a goal-oriented antenatal care (ANC) approach that was recommended by researchers in 2001 and adopted by the World Health Organization (WHO) in 2002.¹ Increased ANC coverage and repeated visits of the woman to the health services provide opportunities for delivering evidence-based interventions to positive impact on maternal, fetal, and neonatal health and survival.² In Ethiopia, 85% of the population live in the rural part of the country.³ To expand primary health-care service for the rural population, the government of Ethiopia has undertaken a number of

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important public health initiatives aimed at improving the health outcomes of women and children.⁴ One of these initiatives is the launching of the Health Services Extension Program (HEP) in 2003; an innovative way of scaling up the delivery of essential health interventions targeting the household and community.^{5,6} The objectives of HEP were to reach the poor and deliver preventive and basic curative high-impact interventions to all of the Ethiopian population.⁷ The program was started by recruiting HEWs from the communities, in which they will work according to specific criteria, that is, all are females at least 18 years old, have at least a 10th-grade education, and speak the local language. Upon completion of training, pairs of HEWs are assigned as salaried government employees to health post (smallest health-care delivery point) in one kebele (the smallest administrative unit). They work directly with individual households.⁸ Each kebele has a health post that serves 5000 people and functions as an operational center for HEWs. Five health posts and a health center work in collaboration and for the Primary Health Care Unit (PHCU) that serves 25 000 people.⁹ Federal ministry of health report showed that the employment of the HEWs utilization of maternal and child health service showed improvement. The HEWs were provided ANC for 83% of pregnant mothers, 59% clean deliveries, and 47% postnatal care.^{10,11} A household survey conducted by the Last Ten Kilometers Project in the 4 largest regions showed that HEWs were provided ANC services for about 54% of pregnant women and 20% FANC (4 or more visits).¹² The objectives of HEP were to reach the poor and deliver preventive and basic curative high-impact interventions to all of the Ethiopian population.⁷ The program was started by recruiting HEWs from the communities in which they will work according to specific criteria, that is, all are females at least 18 years old, have at least a 10th-grade education, and speak the local language. Upon completion of training, pairs of HEWs are assigned as salaried government employees to health post (smallest health-care delivery point) in one kebele (the smallest administrative unit). They work directly with individual households.⁸ Each kebele has a health post that serves 5000 people and functions as an operational center for HEWs. Five health posts and a health center work in collaboration and for the PHCU that serves 25 000 people.⁹ According to the 2016 Ethiopian demographic and health survey (EDHS) report, 62% of women who gave birth in the 5 years preceding the survey received ANC from a skilled health-care provider at least once for their last pregnancy and only 32% had 4 or more ANC visits for their most recent live birth.¹³ In Ethiopia, very limited studies have been done to measure the role of HEWs in the utilization of FANC. Hence, the aims of this study were to assess HEWs involvement for the utilization of FANC among pregnant women in the rural Sidama zone in southern Ethiopia in 2017.

Methods

This study is part of Maternal and Newborn Health Research and Training of Saving Newborn Lives Program (SNL-III

Project) aimed at assessing the role of HEWs in utilization of maternal and newborn health services in the rural Sidama Zone. A community-based cross-sectional survey was conducted among mothers who had given birth in the past 6 months in rural Sidama zone, Ethiopia. A total of 2300 mothers with children aged 0 to 6 months were interviewed within the selected clusters. The authors adopted a previously published standard questionnaire developed by the Saving Newborn Lives Program for this survey.¹⁴ The main outcome variables was utilization of FANC. Socioeconomic, obstetrics, and gynecological characteristics are some of the predictor variables. Five districts were selected randomly from Sidama Zone in southern part of Ethiopia. The selected districts have 148 kebeles (the smallest unit of administration) of which 30 kebeles were selected using random generated numbers of OpenEpi Version 2.2 software and accounts for 20% of the total. All mothers with 0 to 6 months of age children residing in the selected kebeles were included in the study. Totally, 2300 eligible mothers participated in the study.

