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Women's autonomy and reproductive health-care-seeking behavior in Ethiopia

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ABSTRACT

Background: This paper investigated the potential importance of women's autonomy in reproductive health-care-seeking behavior of women in Ethiopia.

Methods: Data from the 2011 Ethiopian Demographic and Health survey (DHS), which involved a total of 16,515 women, were analyzed. A weighted sub-sample of married women and women who had a live birth were included in analyses on family planning and antenatal care. Women's autonomy was measured by participation in decision making, attitudes toward wife beating, and whether getting permission to seek medical care was a big problem.

Results: Nearly 54% of women participated in all major household decisions, and 69% said getting permission to go for medical care was not a large problem. Women's participation in domestic decision making was significantly positively associated with use of family planning (adjusted odds ratio [aOR]: 1.37, 95% confidence interval [CI]: 1.17–1.62), and antenatal care (aOR: 1.36, 95% CI: 1.13–1.64) after adjusting for the effects of socio-demographic variables. Moreover, greater women's education, paid employment, exposure to media, and better household economic status were related to both use of family planning and antenatal care.

Conclusion: Improving women's autonomy will help to attain both gender equality and improved use of health services.

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Antenatal care; autonomy; Ethiopia; family planning; reproductive health

Introduction

In developing countries, maternal and child mortality continues to be a major health problem. According to the recent estimate by the Maternal Mortality Estimation Inter-Agency Group (MMEIG), an estimated 303,000 maternal deaths occurred in 2015 globally (WHO 2015b). This was a 43% change from the 1990 level, but yet 99% of the deaths occurred in low- and middle-income developing countries (WHO 2010, 2015b). Sub-Saharan Africa accounted for 66% (201,000) of the deaths and had the highest Maternal Mortality Ratio (MMR) at 546 maternal deaths per

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100,000 live births (WHO 2015b). Ethiopia's maternal mortality was 676 per 100,000 live births according to the 2011 Ethiopian Demographic and Health Survey (EDHS) (Central Statistical Agency & ICF 2012) but estimated at 350 per 100,000 live births in the recent MMEIG estimate. Yet, it is one of the highest levels in the world. Although Ethiopia has attained the MDG goals for child mortality, the neonatal mortality rate is still very high, at 37 per 1,000 live births in 2011, and has shown little decline in the last decade (Central Statistical Agency & ICF 2012; Central Statistical Agency and Macro International 2001).

Maternal health remained a central goal in the post-2015 framework for sustainable development (WHO 2015a), with maternal mortality ratio and proportion of births attended by skilled health personnel as the core indicators to monitor progress. Target 3.1 of the Sustainable Development Goals (SDGs) states that all countries should reduce the maternal mortality ratio to less than 70 per 100,000 live births by 2030. The WHO has explicitly stated that achieving the goal for maternal health requires ensuring universal health care coverage for sexual, reproductive, and maternal health care; addressing inequities in access and quality of sexual, reproductive, and maternal health care; addressing all causes of maternal mortality, morbidities, and related disabilities; and strengthening health systems to respond to the needs and priorities of women (WHO 2015a). In particular, ensuring universal access to sexual and reproductive health-care services, particularly family planning, will help reduce maternal mortality by preventing unintended pregnancies and abortion related deaths (Bongaarts et al. 2012; Cleland et al. 2006; WHO 2015a). It also prevents closely spaced pregnancies, early childbearing, and childbearing at the end of the reproductive years, all of which contribute to increased maternal and infant mortality rates. Although Ethiopia achieved a rapid increase in contraceptive use from 8% in 2000 to 36% in 2016, over one-fifth of married women have unmet needs for family planning (Central Statistical Agency [Ethiopia] and ICF 2016), indicating that the goal of universal access to sexual and reprodcutive health services is far from being met.

