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RESEARCH ARTICLE

The practice of polygyny on the utilisation of reproductive health services among married women in Ghana

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Abstract

While the practice of polygyny is common in Ghana, little is known about its impact on the use of reproductive health services. The aim of this study was to assess the relationship between polygynous marriage and the utilisation of skilled antenatal care (ANC), assisted skilled birth, and modern contraceptive services among married women in Ghana. Secondary data from the 2017 Ghana Maternal Health Survey were used for this study. The study included a weighted sample of 9,098 married women aged 15–49 years. We used multivariable logistic regression models to assess the association between polygyny and each outcome variables. Sensitivity analysis was conducted to assess the dose–response relationship between polygyny and each outcome variable. The prevalence of eight or more ANC contacts, assisted skilled births, and use of modern contraception were 47.0%, 81.4%, and 25.4%, respectively. The prevalence of women in polygynous marriages was 15.3%. Compared to monogynous marriage, polygynous marriage was associated with 19% lower odds of having eight plus ANC contacts (adjusted odds ratio [aOR] 0.81, 95% CI: 0.69, 0.96), 25% lower odds of having assisted skilled birth (aOR 0.75, 95% CI: 0.63, 0.89), and 19% lower odds of modern contraceptive utilisation (aOR 0.81, 95% CI: 0.66, 0.99). Interventions on reproductive health may need to prioritise women in polygynous marriages in order to improve the utilisation of skilled ANC, assisted skilled birth, and modern contraceptive services.

Introduction

While high-income countries have made great strides towards reproductive health, there remains a huge challenge in improving reproductive health in low-and-middle-income countries (LMICs) (World Health Organization, 2017). The WHO estimated that the lifetime risk of a woman dying from maternal-related causes is about 130 times in LMICs compared to a woman in a high-income country (World Health Organization, 2017). Evidence-based interventions capable of improving reproductive health in LMICs include the uptake of modern contraceptives and the utilisation of skilled maternal health services (Stover and Ross, 2010; World Health Organization, 2018, 2019).

In spite of the positive impact of skilled antenatal care (ANC), assisted skilled birth, and modern contraceptive services on reproductive health, the use of these services are low in many LMICs. It

was recently reported that the coverage of the 2016 WHO recommended eight plus ANC contacts was 35.6% across LMICs, with some countries recording a coverage below 5% (Apanga and Kumbeni, 2021). The use of assisted skilled birth and uptake of modern contraception among women were also reported as 66% and 42%, respectively, in LMICs (Adde et al., 2020; Ibitoye et al., 2022). In Ghana, while the prevalence of eight plus ANC contacts was 43% (Anaba and Afaya, 2022), assisted skilled births and modern contraceptive usage among women of reproductive age were reported as 79% and 25%, respectively (Ghana Statistical Service, 2018).

Several studies have reported the association between sociodemographic factors and use of reproductive health services (Apanga et al., 2020; Apanga and Kumbeni, 2021; Kumbeni and Apanga, 2021). Marital status has been found to be associated with the utilisation of skilled ANC, assisted skilled birth, and modern contraceptive services, with married women more likely to use such services compared to unmarried women (Sakeah et al., 2017; Apanga et al., 2020; Ameyaw et al., 2021). Polygyny (i.e., a practice where a man marries more than one wife) may have negative effects on reproductive health of women. For instance, a study in Kenya and an analysis of Demographic and Health Survey (DHS) data in selected West African countries suggest that polygynous marriages were associated with lower utilisation of modern contraceptives when compared to monogamous marriages (Abdi et al., 2020; Millogo et al., 2022). Furthermore, utilisation of skilled ANC and assisted skilled birth services has also been reported to be lower among women in polygynous marriage compared to monogamous one (Ahinkorah et al., 2021a; Zhang et al., 2022).