Descriptive statistics and logistic regression analysis were conducted to determine the effect of various factors on the outcome variable of FANC utilization. The degree of association between independent and dependent variables was assessed using odds ratios with 95% confidence intervals. The details of the methods section has already been published.¹⁵

Variable Definitions

Antenatal care (ANC): whether the woman attended a health facility for ANC at least once in her recent pregnancy.

Utilization of focused antenatal care (FANC): whether the woman attended 4 visits of ANC for the youngest pregnancy as per WHO recommendations.¹⁶

Health facility delivery: whether the woman gave birth in a health facility for her youngest child.

Knowledge of pregnancy danger signs: mothers correctly answered for danger signs during pregnancy questions and classified as having good knowledge if the mothers correctly answered half or more of the questions.

Health extension workers involvement: if the HEWs gave ANC for the pregnant women, if she initiated the pregnant women to seek ANC, or if the pregnant women referred by the health extension to the nearest health facility to seek advanced care. Then classified as involved at least 1 of these 3 activities were done by the HEWs.

Ethics Approval and Consent to Participate

The proposal was reviewed and approved by the research and ethics committee of the College of Medical and Health Sciences at Hawassa University, the Institutional Review Board (IRB). The reference number is IRB/041/09, issued on the date of September 20, 2017. Permission to undertake this study was obtained from every relevant authority of all the

selected district Health offices. Informed verbal consent was taken from all study participants. In case of adolescent mothers (<18 years of age), consent was obtained from parents. An information sheet that contain statements of potential risk, benefits, and confidentiality was attached to each questionnaire. The consent form was prepared in line with the ethical principle of “autonomy” by including statements that give participants the right to decline participation in the study at any time.

Results

Socio Demographic Characteristics of the Study

Data were collected from 2279 mothers making the response rate 99%. Data were not collected from 21 eligible mothers because they were not present in their home during the time of survey repeatedly. The majority (1435 [62.9%]) of the mothers were in the age-group of 20 to 29 years. Two-thirds (1517 [66.6%]) of the mothers have attended school of which 1279 (84.3%) attended primary level. Nearly all (2248 [98.6%]) were married or living together, and most (1940 [85.1%]) of the mothers were housewives (Table 1).

Obstetric and Child Characteristics of the Study Population

Altogether, 729 (34.9%) mothers were primigravidas, while 574 (25.2%) were gravida 4 and above. In terms of numbers of live births, 834 (36.6%) have had 1 birth and 544 (23.9%) mothers have had 4 live births. Sixty-two (2.7%) of mothers had a history of a stillbirth. The birth interval from the most recent previous birth was the ≥ 5 years in 1516 (66.5%) of mothers. There was history of infant death under 1 month of age in 123 (5.4%) of mothers (Table 2).

Focused Antenatal Care Utilization and HEWs Involvement

The study found that 2155 (94.6%) pregnant women had a history of at least 1 ANC visit for recent pregnancy. Of these, 983 (45.6%) of pregnant women were encouraged by HEWs to seek care. Nearly all mothers (2077 [96.4%]) received ANC service at health facilities, and the rest 83 (3.6%) received care in their own homes. Five hundred twenty-five (24.36%) of mothers reported 4 or more visit; therefore, by definition, the use of FANC was found to be 525 (24.36%; 95% CI: 22.5-26.2). Of these, HEWs have played a role among 244 (46.47%; 95% CI: 43.5-47.7) mothers who utilized FANC. Altogether, 576 (26.73%) mothers received their first ANC service at 16 or fewer weeks of gestation (Table 3).

Health problems during ANC visits were identified in 141 (6.2%) of mothers, and among the most frequent health problems were anemia/dizziness, 68 (3.0%), and high fever, 23 (1.0%); 36 (1.6%) of mothers who were having health problem received treatment from HEWs, and 71 (3.1%) were referred to health facilities by HEWs (Table 4).