Similarly, antenatal care is a key maternal service in improving a wide range of health outcomes for women and children. It provides an opportunity to deliver interventions for improving maternal nutrition, providing health education, and encouraging skilled attendance at birth and use of facilities for emergency obstetric care (Oyerinde 2013; Mishra and Retherford 2006). However, use of maternal health services is very low in Ethiopia. As of 2011, only one-third of women used antenatal care, and use of skilled assistance at delivery, critical for the reduction of maternal and neonatal mortality, was extremely low at 10% (Central Statistical Agency & ICF 2012).

Studies have documented several individual, community, and health-care-related factors that contribute to the underuse of maternal health services in developing countries (Babalola and Fatusi 2009; Fotso et al. 2009).

Studies from Ethiopia also documented similar associations between individual, household, and community level factors with the use of maternal health-care services (Birmeta, Dibaba, and Woldeyohannes 2013, Dibaba et al. 2013; Worku et al. 2013). However, very few studies have examined the relation of socio-cultural factors, such as inequitable gender roles and women's autonomy within the household, with the use of reproductive health services in the Ethiopian setting (Osamor and Grady 2016; Furuta and Salway 2006). Although women's autonomy is important for reproductive and maternal health services, challenges have existed in conceptualizing and measuring women's autonomy due to the multidimensionality of the construct and different researchers focusing on different dimensions. In the literature on women's autonomy and reproductive health, researchers have used various indicators, including access to and control over resources, participation in household decisions, mobility, freedom from domestic violence, and self-esteem to measure women's autonomy (Kishor and Subaiya 2008; Osamor and Grady 2016). Accordingly, we measured women's autonomy by women's participation in household decision making, attitudes toward wife beating, and whether getting permission to seek medical care was a large problem.

Various studies have shown that women's autonomy is important for better maternal and child health outcomes in health-care decision making. For instance, a study from Nepal found that higher level of women's autonomy was associated with higher use of maternal services (Adhikari 2016). Another study from India also found that women's autonomy was associated with greater use of pregnancy care services, particularly prenatal and postnatal care (Mistry, Galal, and Lu 2009). Other studies have reported non-significant associations between women's participation in decision making and use of antenatal and delivery care services (Becker, Fonseca-Becker, and Schenck-Yglesias 2006; Furuta and Salway 2006).

However, such studies are limited in the context of African countries. In one study conducted using the 2005 Ethiopian DHS, women's participation in household decision making was associated with use of maternal health services (Woldemicael 2009). In another study conducted in the slum areas of Nairobi, Kenya, Fotoso and colleagues found that women's autonomy was significantly associated with use of obstetric health care, although the effect varied with household wealth status (Fotso, Ezeh, and Essendi 2009). Overall, few studies from sub-Saharan Africa have examined the relationship between women's autonomy and reproductive health-care-seeking behavior. The objective of this study, therefore, was

to examine the association between women's autonomy and reproductive health-care-seeking behavior in Ethiopia.

Data and methods

Data source

This study used data from the 2011 Ethiopian Demographic and Health Survey (DHS), which was conducted by the Ethiopian Central Statistical Authority (CSA) and ICF International. The DHS used a two-stage cluster sampling design in which clusters (enumeration areas) were selected at the first stage, followed by selection of households. A complete listing of households was made in each of the selected enumeration areas, and households were randomly selected from the list. All women aged 15–49 years who were available in the selected households at the time of the survey were eligible for participation in the survey. A representative sample of 17,817 households and 17,385 women aged 15–49 years was selected; a total of 16,515 women aged 15–49 years were successfully interviewed, with a response rate of 95%. The survey report and details of the sampling methodology are available from the publisher's website at http://dhsprogram.com/publications/index.cfm.

Study participants

The current study focused on a (weighted) sub-sample of 9,106 married and non-pregnant women of age 15–49 years who provided information on contraceptive use and 7,185 women with a live birth in the five years preceding the survey who provided detailed information on use of antenatal and delivery care services for their most recent pregnancy. The reported sample sizes in this analysis were therefore weighted samples. The survey collected detailed information on background characteristics, fertility, family planning, and maternal health-care behaviors, such as antenatal, delivery, and postnatal care, which were used as explanatory variables in this study. Moreover, information on women's decision-making autonomy and other women's status measures were collected from all married women aged 15–49 years during the survey.