The pathways for accessing reproductive health services among women in polygynous marriages remain unclear, but available literature in sub-Saharan Africa (SSA) suggest that there may be competition among cowives to give birth in polygynous marriages, and this may lead to limited usage of contraception among such marriages (Abdi et al., 2020). Prior studies also report that women in polygynous marriages may have lower utilisation of assisted skilled birth because of culturally competitive behaviours such as giving birth at home, which is a show of strength and faithfulness to their husband (Yaya et al., 2018; Alatinga et al., 2021). Bove and Valeggia (2008) also postulated that sharing of limited resources among women in polygynous marriages may be responsible for their lower utilisation of skilled ANC and assisted skilled birth. Despite the potential consequences of polygynous marriage on the utilisation of reproductive health services, there is little literature to estimate the impact of polygyny on reproductive health of women in SSA, where polygyny is said to be prevalent (Ahinkorah et al., 2021a, Kramer, 2020; Ameyaw et al., 2021; Millogo et al., 2022; Zhang et al., 2022).

In Ghana, an estimated 16% of married couples are in polygynous marriages (Millogo et al., 2022); however, it is unclear if polygyny is associated with the utilisation of skilled ANC, assisted skilled birth, and modern contraceptive services. We hypothesised that polygyny might negatively influence the uptake of skilled ANC, assisted skilled birth, and modern contraceptive services among women in Ghana. Therefore, the aim of this study was to assess the relationship between polygynous marriage and the use of skilled ANC, assisted skilled birth, and modern contraceptive services among married women of reproductive age in Ghana.

Materials and methods

Study setting

Ghana is located in West Africa on the Gulf of Guinea. It shares boundaries with Côte d'Ivoire, to the west, Burkina Faso, to the north, and Togo lies on the east. Ghana has a total population of 30.8 million people, of which about seven million of these people are women in their reproductive age (Ghana Statistical Service, 2022). Ghana has 16 administrative regions, 5 teaching hospitals, 10 regional hospitals, and several district hospitals and clinics/health centres across the country. Ghana runs a national health insurance scheme which provides free maternal health care for all

women living in the country (Blanchet et al., 2012). Recent analysis suggest that an estimated 16% of married couples in Ghana are in polygynous marriages (Millogo et al., 2022).

Data sources, study design, and study population

Data were extracted from the 2017 Ghana Maternal Health Survey (GMHS). The 2017 GMHS was a cross-sectional survey conducted for only women in their reproduction age (i.e., 15–49 years) who had a live or stillbirth in the last 5 years prior to the survey. Multiple-stage sampling was employed in the survey with the first stage centred on the selection of enumeration areas, while the second stage involved systematic random sampling of households from the enumeration areas. The survey had a response rate of 99% representing 25,062 women. However, our analysis was restricted to a weighted sample of 9,098 married women aged 15–49 years. Therefore, we excluded women who were single, cohabiting, divorced, separated, or widowed from our analysis. Women who were pregnant at the time of the GMHS survey were also excluded from the contraception analysis.

The 2017 GMHS is a national representative data specially designed by DHS to assess maternal and child health indicators in Ghana. Hence, these data were well suited for our study given the study objectives.

Outcome variables

We assessed three outcome variables as indicators of reproductive health services. These variables were number of ANC contacts, assisted skilled birth, and modern contraceptive use. The number of ANC contacts was estimated as the number of times a pregnant women had contacts with a skilled health provider from conception to birth, and was categorised into 0–7 and ≥ 8 contacts. We categorised this variable based on the 2016 WHO recommendation of at least eight ANC contacts required for a positive pregnancy experience (World Health Organization, 2018). Assisted skilled birth was categorised into skilled birth provider and unskilled birth provider. Skilled birth provider referred to delivery services rendered by a nurse/midwife/doctor, while such services were considered unskilled if they were provided by a traditional birth attendant/relative. Our categorisation of assisted skilled birth was based on the WHO definition (World Health Organization, 2023). The ANC contacts and assisted birth provider measures were assessed for the recent pregnancy and childbirth, respectively, prior to the 2017 GMHS survey. Modern contraceptive use was defined as women who used any of the following methods: sterilisation, intrauterine devices, implants, injectables, pills, condoms, foam/jelly, diaphragm, and emergency contraception. The variable was dichotomised as 'yes' for women who were using any of the above methods at the time of the survey and 'no' for those who were not using any of these methods.