Table 1. Sociodemographic Characteristics of the Study Population in the Rural Sidama Zone, Southern Ethiopia, 2017.

Variables (n = 2279)	Frequency	%	
Woreda/districts of the study	Boricha	622	27.3
	Dalle	606	26.6
	Shebedino	624	27.4
	Loka Abaya	208	9.1
	Wonsho	219	9.6
Maternal age in year	15-19	233	10.2
	20-24	769	33.7
	25-29	666	29.2
	30-34	393	17.2
	35+	218	9.6
Mothers educational status	Illiterate	762	33.4
	Grade 1-4	599	26.3
	Grade 5-8	680	29.8
	Grade 9-10	170	7.5
	Higher than grade 10	68	3
Maternal occupation	Housewife	1940	85.1
	Merchants/traders	170	7.5
	Daily laborer and others	76	3.3
	Farmer	93	4.1
Marital status	Married or living together	2248	98.6
	Formerly married	24	1.1
	Never married	7	0.3
Spouse's Education	Illiterates	762	33.4
	First cycle (1-4)	599	26.3
	Second cycle (5-8) \geq grade, 9th	680	29.8
Spouse's occupation	Farmer	1342	58.9
	Merchant/trader	644	28.3
	Day laborer/other	185	8.1
	Employed	108	4.7
Family size	<5 persons	1327	58.2
	≥ 5 persons	952	41.8
Distance of health post from home	<One hour	2126	93.3
	≥ 1 hour	152	6.7
Distance of health center from home	<One hour	1663	73.0
	≥ 1 hour	616	27.0
Exposure to mass media	Yes	601	26.4
	No	1678	73.6

Knowledge of Study Population About the Importance of ANC

The ANC service was thought necessary by 1346 (59.1%) mothers. Three hundred fifty-two (15.4%) reported the necessity of ANC for first-time pregnant mother and 202 (8.9%) for mothers who gave many births (Figure 1).

Factors Associated With FANC Service Utilization

Logistic regression analysis was done to assess factors associated with FANC utilization. Those who are earning monthly below 1000 ETB (AOR: 0.74; 95% CI: 0.52-0.97) are less likely to utilize FANC service compared to those who earn

Table 2. Obstetric and Child Characteristics of Study Population in Rural Sidama Zone, Southern Ethiopia, 2017.

Variables (n = 2279)		Frequency	%
Child Sex	Male	1182	51.9
	Female	1097	48.1
Age of the child in weeks	0-4	331	14.5
	5-12	609	26.7
	13-24	1339	58.8
Gravida	1	795	34.9
	2-4	1167	51.2
	5+	317	13.9
Parity	1	834	36.6
	2-4	1166	51.2
	5+	279	12.2
Birth order of the last child	1-2	130	5.7
	3-4	633	27.8
	5 +	1516	66.5
Child dead or alive	Alive	2258	99.1
	Deceased	21	0.9
History of neonatal death	Yes	123	5.4
	No	2156	94.6

Table 3. Focused Antenatal Care Visit Status of Study Population in Rural Sidama Zone, Southern Ethiopia, 2017.

Variables		Frequency	%
See any one for antenatal (ANC; n = 2279)	Yes	2155	94.6
	No	124	5.4
Whom did you see first? (N = 2155)	Nurse/midwife	1072	49.7
	HEWs	982	45.6
	Doctor	50	2.3
	Health worker unknown type	46	2.1
	Other	5	0.2
Whom initiated you first to seek ANC care (n = 2155)	Self	983	45.6
	HEWs	983	45.6
	Health workers	130	6.1
	Other	59	2.7
Place of ANC visit (n = 2155)	Health center	1061	49.2
	Health post	1008	46.8
	Hospital	46	2.1
	Others	40	1.9
Time of first initiation of care (n = 2155)	≤16 weeks	576	26.7
	>16 weeks	1572	73
	Did not know	7	0.3
Number of ANC visits (n = 2155)	One visit	213	9.8
	Two visits	410	19.0
	Three Visits	1007	46.7
	Four or more visits	525	24.36

