

Antenatal care utilization and associated factors from rural health extension workers in Abuna Gindeberet district, West Shewa, Oromiya region, Ethiopia

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Abstract: Developing countries has low antenatal care coverage. A new cadre of community levels health workers in Ethiopia hoped to improve maternal health problem by providing antenatal care services. However, level of antenatal care services utilization from rural health extension workers is not well known. Thus, this study aimed to assess antenatal care utilizations and associated factors from rural health extension workers in Abuna Gindeberet district of West Shewa, Oromiya regional state, Central Ethiopia. A community-based cross-sectional study design was employed among 703 randomly identified mothers of Abuna Gindeberet district in March 2013. Data were collected through interviewer-administered questionnaire and analyzed using SPSS version 16.0 software. Descriptive, bivariate and multivariate analyses were used to determine prevalence and in identifying, associated factors of antenatal care considering p-value of 0.05. Five hundred seventy nine (82.4%) of the mothers had received antenatal care services during their recent pregnancy. From total mothers used antenatal care services, four hundred twenty three of them (73.1%) received the service from health extension workers. Age, educational level of respondent, distance from health post, decision makers in household and being model family were found to be statistically significant with antenatal care services utilization from health extension workers. Antenatal care service utilization from rural health extension workers was high. Age, educational level of the respondent, distance from health post, parity, decision making way and being a model family were among the predictors of antenatal care utilization from health extension workers. Thus, focusing the identified factors could improve and sustain antenatal care services from rural health extension workers.

Keywords: Health Extension Worker, Antenatal Care

1. Introduction

Antenatal care (ANC) is one of the most effective health interventions for preventing maternal morbidity and mortality particularly in places where the general health status of the women is poor through counseling on nutrition, birth preparedness, delivery care and family planning options after birth. It is a good opportunity for identifying threats to mother and unborn baby's health (1). But, developing countries have low antenatal care coverage and there is wide gap of ANC between developed and developing countries mothers. In developed countries, 97 %

of women make at least one ANC visit. In developing countries coverage of at least one ANC visit is low; that 69% in Sub-Saharan Africa and 54 % in Asia (2).

Complications of pregnancy and childbirth are the leading causes of disability and death among women in the reproductive age (15- 49) groups in developing countries (3). Every year some 536,000 women die of complications during pregnancy or childbirth of which 99% of them are in developing countries (4).

A woman who gives birth in Sub- Saharan Africa is 300 times more likely to die from complications related to pregnancy or childbirth compared to her counter-part living

in a developed country (5). Ethiopia is also one of the countries with highest maternal mortality ratios in the world (6).

The Health Extension Program (HEP) was introduced during the second phase of Ethiopia's Health Sector Development Program (HSDP), since 2002/3. It is a new initiative community - based health care delivery system aimed at provision of essential services to reach the people at the grassroots level (7). It is the main vehicle for bringing key maternal, neonatal and child health interventions to the community through a new cadre of health extension workers in Ethiopia. However, only 9% of women received ANC from these health extension workers (HEW) (6, 8). There are few studies on ANC services utilizations from health extension workers. Thus, this study aimed to determine prevalence of ANC utilizations and associated factors from health extension workers of Abuna Gindeberet district of West Shewa, Oromiya Regional State, Central Ethiopia.

2. Methodology

2.1. Study Setting and Participation

Community based cross sectional study conducted among seven hundred three women who gave birth in the last twelve months in Abuna Gindeberet district, West Shewa Zone, Oromiya Regional State in March 2013. The district has forty-two rural kebeles from which fourteen of them were randomly selected. Households with under one-year child were identified through census and sampling frame was developed. Finally, study subjects were addressed through systematic random sampling (9).

The sample was determined using single population proportion formula with an assumption of: level of confidence of the study 95%, sampling error tolerated 5%, proportion of ANC (P) 50% and 10% non-response rate. Design effects of two were also considered because of the two sampling techniques.

2.2. Instruments and Data Collection Methods

Structured questionnaire, which address the objectives of the study, was adapted from pertinent literatures. The questionnaires was translated into the local language - Afan Oromo and retranslated to English. Pre-test was done on 5% of the sample size in kebeles different from those selected kebeles before actual data collection. House to house data collection was made through interviewer administered questionnaires.

2.3. Data Processing and Analysis

Data entered into EpiData Version 3.1 and exported to SPSS version 16.0 for an analysis. Descriptive analysis was made to determine the prevalence of ANC utilization from health extension workers. Bivariate and multivariate analyses were used to identify associated factor of antenatal care service utilization from HEWs; accordingly, a p-value

of 0.05 was considered to identify significantly associated variables.