Study variables

The main outcome variables of the study were two measures of women's reproductive health-care-seeking behavior; use of modern contraception and antenatal care use for the most recent birth. In the DHS, women were asked whether they were using contraception, and if so, the methods they were using. Women who gave birth in the five years before the survey were also asked whether they received antenatal care for their most recent birth, how many times

they received such care, and from where they obtained the service. In this case, the outcome measure was any antenatal care use from a health professional, with a dichotomous measure of whether a woman had received any antenatal care from a health professional during her last pregnancy was constructed.

The key explanatory variable of this study, women's autonomy, was measured by women's participation in household decision making, women's attitudes toward wife beating, and whether getting permission to seek medical care was a big problem. The DHS asked several questions on these indicators of autonomy. The variable women's participation in household decision making came from the question "who in your family makes decision about (1) healthcare for yourself, (2) making large household purchases, and (3) visits to family and/or relatives"? Responses were coded as: "respondent" "husband/partner" "respondent and husband/partner jointly" "someone else" "respondent and someone else jointly" "decision not made/not applicable." These responses were first dichotomized to create dummy variables for each of the four decision-making domains. For each domain, the variable was coded as 1 if the wife had any say in that decision and 0 if the wife had no any say. Then a composite index was constructed by grouping women into two categories: women who had any say (alone or jointly) in all three household decisions, indicating a higher level of empowerment, and women who did not have any say in one or "more decisions."

The variable "attitudes toward wife beating" came from the question "Sometimes a husband is annoyed or angered by things that his wife does. In your opinion, is a husband justified in hitting or beating his wife in the following situations: (1) If she goes out without telling him (2) If she neglects the children, (3) If she argues with him (4), if she refuses to have sex with him and (5) if she burns the food?" Responses were coded as: "1" for yes response and "0" for "no." Then a single composite variable "attitude toward wife beating" was constructed by grouping women into two categories: women who agreed to at least one reason for wife beating, indicating a lower level of empowerment, and women who did not agree with all reasons of wife beating, indicating a higher level of autonomy.

Moreover, the DHS asked other questions that assessed women's autonomy in the health-care domain, particularly whether getting permission to go for medical treatment was a big problem or not. In this regard, the DHS asked "When you are sick and want to get medical advice or treatment, is each of the following a big problem or not?" One such question is getting permission to go. Responses to these questions were dichotomized into women who reported that the factor was not a large problem, indicating a higher level of autonomy, and women who reported that the factor is a large problem, indicating a lower level of autonomy. This variable may also indicate women's freedom of movement because asking permission to go

to a health facility shows that women were not deciding by themselves on whether to go for a health facility.

Additional gender-related variables that served as a proxy for empowerment or women's status examined in the study included women's employment, educational status, and exposure to media. The variable exposure to media was constructed from the questions on whether a woman listened to radio and watched television with some frequency. A variable was created from these two questions measuring exposure to media (has exposure to one of the two, both media, or to neither of the two). Socio-demographic variables, such as age, parity, wealth index, and place of residence, were also included to assess the independent associations of the autonomy and women's status variables with the outcomes of interest.

Ethical considerations

The survey was implemented by the CSA of Ethiopia, which is mandated to collect all national data. The study protocol and data collection instruments were reviewed for adherence to ethical standards by the Ethiopian Health and Nutrition Research Institute. All study participants were asked for informed oral consent. Data collectors explained the purpose of the study and that participation in the study was on voluntary basis. Privacy and confidentiality were ensured following ethical requirements of research. The study involved minimal risk for study participants.