Predictor variable

The predictor of interest was marriage type. Marriage type was categorised into monogamous and polygynous. Monogamous marriage referred to a marriage where the husband had only one wife, whereas polygynous marriage was when the husband had two or more wives (i.e., one or more wives besides the index woman in the study).

Covariates

The covariates in our study included; age category, parity, place of residence, education, wealth index, health insurance coverage, and access to media. The covariates were categorised as follows: age category (15–19, 20–34, and 35–49 years); parity (nulliparous, primiparous, and multiparous); place of residence (urban and rural); education (no formal education, primary education,

secondary education, and higher education); health insurance coverage (yes and no); and access to media (yes and no). Women who had access to either newspapers or radio or television at least once a week were considered as having access to media. Wealth index was generated using the principal component analysis on household ownership of selected assets, such as television and bicycles, and materials used for housing construction and types of water access and sanitation facilities (Poirier et al., 2020). The DHS wealth index categorises household wealth into quintiles (poorest, poor, middle, rich, and richest). We recoded the wealth index into three categories (poor = poorest and poor; middle = middle; rich = rich and richest). This categorisation has been reported in prior literature (Kumbeni et al., 2023).

Statistical analysis

Descriptive statistics of the study population are presented below using frequencies and percentages (Table 1). We used three separate multivariable logistic regression models to assess the association between our predictor and each of the outcome variables, while adjusting for covariates in each model.

In the first model (model I), we assessed the association between marriage type and number of ANC contacts. In the second model (model II), we assessed the relationship between marriage type and assisted skilled birth. In the third model (model III), we assessed the association between marriage type and modern contraceptive use. We controlled for age category, parity, place of residence, education, wealth index, health insurance coverage, and access to media in models I and II, while adding number of ANC contacts and assisted birth provider in addition to these covariates in model III. Variable selection was based on prior literature and their availability in the GMHS dataset (Mugo et al., 2015; Ahinkorah et al., 2021b; Kumbeni and Apanga, 2021). A p-value < 0.05 was considered as the cut-off point for statistical significance.

We conducted sensitivity analysis to assess the relationship between the number of wives in marriage (i.e., a wife, two wives, and three or more wives) and each of our outcome variables to see if there was a dose–response relationship. We compared the prevalence of eight plus ANC contacts among women in two wives marriage type (i.e., one additional wife besides the index woman) and women in three or more wives marriage type (i.e., two or more additional wives besides the index woman) to women who were in one wife marriage type (i.e., monogamous marriage) as the reference category. We also compared the prevalence of assisted skilled birth and the prevalence of modern contraceptive use with the same categorisation as above. To understand the relative magnitude of the effect of polygynous marriages on the outcomes of interest, we calculated the average marginal effects following each of the three multivariable models.

We also tested for multicollinearity using variance inflation factor (VIF) in each of the models to ensure that they were no issues of collinearity. We accounted for clustering, stratification, and sampling weights in all our analyses. Stata/MP 17.0 (College Station, Texas) was used for the analyses.

Results

Characteristics of study participants

The results included a total weighted sample of 9,098 married women. The prevalence of eight plus ANC contacts was 47.0%, assisted skilled birth 81.4%, and modern contraceptive use 25.4%. Of the women sampled, 15.3% were in polygamous marriage, while 84.7% reported being in monogamous marriages. Majority of the women were aged 35–49 years (52.2%) and multiparous (81.5%). Appropriately, 47% of women were in the rich wealth index and 55% had valid health insurance coverage (Table 1).