2.4. Ethical Considerations

Ethical clearance and approval was obtained from the Ethical review Committee of the College of Public Health and Medical Sciences, Jimma University. Permission was obtained from district Health office. Oral informed consent obtained from participants. Confidentiality and anonymity ensured. Participants were informed that their participation were voluntary.

3. Results

3.1. Socio-Demographic Characteristics

Table 1. Socio-demographic characteristics of respondents in Abuna Gindeberet district, West Shewa Zone, Central Ethiopia, March 2013

Variables	Number (n=703)	Percent (%)
Educational status		
No education	316	45.0
Only read and write	110	15.6
Primary education	233	33.1
Secondary education	44	6.3
Religion		
Protestant	525	74.7
Orthodox	122	17.3
Wakefata	56	8.0
Occupation		
Housewife	648	92.2
Government employee	22	3.1
Private Employee	33	4.7
Marital Status		
Married	681	96.9
Single	22	3.1
Distance of house from health post		
< 2 km	380	54.1
2-5km	167	23.8
>5km	156	22.2
Household status towards as model family		
Did not hear about model family	22	3.1
Have heard but not at all working towards graduation	66	9.4
Working towards graduation	472	67.1
Graduated as model family	143	20.3

Seven hundred three mothers were participated in the study with a response rate of 98.7%. The mean age of the respondents was 31.5 (SD±7.34) years. Protestants account for the highest proportion in the religious distribution 525 (74.7%) followed by Orthodox (17.4%). Forty five percent of the respondents had not attended any form of education. Six hundred eighty one (96.9 %) of the respondents were married (Table 1).

3.2. Antenatal Care services Utilization

Six hundred sixty nine (95.2 %) of the respondents had heard about ANC services. Health extension workers were

the source of information for 509 (76.1%) of the respondents had ever heard the service. Five hundred seventy nine (82.4%) of the respondents took ANC services at least once and only 177 (30.6%) of the respondents took World Health Organization recommended number of ANC services for their recent child pregnancy. Being free from any health problem during pregnancy was the major reasons for not attending ANC service. From the total five hundred seventy nine respondents received ANC service for their recent child pregnancy, 423 (73.1%) of them took the service from health extension workers (Table 2).

Table 2. Antenatal Care Services Utilizations from Rural Health Extension Workers in Abuna Gindeberet Woreda, West Shewa Zone, Central Ethiopia, in March 2013

Variables	Number (n=703)	Percent (%)
Having information on ANC		
Yes	669	95.2
No	34	4.8
Sources of information on ANC		
Radio	63	9.4
HEWs	509	76.1
Health professional	91	13.6
TBAs	6	0.8
Received ANC service for their recent child pregnancy		
Yes	579	82.4
No	124	17.6
Reason for not using ANC		
No knowledge about ANC	26	20.6
Being in a state of good health	54	43.7
Far from my home	21	17.4
Too busy	8	6.3
Waiting time is too long	15	12.0
Service Provider visited for ANC		
Health Post /HEWs/	423	73.1
Other health professionals	156	26.9
Main reason initiated for ANC follow up		
Health problem	93	16.1
To start regular check up	486	83.9
Reasons for not using from health extension workers		
Poor quality service	71	45.5
Facility not open regularly	27	17.3
Not heard as they gave	43	27.6
Number of ANC visits during pregnancy		
One visit	91	15.6
Two visits	239	41.3
Three visits	72	12.5
Four and more visits	177	30.6

3.3. Associated Factors for ANC Service Utilizations from Health Extension Workers

Bivariate logistic regression analysis was used to identify associated factors with ANC service utilization from rural HEWs. Accordingly, age, educational status of respondents, parity, household distance from health post, decision making way and being a model family were statistically associated with ANC service utilization from rural Health Extension workers. However, Occupation of respondent, educational status of respondents' husband and occupation

of respondents' husband did not show statistically significant association with antenatal care utilization of the respondents. Through multivariate logistic regression analysis the same variables were independently associated with ANC service utilization from rural health extension workers (Table-3).

