Barriers to healthcare services utilisation among women in Ghana: evidence from the 2022 Ghana Demographic and Health Survey

Florence Gyembuzie Wongnaah[1], Augustus Osborne[2*], Precious Adade Duodu[3], Abdul-Aziz Seidu[4] and Bright Opoku Ahinkorah[5,6]

Abstract

Background Access to healthcare is vital to women's health outcomes, as emphasised in the Sustainable Development Goals. This study aimed to assess the factors associated with barriers to healthcare utilisation among women aged 15-49 years in Ghana.

Methods Data from the 2022 Ghana Demographic and Health Survey was used for the study. The study included 15,014 women. Regional variations in the proportion of respondents with healthcare access were visualised using a spatial map. A multivariable binary logistic regression analysis was conducted. The results were presented as adjusted odds ratios (aORs) with 95% confidence intervals (CIs).

Results In Ghana, 53.6% [51.7, 55.5] of women reported barriers to healthcare utilisation. Women aged 25–29 years [aOR = 1.245; 95% CI: 1.01, 1.53] and 45–49 years [aOR = 1.377; 95% CI: 1.04, 1.82] had higher odds of facing barriers in healthcare services utilisation than those aged 15–19 years. The odds for experiencing barriers to healthcare utilisation were higher among women with two [aOR = 1.290; 95% CI: 1.06, 1.56], three [aOR = 1.478; 95% CI: 1.20, 1.82], and four or more children [aOR = 1.306; 95% CI: 1.05, 1.63], women of Ewe [aOR = 1.325; 95% CI: 1.07, 1.63], or Mole Dagbani ethnicity [aOR = 1.512; 95% CI: 1.22, 1.87] compared to those with no children and Akan women respectively. Lower odds were observed among women with higher education [aOR = 0.642; 95% CI: 0.49, 0.84], married [aOR = 0.555; 95% CI: 0.47, 0.66] or cohabiting women [aOR = 0.646; 95% CI: 0.55, 0.76], Muslims [aOR = 0.770; 95% CI: 0.64, 0.92], who watched Television [aOR = 0.776; 95% CI: 0.68, 0.88], and internet users [aOR = 0.765; 95% CI: 0.67, 0.87]. Those in the poorer [aOR = 0.666; 95% CI: 0.54, 0.82], middle [aOR = 0.453; 95% CI: 0.36, 0.58], richer [aOR = 0.368; 95% CI: 0.28, 0.48] and richest [aOR = 0.247; 95% CI: 0.18, 0.34] wealth quintile were less likely to experience barriers to healthcare services utilisation compared to the poorest. Regionally, women in Volta [aOR = 0.478; 95% CI: 0.33, 0.68], Bono [aOR = 0.488; 95% CI: 0.32, 0.76], and Upper East [aOR = 0.382; 95% CI: 0.21, 0.71] regions had lower odds of experiencing barriers to healthcare utilisation than those living in the Western region.

Conclusion A higher proportion of women in Ghana experience barriers to healthcare utilisation. Older age, higher parity, higher educational attainment or level, access to media, religion, ethnicity, wealth index, marital status,

*Correspondence:
Augustus Osborne
augustusosborne2@gmail.com
Full list of author information is available at the end of the article

Wongnaah *et al. BMC Health Services Research*   (2025) 25:305

Page 2 of 12

and geographical region were factors identified to be associated with barriers to healthcare utilisation in Ghana. It is recommended that policymakers prioritise interventions aimed at addressing regional disparities in healthcare infrastructure, improving geographic accessibility to healthcare services, and tackling socioeconomic, cultural, and social determinants of health. Efforts should focus on strengthening community-based healthcare initiatives, strengthening health insurance coverage, and promoting health education and literacy programs. These interventions can enhance health outcomes and promote health equity nationwide.

Keywords Healthcare, Access, Women, Reproductive-aged, Ghana

Introduction

Access to healthcare is a fundamental human right and a critical determinant of health outcomes, particularly for vulnerable populations such as women in low- and middle-income countries (LMICs). Access to healthcare encompasses interlinked components such as availability, accessibility, acceptability, and quality of healthcare [1]. Enhancing women's health contributes to a healthier society and enables women to participate actively in their communities and economies [2]. In Africa, for instance, where females constituted 50.14% of the region's population in 2021 [3], the health status of women continues to serve as a cornerstone for social and economic advancement across the region [4].