Data analysis

Data were analyzed using STATA software version 13 (StataCorp 2009), and both bivariate and multivariate statistical analyses were performed. First, we described the characteristics of the study population and cross-tabulated our dependent variables with the explanatory variables. The explanatory variables were identified through literature review and based on our preliminary analysis of the data. A chi square test was conducted to test the association between the dependent and independent variables, and variables were then retained in the multivariable analysis based on the association at the bivariate level ($p < 0.05$). Multivariate logistic regression analyses were performed to identify the independent associations of explanatory variables with the outcomes of interest, providing Odds ratios (OR) and 95% confidence intervals (CI). We used the Hosmer and Lemeshow test to check for model fit (Hosmer & Lemeshow 1980), and the final model had a better HL chi-square value and p-value. The level of statistical significance was set at 5%. Because the DHS followed a complex survey design to collect the data, we used STATA's survey commands (SVY) to take into account the design by incorporating women's sampling weights and adjusting the standard errors for the cluster sampling of primary sampling units.

Results

The sample of women included in these analyses was all currently married or in union at the time of the survey. The majority had no formal education (66%) and resided in rural areas (81%). About two-fifth had no exposure to any source of media and were not employed at the time of the survey (Table 1). In 2011, almost 54% of women said that they participated in all household decisions; 26% did not approve of wife beating under any circumstances, and 70% suggested that getting permission was not a big problem going for medical care (Figure 1). . Improvements were observed in all three indices of women's autonomy between 2005 and 2011 (Figure 1).

This proportion of women with affirmative responses to the three indices varied with women's socio-demographic characteristics, including women's education, place of residence, wealth index, employment, and exposure to media. Women with a secondary or higher education, women living in urban areas, women from the richest households, women with paid employment, and women with exposure to media were more likely to participate in household decision making, to reject all reasons for wife beating and to say that getting permission to seek medical care was not a big problem. A higher proportion of women with no formal education, rural women, poor, and

Table 1. Percentage of currently married women by affirmative answers to each of the Autonomy Indices according to selected socio-demographic characteristics, Ethiopia 2011 (n = 9,105).

Socio-demographic variables	Participation in decisions	Rejects all reasons for wife beating	Getting permission is not a big problem	No. of women
Educational status				
No education	51.4	19.5	66.7	6,011
Primary	56.1	31.0	72.6	2,459
Secondary and above	82.8	70.5	86.3	635
Residence				
Rural	51.2	20.2	66.5	7,404
Urban	70.8	52.2	83.0	1,702
Wealth index				
Poorest	47.6	16.2	64.9	1,791
Poorer	51.2	18.4	65.8	1,864
Middle	50.2	19.1	64.1	1,865
Richer	54.8	24.5	69.1	1,690
Richest	69.8	51.4	83.7	1,905
Exposure to media				
None	51.1	18.4	65.5	3,419
Radio or TV	52.8	23.9	69.0	2,985
Both radio and TV	62.0	38.3	75.5	2,701
Employment				
Not employed	51.0	24.1	64.2	3,939
Unpaid employment	54.5	18.2	56.2	1,974
Paid employment	59.9	33.6	78.7	3,192
Total	54.9	26.1	69.6	9,106