Abbreviation: ANC, antenatal care.

more than 2000 ETB. Compared to mothers who attended grade 10 or more, those who are illiterate (AOR: 0.32; 95% CI: 0.18-0.57), who attended completed (1-4) grade (AOR: 0.41; 95% CI: 0.23-0.74), and attended (5-8) grade (AOR: 0.47; 95% CI: 0.27-0.82) are less likely to utilize FANC.

Table 4. Types of ANC Services Received by the Study Population During the Time of the ANC Visit in the Rural Sidama Zone, Southern Ethiopia, 2017.

Variables (n = 2155)		Frequency	%
Weighed	Yes	1694	74.3
	No	461	25.7
Blood pressure measured	Yes	1912	83.9
	No	243	16.1
Counseled on nutrition	Yes	1911	83.9
	No	244	16.1
Counseled on birth preparedness	Yes	1825	80.1
	No	330	19.9
Counseled on breast-feeding	Yes	1854	81.4
	No	301	18.6
Counseled on family planning	Yes	1483	65.1
	No	672	34.9
Counseled about HIV	Yes	1515	66.5
	No	640	33.5
Counseled on expressing breast-milk	Yes	1329	58.3
	No	826	41.7
Counseled on newborn danger signs	Yes	1349	59.2
	No	806	40.8
Counseled on the maternal danger sign	Yes	1495	65.6
	No	660	34.4
HIV test as part of ANC	Yes	1097	48.1
	No	1058	51.9
Iron folate during current ANC	Yes	1875	82.3
	No	280	17.7
Tetanus toxoid vaccine during ANC visits	Yes	1931	84.7
	No	224	15.3
Is there any health problems identified during ANC?	Yes	141	6.2
	No	2011	88.2
	Don't know	3	0.1
What did you receive for the identified health problem at that time? (N = 141)	Treatment received from HEWs	36	25.5
	Referred to health facilities by HEWs	71	50.4
	Self-limited	9	6.4
	No action done	9	6.4
	Other (received iron folate)	16	11.3

Abbreviations: ANC, antenatal care; HEWs, health extension workers; HIV; human immunodeficiency syndrome.

Similarly, compared to mothers whose parity was 5 or more, mothers whose primi para are (AOR: 0.53; 95% CI: 0.35-0.83) less likely to utilize FANC service. When compared to mothers who delivered the youngest birth in a health facility, those who gave birth at home are (AOR: 0.66; 95% CI: 0.51-0.84) less likely to utilize FANC. Those mothers who had knowledge of pregnancy danger sign were more likely to utilize FANC than their counterpart (AOR: 1.42; 95% CI: 1.2-1.7). In addition, compared to mothers who did not have exposure to mass media, those had exposure (AOR: . 1.35; 95% CI: 1.1-1.66) are more likely to utilize FANC. Variables such as distance to health facilities, maternal age, and spouse's occupation were not significant in this study (Table 5).