The Sustainable Development Goal 3 (SDG 3), which aims to ensure healthy lives and promote wellbeing for all ages, is intrinsically linked to the advancement of women's health [2]. This is evidenced by the inclusion of targets focusing on reducing global maternal mortality (SDG 3.1), ensuring universal access to sexual and reproductive healthcare services (SDG 3.7), and achieving universal health coverage (UHC) (SDG 3.8), which are critical to improving health outcomes for women [2]. SDG 5 also focuses on achieving gender equality and empowering all women and girls, including target 5.6, which aims to ensure universal access to sexual and reproductive health and rights [2].

Despite global efforts to improve healthcare access, many women in LMICs and sub-Saharan Africa (SSA) continue to face significant barriers when seeking essential healthcare services, leading to adverse health outcomes and exacerbating existing health disparities [3]. Disproportionately, women in LMICs, including SSA, are mostly the least likely to receive adequate healthcare [5]. Previous studies in SSA [6], Tanzania [7], Ghana [8], and Gambia [9] have reported various individual and contextual factors that influence healthcare accessibility issues, particularly for maternal care. These factors include maternal age, maternal education, place and region of residence, parity, household wealth, health insurance coverage, marital status, giving birth at health institutions, employment status, distance to health facilities, listening to radio and watching television, among others [6–9].

The Ghanaian government has made considerable strides in improving healthcare infrastructure and implementing health policies such as the National Health Insurance Scheme (NHIS) established in 2003 to enhance access to care. The NHIS has particularly benefited women, granting expectant mothers enrolled in the program complimentary services encompassing prenatal, delivery, postnatal, and newborn care [10–13]. The exemption of delivery fees on the NHIS contributed to a notable rise in the proportion of skilled birth attendance, especially among poor and less educated women, thus aligning with the policy's aim to aid those facing the most significant financial hurdles in accessing healthcare [14].

Despite the NHIS provisions, additional economic and logistical hurdles persist, impeding many women's access to care [14]. For instance, studies have found that extensive waiting periods, substandard medication quality, unfavourable disposition of healthcare personnel, and sociocultural factors are significant barriers to Ghana's NHIS subscription [12, 13]. Also, distance remains a considerable challenge for accessing maternal healthcare services in Ghana [15]. To this end, the difficulty in accessing healthcare among Ghanaian women of reproductive age remains a significant public health concern as they face at least one form of barrier to accessing healthcare [8]. Although a previous study [8] assessed the barriers to accessing healthcare among women in Ghana, the study used the decade-old extant 2014 Ghana Demographic and Health Survey (GDHS), leaving a gap in the literature. Therefore, this current study utilised recent nationally representative data, the 2022 GDHS, to assess the factors associated with the barriers to healthcare utilisation by women of reproductive age (15-49 years) in Ghana. The study contributes to the broader body of literature by providing up-to-date evidence on the prevalence and correlates of healthcare access barriers among Ghanaian women. This information is crucial for monitoring progress towards health-related SDGs and informing evidence-based policymaking.

Wongnaah *et al. BMC Health Services Research* (2025) 25:305

Page 3 of 12

Methods

Data source

The 2022 GDHS was the data source. The GDHS is part of the Demographic and Health Survey (DHS) program that gathers health and demographic information on women, men, and children worldwide [16]. The DHS has been conducted in over 90 LMICs since its establishment, with more than 350 surveys [17]. The 2022 GDHS is the eighth standard DHS conducted since the first survey in 1988 [16]. The data collection process utilised structured questionnaires, employing a cross-sectional design and a multi-stage sampling procedure [18]. The GDHS included a sample of 15,014 women between the ages of 15 and 49 years in Ghana. This manuscript was prepared following the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) checklist [19].