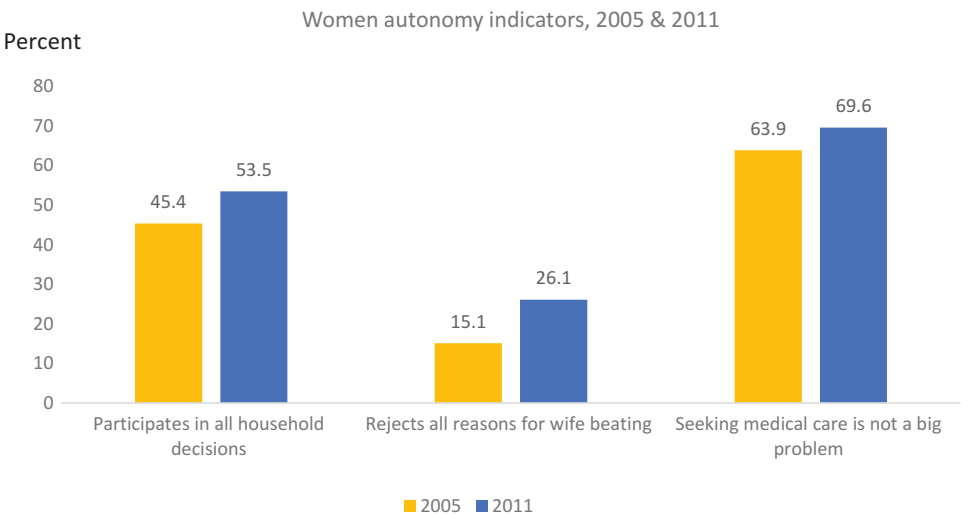

Figure 1. Changes in women's decision-making autonomy between 2005 and 2011.

women with no access to media reported lower participation in household decision making and approved wife beating for different reasons.

Use of reproductive and maternal health services was generally low in Ethiopia: about 32% of married and non-pregnant women were using contraception at the time of the survey; 34% have used antenatal care during their index child pregnancy; and 11% delivered in health facilities (Table 2). The use of reproductive health services varied significantly with participation in decision making, attitudes toward wife beating, and ease of permission to seek medical care. Use of family planning and antenatal care were higher among women who participated in all domestic decisions and among those who rejected wife beating compared to their counterparts. Similarly, use of family planning and antenatal care was higher for women who reported that obtaining permission to go for seeking medical care was not a big problem (Table 2). Moreover, a higher proportion of women with secondary or higher education and with paid employment, urban women, women who had exposure to media, and women in the richest wealth quintile reported using reproductive health services.

Multivariate analysis

Variables were included in the multivariate regression analysis based on their association in the chi-squared analyses (Table 2). Spousal age difference was not significantly associated with use of modern family planning in the chi-squared analysis and was not included. Model I provides the unadjusted odds ratio of the association between modern contraceptive use and the different explanatory variables. The three autonomy variables (participation in decision making, attitudes toward wife beating, and permission to go for medical care)

Table 2. Percent distribution of women of family planning and antenatal care use by selected socio-demographic characteristics, Ethiopia 2011.

Socio-demographic variables	Contraception N	%	P-value	ANC N	%	P-value
Age group, years						
15–19	2,146	28.2	0.002	356	31.6	0.005
20–34	3,632	37.7		4,994	39.4	
35–49	3,327	24.9		1,835	37.5	
Educational status						
No education	6,011	24.8	0.001	4,818	25.1	0.001
Primary	2,459	41.5		2,041	45.4	
Secondary and above	635	67.6		326	89.3	
Residence						
Urban	1,702	56.6	0.001	1,032	76.9	0.001
Rural	7,403	26.7		6,153	26.5	
Wealth index						
Poorest	1,791	13.3	0.001	1,596	16.9	0.001
Poorer	1,864	22.2		1,545	24.1	
Middle	1,854	24.4		1,492	26.9	
Richer	1,690	31.7		1,348	34.6	
Richest	1,905	51.8		1,204	76.0	
Exposure to media						
None	3,419	22.9	0.001	2,927	19.8	0.001
Radio or TV	2,985	32.5		2,352	35.0	
Both radio and TV	2,701	44.2		1,906	53.8	
Employment						
Not employed	3,939	28.4	0.001	3,280	30.6	0.001
Unpaid employment	1,974	28.1		1,544	27.6	
Paid employment	3,192	39.9		2,361	42.1	
Husband-wife age difference						
Same age or younger	483	34.3	0.163	397	38.7	0.355
Husband older by <10 years	5,868	34.3		4,788	33.7	
Husband older by ≥ 10 years	2,754	27.8		2000	32.8	
Participation in decisions						
No	4,110	25.7	0.001	3,398	27.0	0.001
Yes	4,995	37.8		3,787	39.9	
Attitudes toward wife beating						
Accepts any of the reasons	2,380	27.5	0.001	1,637	28.9	0.001
Doesn't accept all reasons	6,725	45.9		5,548	50.1	
Permission is a big problem						
No	2,766	34.1	0.013	2,308	37.0	0.001
Yes	6,339	28.3		4,877	26.9	
Total	9,106	32.3		7185	33.8	