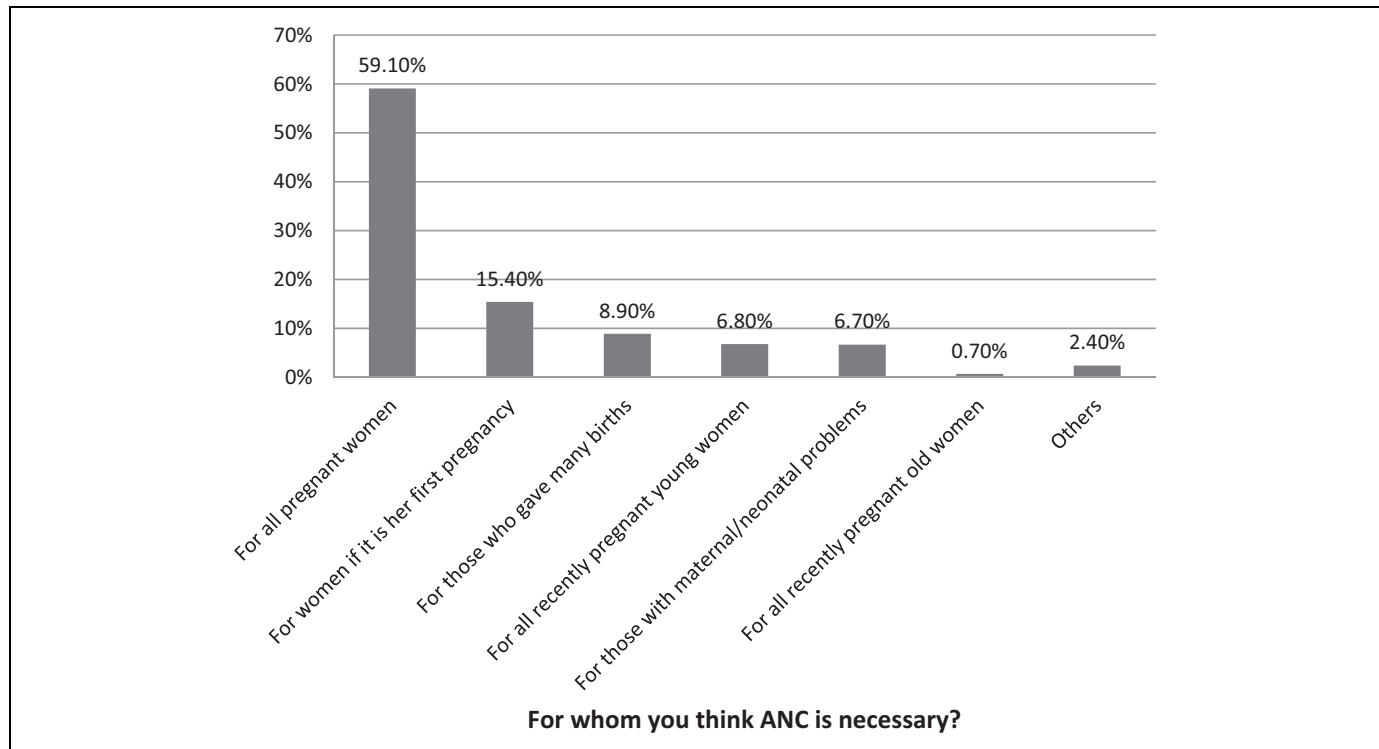


Figure 1. Knowledge of respondents on importance of ANC in Sidama Zone, Southern Ethiopia, 2017.

Discussion

This study has attempted to determine HEWs involvement in the utilization of FANC and its associated factors. The results have shown the prevalence of FANC service utilization, 525 (24.36%), and HEWs have played their role among 244 (46.47%) mothers who utilized FANC.

The HEWs are important to aid rural women accessing maternal and child health services. They also play a major role in reducing maternal and child morbidity and mortality. This study found that HEWs were used by nearly half of the mothers who utilized FANC. The finding is similar to studies done in the Tigray region and Southern Ethiopia, where the HEWs were important in improving the ANC services.^{17,18} The ministry of health of Ethiopia designed the HEP to address the primary health-care service package for every rural woman. However, our study showed that more than half of the mothers did not receive care from the HEWs. We do not know why close to half mothers did not use the HEWs. Further study is important to investigate the reasons.

The prevalence of FANC service utilization in this study (24.36%) was lower compared to the findings of EDHS, and another study was conducted in southern part of Ethiopia, where FANC utilization was about 32% and 46%, respectively.^{13,19} This difference might be because our study was done exclusively in rural areas. However, it is also consistent with another similar study conducted in 2009 in Yem special Woreda, southwestern Ethiopia, where 28.5% of women had FANC services during their last pregnancy, while, higher than the studies done in Northeast, Northwest, and southern Ethiopia.²⁰⁻²² This variation may be due to differences in time of study and settings.