Table 1. Characteristics of study participants

Characteristic	N (%)	≥ 8 ANC contacts %	Assisted skilled birth %	Modern contraceptive use %
Overall	9,098	47.0	81.4	25.4
Marriage type				
Monogamous	7707 (84.7)	49.7	84.4	26.1
Polygynous	1392 (15.3)	31.4	64.4	21.3
Age (years)				
15–19	88 (1.0)	19.9	74.7	22.0
20–34	4262 (46.8)	47.2	82.0	29.0
35–49	4748 (52.2)	47.2	80.7	22.6
Parity				
Nulliparous	458 (5.0)	40.9	96.2	4.0
Primiparous	1230 (13.5)	54.8	90.4	16.0
Multiparous	7411 (81.5)	45.6	79.8	27.9
Place of residence				
Urban	4780 (52.5)	57.5	93.3	22.7
Rural	4319 (47.5)	36.5	69.6	28.3
Education				
No formal	2875 (31.6)	30.8	63.7	23.0
Primary	1885 (20.7)	40.7	79.1	26.2
Secondary	3495 (38.4)	55.0	91.6	27.2
Tertiary	844 (9.3)	75.6	99.2	24.1
Wealth index				
Poor	3336 (36.6)	28.4	64.3	26.7
Middle	1452 (16.0)	43.4	83.7	30.6
Rich	4311 (47.4)	65.3	96.4	22.6
Valid health insured				
Yes	4985 (54.8)	49.5	84.9	24.3
No	4113 (45.2)	43.5	76.7	26.6
Access to media				
Yes	1874 (20.6)	53.4	87.8	25.7
No	7224 (79.4)	45.5	79.9	25.3

Note: N = sample size; ANC = antenatal care; % = percent.

The association between polygynous marriage and ANC contacts, assisted skilled birth, and modern contraceptive use

In model I, we found that polygynous marriage was associated with 19% (adjusted odds ratio [aOR] 0.81, 95% CI: 0.69, 0.96) lower odds of having eight plus ANC contacts compared to monogamous marriage. Also, women aged 20–34 or 35–49 years, had secondary or tertiary

Table 2. The association between polygynous marriage and ANC contacts, assisted skilled birth, and modern contraceptive use

	Number of ANC contacts (model I)	Assisted skilled birth (model II)	Modern contraceptive use (model III)
	aOR (95% CI)	aOR (95% CI)	aOR (95% CI)
Predictor of interest			
Marriage type			
Monogamous	Ref.	Ref.	Ref.
Polygynous	0.81 (0.69, 0.96)*	0.75 (0.63, 0.89)*	0.81 (0.66, 0.99)*
Potential confounders			
Age (years)			
15–19	Ref.	Ref.	Ref.
20–34	2.61 (1.24, 5.45)*	1.37 (0.64, 2.90)	0.95 (0.47, 1.94)
35–49	3.03 (1.44, 6.41)*	1.69 (0.77, 3.71)	0.80 (0.39, 1.64)
Parity			
Nulliparous	Ref.	Ref.	Ref.
Primiparous	1.79 (0.44, 7.16)	0.37 (0.08, 1.71)	15.32 (1.93, 121.61)*
Multiparous	1.55 (0.39, 6.18)	0.22 (0.05, 1.04)	29.00 (3.67, 229.00)*
Place of residence			
Urban	Ref.	Ref.	Ref.
Rural	1.00 (0.82, 1.22)	0.47 (0.35, 0.63)*	1.32 (1.09, 1.62)*
Education			
No formal	Ref.	Ref.	Ref.
Primary	1.14 (0.94, 1.38)	1.52 (1.20, 1.93)*	1.40 (1.12, 1.74)*
Secondary	1.50 (1.25, 1.80)*	2.67 (2.00, 3.55)*	1.29 (1.08, 1.55)*
Tertiary	2.67 (1.99, 3.58)*	12.27 (4.03, 37.33)*	1.19 (0.85, 1.67)
Wealth index			
Poor	Ref.	Ref.	Ref.
Middle	1.64 (1.31, 2.07)*	1.52 (1.13, 2.04)*	1.22 (0.98, 1.52)
Rich	3.24 (2.63, 3.98)*	4.40 (3.00, 6.44)*	0.88 (0.69, 1.11)
Valid health insured			
Yes	Ref.	Ref.	Ref.
No	1.04 (0.90, 1.21)	1.41 (1.17, 1.68)*	0.81 (0.69, 0.94)*
Access to media			
Yes	Ref.	Ref.	Ref.
No	1.13 (0.95, 1.34)	1.35 (0.99, 1.83)	0.99 (0.81, 1.22)
Number of ANC visits			
0-7			Ref.
≥ 8			1.04 (0.89, 1.22)