were all significantly associated with modern contraceptive use in this model (Table 3). Moreover, women's greater education, exposure to media, paid employment status, urban place of residence, higher wealth index, and lower numbers of children were associated with use of modern contraception.

Two of the three autonomy variables remained statistically significant in the full multivariate model (model II) containing socio-demographic controls (age, wealth, place of residence, and number of living children) and women's status variables (education, exposure to media, and employment). The odds ratios for using modern contraception were higher (OR, 1.37, 95% CI:1.17–1.61) among women who participated in all household decisions and who

Table 3. Odds ratios from logistic regressions for factors associated with use of modern contraception among married women, Ethiopia 2011 (n = 9,106).

Variables	Model I, unadjusted OR (95% CI)	Model II, adjusted aOR (95% CI)
Autonomy variables		
Participation in decision making	1.75 (1.52–2.01)***	1.37 (1.17–1.61)**
Wife beating not acceptable	2.23 (1.87–2.65)***	1.40 (1.13–1.75)**
Getting permission not a big problem	1.31 (1.09-. 1.57)*	0.95 (0.79–1.15)
Exposure to media (ref = none)		
Radio only	1.62 (1.30–2.02)***	1.18 (0.92–1.50)
Radio and TV	2.67 (2.17–3.29)***	1.28 (1.01–1.59)*
Education (ref = no education)		
Primary education	2.15 (1.79–2.58)***	1.41 (1.16–1.71)**
Secondary and above education	6.3 (4.80–8.28)***	1.99 (1.48–2.70)**
Employment (ref = not employed)		
Employed not for cash	0.99 (0.79–1.24)	1.34 (1.07–1.68)*
Employed for cash	1.68 (1.40–2.01)*	1.41 (1.17–1.69)**
Age (ref = 15–24 years), years		
25–34	0.97 (0.81–1.16)	0.81 (0.64–1.01)
35–49	0.56 (0.46–0.68)	0.51 (0.38–0.66)
Residence (ref = rural)		
Urban	3.64 (2.86–4.57)***	1.42 (1.06–1.89)**
Wealth (ref = poorest)		
Poorer	1.84 (1.42–2.38)**	1.76 (1.35–2.28)**
Middle	2.06 (1.58–2.68)**	1.94 (1.47–2.58)**
Richer	3.09 (2.28–4.18)**	2.59 (1.90–3.53)**
Richest	7.17 (5.43–9.47)**	3.28 (2.28–4.71)
Number of living children (ref = none)		
1–2	1.61 (1.22–2.13)**	1.99 (1.48–2.68)**
3–4	1.21 (0.90–1.62)	2.14 (1.54–2.98)**
5^{+} living children	0.78 (0.59–1.02)	2.02 (1.43–2.83)**

*p < 0.05 **p < 0.01 ***p < 0.001

disapproved of wife beating (OR, 1.40, 95% CI:1.13–1.75) compared to their counterparts. Other variables indicating women's status, such as education, exposure to media, and employment, were strongly associated with use of modern contraceptives in multivariate models. The odds of ever using modern contraception were higher for women with secondary and above education, for women with paid employment, and for women with an exposure to media. Moreover, socio-demographic variables, such as urban residence, wealth, and number of living children, were associated with ever use of modern contraception. The odds of ever using contraception were higher for urban women, as compared to rural women and for women from wealthy households as compared to those from poor households. Similarly, the odds of ever using modern contraception were high among women who had children compared to those who did not (Table 3).