Variables

Outcome variable

The study's outcome variable was barriers to healthcare utilisation, measured based on responses to four survey questions regarding four specific healthcare access issues: 'getting permission to go for treatment', 'getting money for treatment', 'distance to health facilities', and 'not wanting to go alone'. The responses to the questions were 'a big problem' and 'not a big problem'. We created a composite variable called 'barriers to healthcare utilisation'. This variable is assigned a value of '1' if a woman reported at least one item as 'a big problem' in accessing healthcare and a value of '0' if a woman reported 'no big problem'. This coding was done based on previous studies [6, 8, 9] and the guide to DHS Statistics DHS [8]. Please see the link https://dhsprogram.com/data/Guide-to-DHS-Statistics/index.htm#t=Problems_in_Accessing_Health_Care.htm

Explanatory variables

The study examined fifteen explanatory variables, grouped into individual and contextual level variables. The individual-level variables included age, religion, educational level, employment or current working status, marital status, the total number of children ever born (parity), media exposure (reading newspapers or magazines, listening to radio, watching television), health insurance coverage, and husband's education. The contextual variables included the sex of the household head, wealth index, place of residence, and region of residence. We identified and obtained those variables by their inclusion in the DHS data and by doing an extensive review of relevant literature [6–9, 20, 21]. See Table 1 for the coding scheme of the variables.

Statistical analyses

The statistical analyses were conducted using Stata version 17.0. We used percentages with confidence intervals (CIs) to summarise barriers in accessing healthcare among reproductive-age women in Ghana. A spatial map was used to present the findings of the regional variations of barriers to healthcare utilisation among women in Ghana. Later, a binary logistic regression analysis was performed to determine the factors associated with the barriers to healthcare utilisation among women in Ghana. The results were presented using crude odds ratio (COR) and adjusted odds ratio (aOR) with their respective 95% CIs. Statistical significance was set at $p < 0.05$. All the analyses were weighted, and the svyset command in Stata, which contains the sampling weights, one or more stages of clustered sampling, and stratification, was used to deal with the complex nature of the DHS dataset.

Results

Background characteristics of women in Ghana

Table 1 shows the background characteristics of the women in Ghana. Ages ranged from 20 to 24 years for 18.0% of the women. Most (59.9%) had a secondary education, and a significant portion (76.8%) identified as Christians. Nearly three quarters (74.6%) were employed, though over half (53.5%) had never used the internet. The largest tribal group represented was Akan (46.1%). Regarding socioeconomic status, a little over one-fifth (22.5%) fell into the richer category, and a majority (57.0%) resided in urban areas.

The proportion of women who had barriers to healthcare utilisation in Ghana

Figure 1 shows the regional distribution of the proportion of women with barriers to healthcare utilisation in Ghana. Across the sixteen administrative regions, there were variations in the proportion of women who had barriers to healthcare utilisation in Ghana. The Savannah (72.4%), Upper West (66.6%), North East (65.7%), and Northern (65.4%) Regions had the highest proportions of women who had barriers to healthcare utilisation, whilst the Upper East (50.5%), Greater Accra (42.7%), and Bono (41.5%) Regions had the lowest proportions of women who had barriers to healthcare utilisation in Ghana. The national proportion of women with barriers to healthcare utilisation was 53.6% [51.7, 55.5] (Table 2).

Table 2 shows the results of a cross-tabulation between the explanatory variables and barriers to healthcare utilisation among women in Ghana. Barriers to healthcare utilisation were highest among women aged 45–49 years (61.0%), women with no education (68.5%), women who had never used the internet (62.8%), women who were Mole Dagbani by tribe (60.1%), poorest women (75.3%),