Table 3. Association of factors with antenatal care services utilization from rural health extension workers in Abuna Gindeberet District, West Shewa Zone, Central Ethiopia, March 2013

Variables	Number (%)	COR (P-value)	AOR (95% CI)
Age of respondent			
18-24 years	134(19.1)	1.33 (0.001)	2.49 (1.44-4.30)*
25-34 years	304(43.2)	1.29 (0.003)	2.18 (1.57-3.91)*
35 & above	265(37.7)	1.00	1.00
Educational level of respondent			
No education	426(60.6)	0.45 (0.000)	0.22 (0.13-0.36)*
Primary education	277(39.4)	1.00	1.00
Parity			
1-2	105(14.9)	1.00	1.00
3-4	291(41.4)	0.99	0.97 (0.78-0.98)*
5 & above	307(43.7)	0.79 (0.000)	0.70 (0.60-0.81)*
Household distance from Health Post			
<2km	380(54.0)	1.48 (0.000)	3.73 (2.34-5.95)*
2-5km	167(23.8)	1.40 (0.001)	2.47 (1.96-3.79)*
>5km	156(22.2)	1.00	1.00
Model family			
Yes	143(20.4)	1.00	1.00
No	560(79.6)	0.17 (0.000)	0.06 (0.03-0.11)*
Decision making way			
Wife	79(11.3)	11.947 (0.000)	8.108 (3.24 -20.29)*
Husband	61 (8.7)	1.491 (0.308)	1.162(0.53 - 2.56)
Both together	563(80.0)	1.00	1.00
Occupation of respondent			
Housewife	648(92.2)	0.99 (0.26)	
Employed	55(7.8)	1.00	
Occupation of husband			
Farmer	547(77.8)	1.00	
Employed	89(12.7)	1.43 (0.76)	
Educational level of husband			
No Education	174 (23.8)	1.000	
Primary education & above	529(76.2)	0.75 (0.68)	

* P-value <0.0

Respondents whose ages were below 35 years were more likely to utilize ANC services from rural health extension worker than older respondents (OR= 2.49, 95% CI=1.44, 4.30). Lacking formal education reduces ANC service utilization from rural health extension workers (OR= 0.219, 95%CI=0.134, 0.357). Distance of the residence of the respondents from health post showed significant association with ANC service utilization. Respondents who dwell in a distance of less than five kilometers were more likely to utilize ANC services than mothers who were at more than five kilo meters from their kebele's health post (OR= 3.727, 95%CI=2.336, 5.945) (Table-3).

4. Discussion

The study aimed at demonstrating the utilization level of antenatal care from rural health extension workers (HEWs), and examined factors that predict the maternal health services utilization from HEWs in the study area.

From the total five hundred seventy nine had utilized ANC service for their recent child pregnancy, 423 (73.1%) of them took ANC services from rural health extension workers. But, Ethiopia Demographic and Health Survey of 2011 showed lower ANC service utilization among reproductive age women of Oromiya regional state, which was (9.1 %) (6). This difference might be due the scope of the studies which was national wide in the case of EDHS and only one district in the case of this study. There might be also inclusion of district with very low ANC service utilization in the case of EDHS. In addition, study conducted in Tigray region showed that 163(22.5%) of the mothers visited health extension workers before delivery, which is lower than ANC service utilization in this study (10). The difference is might be due to study time and study population difference, which was under five-child mother in the case of Tigray and under one year child mother in this study. Study done in Yem special woreda in 2008 revealed that ANC services utilization from health post was 54%; which is different from the finding of this study (12). The difference might come from socio-demographic difference two study populations.

The explanatory variables that identified as determinant factors of ANC services utilization from HEWs were: educational status, parity, age of the respondents', distance from health post, decision making way and being a model family. Research conducted in Yem special woreda, Southwestern Ethiopia in 2008 also showed that education, distance from health facilities and husband's approval (discussion making ways in the case of this study) were among the determinant factors of ANC service utilization (12).

Also according to study on Factors affecting the utilization of antenatal care in developing countries: systematic review of the literature in 2007; maternal education, husband's education, marital status, availability, cost, household income, women's employment, media exposure and having a history of obstetric complications were determinant factors that affect ANC services utilization (13).

Among Tigray Ethiopia women also educational status and proximity to health facility showed significant association with ANC service utilization. However, occupation of husband of the respondents that was insignificant in this study was significantly associated among Tigray women. Socio-demographic factors are probably the why of the difference (14).

As the data collection method was interviewer administered, it has contribution for accuracy of the data collected by explaining unclear points for respondents. Only the quantitative method of data collection was used and it is not triangulated with qualitative methods of data

collection. Therefore, the other interested researcher on this topic is better if include qualitative methods.

5. Conclusion

Antenatal care service utilization from rural health extension workers was high. Age, educational level of the respondent, parity, distance from health post, decision making way and being a model family were among the predictors of antenatal care utilization from health extension workers. Thus, focusing the identified factors could improve and sustain antenatal care services from rural health extension workers.

Competing Interests

None of the authors has any competing interest.

Authors' Contributions

BD, FT & SO conceived and designed the study. BD and FT analyzed the data and interpreted the results. ND prepared the manuscript and assisted the analysis. BD & ND critically reviewed the manuscript. All authors have read and approved this manuscript.

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