(*Continued*)

Table 2. (*Continued*)

	Number of ANC contacts (model I)	Assisted skilled birth (model II)	Modern contraceptive use (model III)
	aOR (95% CI)	aOR (95% CI)	aOR (95% CI)
Assisted birth provider			
Unskilled			Ref.
Skilled			1.48 (1.21, 1.82)*

ANC = antenatal care; aOR = adjusted odds ratio; CI = confidence interval; Ref. = reference category.
*p-Value < 0.05.

education, were in the middle or rich wealth index, had higher odds of attaining eight plus ANC contacts compared to women aged 15–19 years, had no formal education, and were in the poor wealth index (Table 2).

In the second model, women in polygynous marriage had 25% (aOR 0.75, 95% CI: 0.63, 0.89) lower odds of having assisted skilled birth compared to those in monogamous marriages. Women in rural area also had lower odds of having assisted skilled birth compared to those in urban areas. Primary, secondary, and tertiary education were associated with higher use of assisted skilled birth compared to no formal education, while women in the middle and rich wealth index had higher odds of using assisted skilled birth compared to those in the poor wealth index. Having a valid health insurance was also associated with the use of assisted skilled birth (Table 2).

Our third model also found that polygynous marriage was associated with 19% (aOR 0.81, 95% CI: 0.66, 0.99) lower odds of using modern contraception compared to monogamous marriage. Multiparous and primiparous women had higher odds of using modern contraception compared to nulliparous women, and women in rural area also had higher odds of using modern contraption compared those in urban area. Women with secondary and tertiary education were more likely to use modern contraception compared to those with no formal education, whereas those with a valid health insurance were less likely to use modern contraception (Table 2).

Our sensitivity analysis showed that women in two wives marriage type had 18% lower odds of attaining eight plus ANC contacts compared to women in one wife marriage type (aOR 0.82, 95% CI: 0.69, 0.98). Women in three or more wives marriage type also had 25% lower odds of attaining eight plus ANC contacts compared to women in one wife marriage type, though this was not statistically significant (aOR 0.75, 95% CI: 0.50, 1.14) (Supplementary Table 1). Additionally, women in two wives marriage type and three or more wives marriage type had 23% (aOR 0.77, 95% CI: 0.64, 0.91) and 35% (aOR 0.65, 95% CI: 0.44, 0.96), respectively, lower odds of using assisted skilled birth compared to women in one wife marriage type (Supplementary Table 2). Furthermore, the sensitivity analysis revealed that women in two wives marriage type and women in three or more wives marriage type had 18% (aOR 0.82, 95% CI: 0.67, 1.01) and 29% (aOR 0.71, 95% CI: 0.42, 1.20), respectively, lower odds of using modern contraceptives compared to women in one wife marriage type, but these estimates were not statistically significant (Supplementary Table 3).

The adjusted average marginal effects also showed that women in polygynous marriage were significantly less likely to attain eight plus ANC contacts by an adjusted 4.36 (95% CI: −8.02, −0.70) percentage points (Supplementary Table 4). Similarly, polygynous marriage was associated with 3.60 (95% CI: −5.82, −1.37) percentage points lower with the use of assisted skilled birth (Supplementary Table 5). The use of modern contraception among women in polygynous marriage was also lowered by 4.20 (95% CI: −8.10, −0.31) percentage points (Supplementary Table 6).

Discussion

This study examined the practice of polygynous marriage on the utilisation of skilled ANC, assisted skilled birth, and modern contraceptive uptake among married women of reproductive age in Ghana. Our analysis showed that approximately one out of two women attained eight plus ANC contacts, eight out of 10 women had their deliveries conducted by skilled birth providers, and one out of four women were using modern contraceptives. We also found that more than 1 out of 10 women were in polygynous marriages. Polygynous marriage was found to be associated with lower utilisation of skilled ANC, assisted skilled birth, and uptake of modern contraceptive services.