Wongnaah *et al. BMC Health Services Research*   (2025) 25:305

Page 4 of 12

Table 1 Background characteristics of women in Ghana

Variable	Weighted sample (n)	Weighted frequency (%)
Woman's age (in years)		
15–19	2,682	17.9
20–24	2,695	18.0
25–29	2,340	15.6
30–34	2,252	15.0
35–39	2,059	13.7
40–44	1,675	11.2
45–49	1,311	8.7
Educational level		
No education	2,411	16.1
Primary	2,071	13.8
Secondary	8,999	59.9
Higher	1,533	10.2
Marital status		
Never in union	5,268	35.1
Married	6,008	40.1
Cohabiting	2,197	14.6
Previously married	1,542	10.2
Religion		
Christians	11,531	76.8
Muslims	2,906	19.4
Others	577	3.8
Current working status		
Not working	3,808	25.4
Working	11,206	74.6
Parity		
Zero	4,854	32.3
One	2,421	16.1
Two	2,005	13.4
Three	1,764	11.8
Four or more	3,970	26.4
Covered by health insurance		
No	1,482	9.9
Yes	13,532	90.1
Read newspaper or magazine		
No	13,293	88.5
Yes	1,721	11.5
Listen to radio		
No	4,993	33.3
Yes	10,021	66.7
Watch television		
No	3,463	23.1
Yes	11,551	76.9
Use Internet		
No	8,028	53.5
Yes	6,986	46.5
Ethnicity		
Akan	6,917	46.1

Table 1 (continued)

Variable	Weighted sample (n)	Weighted frequency (%)
Ga/Dangme	976	6.5
Ewe	1,746	11.6
Mole Dagbani	2,789	18.6
Others	2,586	17.2
Sex of household head		
Male	8,653	57.6
Female	6,361	42.4
Wealth index		
Poorest	2,447	16.3
Poorer	2,712	18.1
Middle	3,121	20.8
Richer	3,379	22.5
Richest	3,355	22.4
Place of residence		
Urban	8,557	57.0
Rural	6,457	43.0
Region of residence		
Western	955	6.5
Central	1,703	11.3
Greater Accra	2,327	15.5
Volta	713	4.8
Eastern	1,220	8.1
Ashanti	2,928	19.5
Western North	411	2.7
Ahafo	317	2.1
Bono	567	3.8
Bono East	676	4.5
Oti	403	2.7
Northern	1,149	7.7
Savannah	319	2.1
North East	290	1.9
Upper East	640	4.3
Upper West	398	2.7

women living in rural areas (62.8%), and women living in the Savannah region (72.4%).

Factors associated with barriers to healthcare utilisation among women in Ghana

The analysis of factors associated with barriers to healthcare utilisation among women in Ghana as shown in the adjusted model, revealed important differences between unadjusted (COR) and adjusted (aOR) results. The crude analysis initially showed that only women aged 45–49 years had significantly higher odds of barriers [COR = 1.304; 95% CI: 1.07, 1.57], but after adjustment, both age groups 25–29 years [aOR = 1.245; 95% CI:
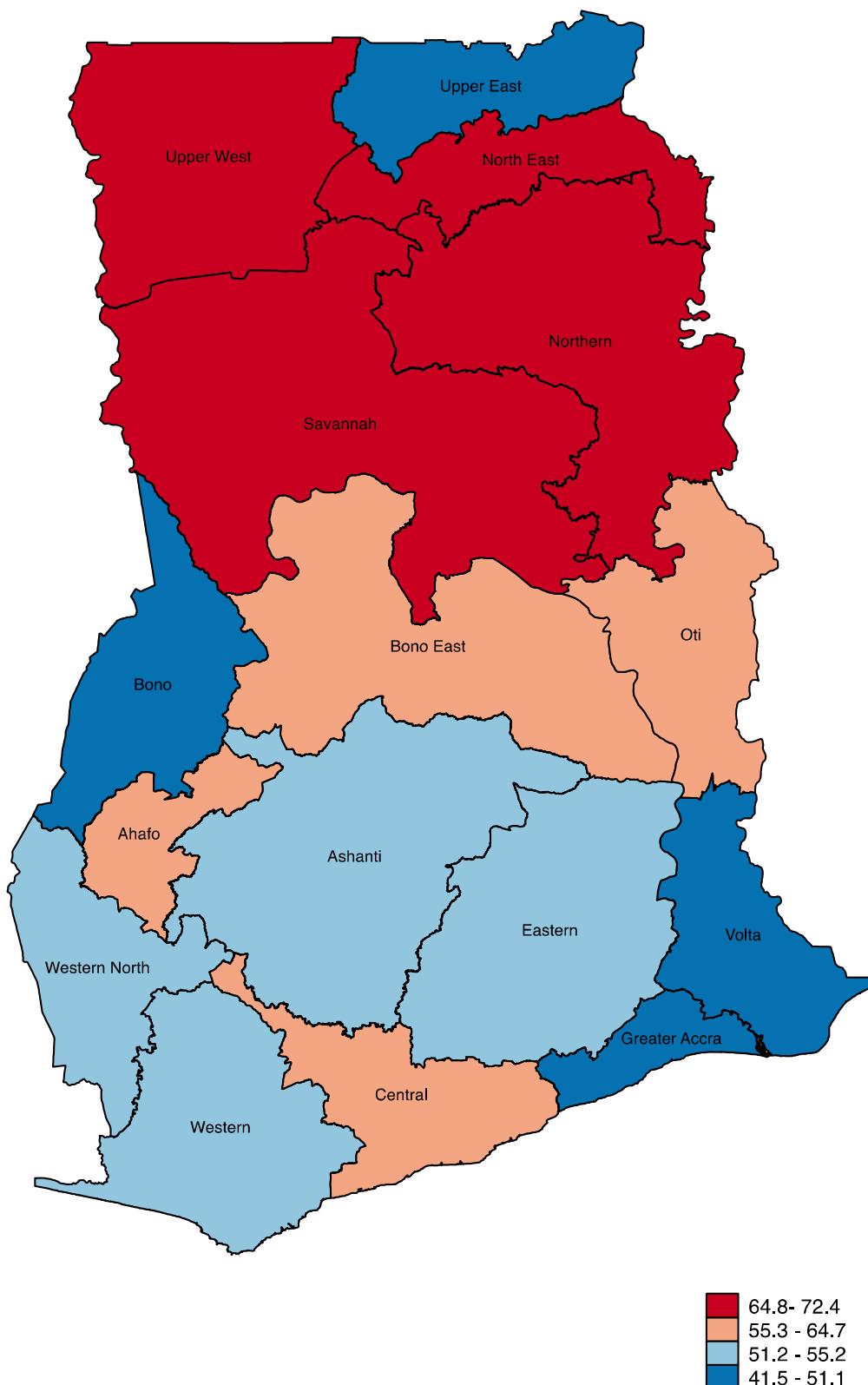
Fig. 1 Regional distribution of the proportion of women with barriers to healthcare utilisation in Ghana