Model I provides the unadjusted odds ratio for the association between use of antenatal care and the different explanatory variables. In this unadjusted model, women's participation in decision making, attitudes toward wife beating, attitudes toward refusing sex with husband, and permission to get medical help were all significantly positively associated with use of antenatal

Table 4. Odds ratios from logistic regressions for factors associated with use of antenatal care among women with a birth in last five years, Ethiopia 2011 (n = 7,185).

Variables	Model I, unadjusted OR (95% CI)	Model II, adjusted aOR (95% CI)
Autonomy variables		
Participation in decision making	1.79 (1.49–2.16)***	1.36 (1.13–1.64)**
Wife beating not acceptable	2.47 (2.05–2.98)***	1.34 (1.12–1.61)**
Permission is not a big problem	1.59 (1.28–1.97)***	1.09 (0.85–1.39)
Exposure to media (ref = none)		
Radio	2.18 (1.82–2.61)	1.60 (1.33–1.93)**
Radio and TV	4.73 (3.78–5.92)	2.12 (1.66–2.70)**
Education (ref = no education)		
Primary education	2.49 (2.05–3.02)***	1.42 (1.16–1.75)**
Secondary and above education	25.03 (14.99–41.78)***	3.27 (1.92–5.58)**
Employment (ref = not employed)		
Employed not for cash	0.86 (0.69–1.08)	1.23 (0.98–1.53)
Employed for cash	1.65 (1.37–1.98)**	1.39 (1.44–1.68)**
Wealth (rc = poorest)		
Poor	1.56 (1.21–2.01)**	1.41 (1.08–1.84)*
Middle	1.81 (1.39–2.35)**	1.62 (1.22–2.14)**
Richer	2.59 (1.95–3.45)**	1.79 (1.32–2.44)***
Richest	15.55 (10.90–22.19)**	4.22 (2.75–6.48)***
Age at birth (ref = < 20 years), years		
20–34 years	1.21 (0.84–1.75)	1.12 (0.75-.1.68)**
> 35 years	0.86 (0.59–1.25)	1.05 (0.69–1.60)**
Residence (ref = rural)		
Urban residence	9.25 (6.46–13.23)	2.02 (1.33–3.07)**
Distance from facility	2.58 (2.12–3.13)	1.32 (1.08–1.62)**
Distance is a large problem	1.24 (0.59–2.59)	1.29 (0.46–3.65)
Number of children (ref = none)		
1–2	0.77 (0.37–1.60)	0.98 (0.34–2.82)
3–4	0.62 (0.30–1.29)	0.96 (0.33–2.81)
5+	0.68 (0.36–1.29)	1.04 (0.42–2.56)

*p < 0.05 ** p < 0.01 *** p < 0.001.

care from a health professional (Table 4). Two of these variables, attitudes toward refusing sex with husband and ease of permission to seek medical help, were significantly associated with use of antenatal care from a health professional after controlling for socio-demographic factors (age, residence, parity, and wealth) and women's status variables (education, employment, exposure to media, and spousal age difference). The odds of receiving antenatal care from a health professional were 34% higher for women who said permission to go for medical care was not a large problem as compared to women who said getting permission for medical help was a large problem. Women who approved all reasons for refusing sex with husband were more likely to use ANC from a health professional in contrast to those who disapproved refusing sex with husband.

Other indicators of women's status, such as education, exposure to media, and employment, were important factors related to use of antenatal care in the full model. The odds of receiving ANC from a health professional were higher for women with secondary and above education, for women with paid employment,

and for women with exposure to media as compared to women with no formal education, women not employed, and women with no exposure to media, respectively. Among socio-demographic variables, wealth and place of residence were associated with use of antenatal care from a health professional during the most recent birth. Urban women were more likely to have used antenatal care as compared to rural women. The odds of using antenatal care increased as wealth increased. We also considered the effect of distance, a proximate determinant to maternal health-care use, and found that women who reported distance to health facility was not a problem were nearly 57% more likely to use antenatal care than women who reported distance to health facility was a large problem (Table 4).