The prevalence of women who attained eight plus ANC contacts in this study was 47.0%. This prevalence is higher compared to other previous studies in Ghana (Apanga and Kumbeni, 2021; Kumbeni et al., 2021; Anaba and Afaya, 2022). For example, Kumbeni et al. (2021) reported the prevalence of eight plus ANC contacts as 31.2%, while Anaba and Afaya (2022) in their study reported a prevalence of 43%. Our study also found that women who had their deliveries by skilled birth providers were 81.4%, and this is slightly higher than the 79% reported by the recent GMHS (Ghana Statistical Service, 2018). While our study was conducted among married women, estimates from previous studies were not limited to only married women. Evidence suggest that married women are more likely to have higher utilisation of ANC services (Sakeah et al., 2017) and have assisted skilled birth (Ameyaw et al., 2021), compared to unmarried women. Furthermore, the prevalence of modern contraceptive use was 25.4%. This is higher when compared to the 22.2% reported among married women in Ghana (Tesema et al., 2022). The higher prevalence in our study may be due to the differences in data collection periods and a reflection of improved uptake of modern contraceptives in Ghana.

Our analysis also showed that the prevalence of women in polygynous marriage in Ghana was 15.3%. Recent demographic and health surveys have reported higher prevalence of polygyny in many West African countries compared to Ghana (Millogo et al., 2022). The prevalence of polygyny was 29% in Cote d'ivoire, 33% in Togo, 36% in Nigeria, 39% in Benin, 42% in Burkina Faso, and 43% in Guinea (Millogo et al., 2022). The variations in the prevalence of polygyny may be due to differences in religious and sociocultural beliefs. For example, Islam permits polygyny under certain circumstance and a man may marry up to four wives (Kramer, 2020). Therefore, polygyny is more prevalent in countries with a higher Muslim population (Kramer, 2020). In Ghana, more than 70% of the population are Christians (Ghana Statistical Service, 2015), and this might explain why the practice of polygyny is not as prevalent as in other West African countries.

We found that women in polygynous marriages were less likely to attain eight plus ANC contacts compared to those in monogamous marriages. An analysis of pooled DHS data for women aged 15–49 years of four African countries (Nigeria, Mali, Guinea, and Zambia) reported similar findings (Ahinkorah et al., 2021a). The WHO revised its ANC policy in 2016 from four plus visits to eight plus contacts. This was to ensure that pregnant women have a positive pregnancy experience as this is associated with lower perinatal morbidity and mortality (World Health Organization, 2018). The current finding in our study suggests that many women in polygynous marriages may not be benefiting from this initiative as they are less likely to meet the recommended eight plus ANC visits. Women in polygynous marriages may not be meeting the eight plus ANC contacts because of limited resources, which has to be shared among cowives (Bove and Valeggia, 2008). Although ANC services are free under Ghana's free maternal healthcare policy, indirect costs such as transportation to and from the health facility, food, and sometimes out of pocket payments would usually have to be catered for by the pregnant woman (Ghana Statistical Service, 2018; Kumbeni et al., 2023). This may likely prevent women from attaining eight plus ANC contacts in polygynous marriages compared to their peers in monogamous marriages. Furthermore, polygynous marriages are more prevalent in rural areas in Ghana where access to ANC services are limited (Lawson and Gibson, 2018; Adam et al., 2021), and this might also explain why such women were less likely to attain eight plus ANC contacts.