Wongnaah *et al. BMC Health Services Research*   (2025) 25:305

Page 6 of 12

Table 2 Bivariable analysis of women with barriers to healthcare utilisation in Ghana

Variables	Barriers to healthcare utilisation
National proportion	**53.6% [51.7, 55.5]**
Woman's age (in years)	
15–19	54.5 [51.5, 57.5]
20–24	52.0 [49.0, 55.0]
25–29	52.3 [49.1, 55.4]
30–34	52.5 [49.3, 55.7]
35–39	51.3 [48.1,54.4]
40–44	55.3 [52.0,58.6]
45–49	61.0 [56.6,65.2]
Educational level	
No education	68.5 [65.2,71.7]
Primary	62.9 [59.4,66.3]
Secondary	51.1 [49.1,53.2]
Higher	32.2 [28.3,36.4]
Marital status	
Never in union	52.8 [50.3,55.2]
Married	50.9 [48.4,53.3]
Cohabiting	54.0 [50.8,57.2]
Previously married	66.6 [62.8,70.2]
Religion	
Christians	52.7 [50.5,54.8]
Muslims	54.9 [50.7,59.0]
Others	66.0 [59.0,72.3]
Current working status	
Not working	52.4 [49.5,55.3]
Working	54.0 [52.1,56.0]
Parity	
Zero	50.0 [47.6,52.5]
One	49.1 [46.3,51.9]
Two	52.3 [48.9,55.6]
Three	55.8 [52.6,59.0]
Four or more	60.5 [57.8,63.1]
Covered by health insurance	
No	59.9 [55.9,63.8]
Yes	52.9 [50.9,54.9]
Read newspaper or magazine	
No	54.5 [52.5,56.5]
Yes	46.7 [42.6,50.8]
Listen to radio	
No	59.7 [57.0,62.4]
Yes	50.6 [48.5,52.7]
Watch television	
No	70.5 [67.5,73.4]
Yes	48.5 [46.6,50.5]
Use internet	
No	62.8 [60.7,64.9]
Yes	43.0 [40.5,45.6]