Discussion

In this study, we assessed the relations of women's autonomy to the reproductive health-care-seeking behavior of women in Ethiopia. Two measures of women's reproductive health-care-seeking behavior — use of modern contraception and antenatal care use for the most recent birth — were considered. Women's autonomy was measured by women's participation in domestic decision making, attitudes toward wife beating, and whether seeking permission to get medical help was a big problem. Our results indicated that in Ethiopia, both the level of women's autonomy as measured by these indicators and use of reproductive health care were low.

Findings of this study revealed important relationships between the outcomes of interest and women's autonomy. First, a statistically significant association was found between women's autonomy variables and use of modern contraception, as well as antenatal care use. Two of the three autonomy variables (participation in decision making and attitudes toward wife beating) were significantly associated with use of modern contraception and antenatal care use after adjusting for socio-demographic variables. This finding is consistent with the findings of several previous studies that reported strong association between women's autonomy, particularly women's participation in decision making and contraceptive use as well as maternal health care (Adhikari 2016; Becker, Fonseca-Becker, and Schenck-Yglesias 2006; Fotso, Ezeh, and Essendi 2009; Woldemicael and Tenkorang 2009). Our findings indicate that direct measures of women's autonomy such as participation in decision making are important determinants of reproductive health-care-seeking behavior.

Moreover, conventional measures of women's status — women's education, paid employment, and exposure to media — remained important factors associated with use of reproductive health care. Women's level of education showed a particularly strong association with both use of modern contraception and antenatal care. This finding confirms findings of other studies in developing countries (Furuta and Salway 2006; Mistry, Galal, and Lu 2009). Our

findings also showed that women's paid employment had a strong association with their reproductive health-care-seeking behavior. Women who had paid employment may be exposed to information, knowledge, and attitudes about modern health care at their workplaces or through media. This relationship between paid employment and use of health care indicates that interventions aimed at improving women's employment opportunities may also generate health-care benefits. Increasing women's exposure to media is also important to provide information related to healthy behavior and health-care services.

The fact that women in urban areas were more likely than rural women to receive reproductive health care shows that health service provision in Ethiopia still has an urban bias. Infrastructures, such as that of health and education, are highly concentrated in urban areas, although more than 80% of the population resides in rural areas. In this regard, the initiative by the government to reach the rural population through Health Extension Program needs to be strengthened to bridge the huge gap between rural and urban areas. Moreover, the finding of a strong association between women's perception that distance to a health facility is a problem and their use of antenatal care suggests that access to health services remains a major barrier in delivery of maternal health services in Ethiopia.

Limitations of the study

Despite the findings and the contribution it makes to the reproductive health literature, this study had several limitations. As a cross-sectional survey, the data potentially suffer from both recall bias and reporting bias. Information collected on antenatal care refers to a pregnancy that happened in the five years before the survey and was likely affected by recall bias. Some information, such as age of the respondent and age at marriage, referred to past events and may have been affected by reporting and recall bias. Similarly, information collected on women's empowerment were susceptible to recall bias. More importantly, the study lacks triangulation of data in terms of methods and data source to increase validity and credibility of findings. Finally, the cross-sectional design prohibits assessment of the temporality and thus potentially causal relation of variables and does not permit ruling out the possibility of reverse causality.

Conclusion

The findings highlight the need for initiatives to improve women's position in Ethiopia, to attain both gender equality and to promote women's reproductive health. Improving women's education and employment status can play a dual role in enhancing both women's autonomy and health-care-seeking behavior. Disparities in the use of reproductive health-care services by rural-urban residence and wealth should also be addressed by increasing the rural and

poor sections of the society's access to basic health services. We also recommend additional research using stronger design and a qualitative study to assess the effects of women's autonomy on reproductive health-care-seeking behavior, recognizing that the data in our study is from a cross-sectional survey and thus can establish associations but cannot establish causality.

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