Initiation of ANC in the first trimester of pregnancy is helpful for early detection and management of pregnancy-related health risks. This study showed a similar percentage of pregnant women initiated care in the first trimester compared to studies done in southern Ethiopia and Kenya,^{22,23} and lower compared to a study done in Sindh, Pakistan.²⁴

Income was one of the factors associated with FANC service utilization, where those who earn below 1000 ETB were less likely to utilize ANC service compared to those who earn more than 2000 ETB. This finding is consistent with a finding based on demographic and health surveys in Ethiopia and Kenya, which showed women's of lower socioeconomic status were less likely to complete prenatal care.^{13,25} Another study done in Kham District showed that the cost of transportation is one of the major barriers for the utilization of ANC services.²⁶ Those with low income have a problem paying for transportation and use their low income to fulfill their basic needs.

The study found that maternal basic education has a major role in the utilization of FANC. Compared to mothers who attended grade 10 or more, mothers who were illiterate and attended primary level education are less likely to utilize FANC. Similarly, a study conducted in Ibadan, Nigeria, Kham district, and in rural West Sumatra, Indonesia, and Kenya, showed respondents who had an education of secondary school and above utilized FANC more compared to women who had an education of primary school and below.²⁵⁻²⁹ This can be explained as education is likely to enhance mothers understanding about the importance of FANC utilization, seek care, and also increase decision-making ability.

Table 5. Multivariate Logistic Regression Analysis Result of Factors Associated With Utilization of Focused Antennal Service Study Population in Rural Sidama Zone, Southern Ethiopia, 2017.

Study Variables	Focused ANC Utilization		COR (95%CI)	AOR (95%CI)	
	Yes	No			
Maternal age in year	15-19	50 (21.5)	183 (78.5)	1.1 (0.7-1.7)	1.3 (0.74-2.2)
	20-24	186 (24.2)	583 (75.8)	1.3 (0.89-1.8)	1.3 (0.8-2)
	25-29	156 (23.4)	510 (76.7)	1.2 (0.85-1.8)	1.3 (0.83-1.9)
	30-34	90 (22.9)	303 (77.1)	1.2 (0.80-1.8)	1.16 (0.76-1.77)
	35+	43 (19.7)	175 (80.3)		
Monthly income (Ethiopian Birr)	≤499	137 (21.4)	503 (78.6)	0.68 (0.50-0.92)	0.74 (0.53-1)
	500-999	161 (20)	643 (80)	0.63 (0.47-0.84)	0.71 (0.52-0.97)
	1000-1499	85 (24.9)	256 (75.1)	0.83 (0.59-1.17)	0.91 (0.64-1.3)
	1500-1999	47 (29.4)	113 (70.6)	1.04 (0.69-1.58)	1.07 (0.70-1.6)
	≥2000	95 (28.4)	239 (71.6)		
Spouse's occupation	Farmer	306 (22.8)	1036 (77.2)	0.88 (0.56-1.4)	1.6 (0.96-2.7)
	Merchant/trader	150 (23.3)	494 (76.7)	0.91 (0.56-1.5)	1.4 (0.82-2.3)
	Daly laborer	42 (22.7)	143 (77.3)	0.88 (0.5-1.5)	1.4 (.77-2.5)
	Employed	27 (25.0)	81 (75)		
Mother's highest education	Grade 1-4	135 (22.5)	464 (77.5)	0.44 (0.26-0.74)	0.41 (0.23-0.74)
	Grade 5-8	171 (25.1)	509 (74.9)	0.51 (0.31-0.85)	0.47 (0.27-0.82)
	Grade 9-10	49 (28.8)	121 (71.2)	0.61 (0.34-1.1)	0.59 (0.32-1.1)
	>Grade 10	27 (39.7)	41 (60.3)		
Parity	Never attended	143 (18.8)	619 (81.2)	0.35 (0.21-0.59)	0.32 (0.18-0.57)
	1	183 (21.9)	651 (78.1)	0.90 (0.65-1.25)	0.53 (0.35-0.83)
	2-4	276 (23.7)	890 (76.3)	1.0 (0.73-1.36)	0.75 (0.53-1.08)
Place of Delivery	5+	66 (23.7)	213 (76.3)		
	Home	115 (18.0)	525 (82.0)	0.66 (0.52-0.82) ^a	.66 (0.51-0.84)
Knowledge of pregnancy danger signs	Health facility	410 (25.0)	1229 (75.0)		
	Yes	286 (24.4)	885 (75.6)	1.42 (1.2-1.68)	1.42 (1.2-1.7)
Distance from health post to home	No	239 (21.6)	869 (78.4)		
	<1 hour	514 (22.9)	1728 (77.1)	0.9 (0.46-1.77)	0.86 (0.43-1.74)
Exposure to mass media	≥1 hour	11 (29.7)	26 (70.3)		
	Yes	167 (27.8)	434 (72.2)	1.31 (1.1-1.6)	1.35 (1.1-1.66)
	No	358 (21.3)	1320 (78.7)		