The study further showed that women in polygynous marriages had less utilisation of assisted skilled birth compared to women in monogamous marriages. This finding is in line with similar findings in Senegal, where women in polygynous marriages were more likely to have home delivery with the assistance of traditional birth attendants or relatives (Faye et al., 2011). In some polygynous practices, pregnant women may be encouraged to give birth at home in order to prove they were faithful to their husbands (Alatinga et al., 2021). Beliefs of privacy have also compelled such women to have their deliveries conducted at home usually by relatives or traditional birth attendants (Faye et al., 2011; Alatinga et al., 2021). Another reason could be that polygynous marriages are associated with lower levels of education among the spouses (Bove and Valeggia, 2008; Mabaso et al., 2018; Damtie et al., 2021), and lower educational attainment is associated with less utilisation of skilled birth providers services (Amponsah et al., 2021). In addition, polygynous marriages are more prevalent in rural areas in Ghana, and the use of assisted skilled birth services is limited in such areas (Lawson and Gibson, 2018); Adam et al., 2021. Furthermore, women who deliver at health facilities are thought of as being weak in some cultures. This encourages women to deliver at home as a show of strength, especially in the context spousal rivalry (Yaya et al., 2018).

We also found lower utilisation of modern contraceptives among women in polygynous marriages compared to those in monogynous marriages. While a previous study in Nigeria found no statistically significant association between monogamy and use of contraception (Audu et al., 2007), our finding is corroborated by a pooled analysis across 10 countries in West Africa, including Ghana (Millogo et al., 2022). Whereas the current study and that of Millogo and colleagues were conducted using nationally representative data from DHS surveys, the study in Nigeria used a cross-sectional sample, which was not nationally representative. This might have accounted for the differences in the findings. Our finding may be related to competition for fertility among cowives, as culturally, younger wives may have a greater desire to enhance their status by giving birth to more children than older wives (Abdi et al., 2020). Furthermore, the competition for fertility between cowives may intensify when the women are more directly dependent on the man for emotional fulfilment or access to resources (Abdi et al., 2020). It may also be because women in polygynous marriages have less autonomy and may find it challenging to negotiate for access to modern contraceptive services (Bove and Valeggia, 2008).

Our sensitivity analysis also demonstrated that the greater the number of wives in a marriage, the less likelihood that the women will utilise reproductive health services. Though some of the estimates of our sensitivity analysis were not statistically significant, all of the estimates were in a direction that showed that the higher the number of wives in a polygynous marriage, a woman in such a marriage had a lower odds of utilising skilled ANC service, assisted skilled birth and modern contraceptive services. A plausible reason for this finding is that the greater the number of wives in a marriage, the more there is competition for the use of scarce resources (Abdi et al., 2020). Another possible explanation for our finding might also be competition for emotional satisfaction from the husband and less autonomy for such women (Bove and Valeggia, 2008; Abdi et al., 2020).

The findings from this study have several policy implications on reproductive health service utilisation for women in polygynous marriages in Ghana. There is currently no policy in Ghana to cater for the special reproductive healthcare needs of women in polygynous marriages. It is important to recognise the prevalence of polygyny in Ghana, particularly in the context of it being a predictor of the utilisation of reproductive health services. This calls for policymakers to prioritise marriage type in their standardised data collection tools as well as stratifying indicators of health service utilisation by marriage type. We believe this would be an opportunity for providers of reproductive health service to identify women in polygynous marriages and provide them with their health needs, including quality family planning and maternal health counselling, and male partner engagement services.

The study had strengths and limitations. This is the first study to assess the role of polygyny on skilled ANC, assisted skilled birth, and modern contraceptive use among married women in

Ghana. We also used a nationally representative dataset which allows for our findings to be generalisable within Ghana. However, causality cannot be inferred from this study because a cross-sectional study design was used. We could not control for some potential confounders (e.g., health provider-related factors) as we were limited to variables available in the GMHS dataset. Data were collected from women with regard to events in the past 5 years and recall bias might have been introduced, but we expect recall bias to be similar among women who were either in a polygynous marriage or monogamous marriage.

Conclusion

Our findings highlight the need for policymakers to pay special attention to women in polygynous marriages and implement interventions to address their unique reproductive healthcare needs. Policymakers should prioritise marriage type in their standardised data collection tools as well as stratifying indicators of health service utilisation by marriage type. We believe this would be an opportunity for providers of reproductive health service to identify women in polygynous marriages and provide them with their health needs, including quality family planning and maternal health counselling, and male partner engagement services.

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