Abbreviations: AOR, adjusted odds ratio; CI, confidence interval; COR, crude odds ratio.

The finding of this study also showed an association with place of delivery; compared to women who gave birth at a health facility, mothers who gave birth at home were less likely to utilize FANC. This might be mothers coming to ANC are more likely to have adequate counseling to plan their place of delivery at health facilities and create awareness on the pregnancy-related danger sign and other related information from the health-care providers. Thus, this enables the mother to seek 4 and more times for ANC as well as to give their birth at health facilities. This finding is similar to studies done in rural India, Nigeria, and Sudan.³⁰⁻³²

Compared to women who had 5 or more babies, primiparas were less likely to utilize FANC. This finding is similar to studies done in Northwest Ethiopia and rural India.^{19,33} It is different from studies done in Kenya and Sudan.^{25,29,32} The difference might be unlike our study participants were selected from a health facility. This might be those who don't have experience may not have a good perception to seek care and utilize. On the contrary, those who had 5 or more births may have experience and previous exposure to the service that encourages them to utilize more.

This study also revealed that mothers who had knowledge of pregnancy danger sign were more likely to utilize FANC compared to their counterpart. This might be because this knowledge helps the pregnant women to seek appropriate, regular, and timely health-care service including FANC. Studies were done in Eritrea and rural Bangladesh also reported a lack of knowledge of pregnancy danger sign delay health-care seeking.^{34,35}

Women who had exposure to mass media were more likely to utilize FANC compared to their counter. This might be the exposure to different mass media have a positive influence. The finding of this study is similar to studies done in Tigray region, Ethiopia, and rural Bangladesh.^{17,36}

Limitations of this study include the self-reported nature of the data. However, to minimize the recall bias, all women had given in the past 6 months participated.

Conclusion

The prevalence of FANC service utilization is low in this study compared to other similar studies. The HEWs have a major role in the utilization of FANC. However, the expectation is to

reach every mother in rural areas. Low income, low educational level, home delivery, low parity, and low exposure to mass media were associated with low utilization of FANC. Therefore, figuring out how HEWs can reach more rural expectant women is important. Empowering rural mothers to receive maternal health care by improving education and income may enhance the utilization of maternal health services.

Authors' Note

The A.G. and Y.H. were involved in the conception and design of the study, the data collection, data supervision, data processing, cleaning, analysis and interpretation of the results, and developing the manuscript. A.A., M.T., and M.M. were involved in the conception and design of the study, data collection, and data supervision. All authors have read and approved the manuscript. The data sets generated and/or analyzed during the current study available from the corresponding author on reasonable request.

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