Table 2 (continued)

Variables	Barriers to healthcare utilisation
Ethnicity	
Akan	49.9 [47.3,52.4]
Ga/Dangme	45.3 [38.8,52.0]
Ewe	53.5 [49.2,57.6]
Mole Dagbani	60.1 [55.6,64.3]
Others	60.0 [56.4,63.5]
Sex of household head	
Male	52.9 [50.4,55.3]
Female	54.6 [52.3,56.9]
Wealth index	
Poorest	75.3 [71.1,79.0]
Poorer	65.5 [62.3,68.7]
Middle	54.5 [51.6,57.4]
Richer	47.1 [44.2,50.0]
Richest	34.0 [30.8,37.3]
Place of residence	
Urban	46.7 [44.3,49.1]
Rural	62.8 [59.6,65.8]
Region of residence	
Western	52.9 [45.7,60.0]
Central	56.9 [50.7,62.8]
Greater Accra	42.7 [36.9,48.6]
Volta	46.6 [42.2,51.0]
Eastern	51.8 [46.4,57.2]
Ashanti	52.7 [47.8,57.6]
Western North	53.6 [46.9,60.9]
Ahafo	64.1 [58.3,69.6]
Bono	41.5 [33.2,50.4]
Bono East	59.0 [50.1,67.3]
Oti	64.2 [58.9,69.2]
Northern	65.4 [56.9,73.1]
Savannah	72.4 [64.0,79.5]
North East	65.7 [57.4,73.1]
Upper East	50.5 [40.2,60.7]
Upper West	66.6 [58.5,73.8]

1.01, 1.53] and 45-49 years [aOR = 1.377; 95% CI: 1.04, 1.82] showed increased odds. Higher education demonstrated a strong protective effect in the crude analysis [COR = 0.218; 95% CI: 0.17, 0.27], which remained protective but was attenuated after adjustment [aOR = 0.642; 95% CI: 0.49, 0.84]. For that, married [aOR = 0.555; 95% CI: 0.47, 0.66] and cohabiting women [aOR = 0.646; 95% CI: 0.55, 0.76] showed significantly lower odds of experiencing barriers compared to never married women. Regarding parity, the crude results showed increasing odds with more children, particularly for those with

Wongnaah *et al. BMC Health Services Research*   (2025) 25:305

Page 7 of 12

four or more children [COR = 1.527; 95% CI: 1.36, 1.71], which remained significant but was moderated in the adjusted analysis [aOR = 1.306; 95% CI: 1.05, 1.63]. Religious affiliation showed notable changes, with Muslims showing lower odds after adjustment [aOR = 0.770; 95% CI: 0.64, 0.92]. Ethnicity patterns revealed that Ewe and Mole Dagbani groups had higher odds of barriers to healthcare utilisation [aOR = 1.325; 95% CI: 1.07, 1.63 and aOR = 1.512; 95% CI: 1.22, 1.87] compared to Akans. The wealth gradient maintained its protective effect across both analyses, though slightly attenuated in the adjusted results, with the richest quintile showing the strongest protection in both crude [COR = 0.169; 95% CI: 0.13, 0.21] and adjusted analyses [aOR = 0.247; 95% CI: 0.18, 0.34]. Regional variations were also more pronounced in crude analysis but reduced after adjustment, with Volta [aOR = 0.478; 95% CI:0.33,0.68], Bono [aOR = 0.488; 95% CI: 0.32,0.76], and Upper East [aOR = 0.382; 95% CI: 0.21, 0.71] regions maintaining significantly lower odds of barriers (Table 3).

Discussion

The study examined barriers to healthcare utilisation and their correlating factors among women of reproductive age in Ghana. A substantial majority (53.6%; 95% CI: 51.7, 55.5) of participants reported difficulties accessing healthcare. The study finding is similar to previous research by Seidu et al. [6] (51.1%) and Seidu [8] (50.7%) from the 2014 GDHS, nonetheless, higher than the findings reported in the Gambia (45.5%) [9], but lower than the findings reported in Tanzania (65.53%) [7], and Ethiopia (69.9%) [20]. These variations in healthcare access across countries likely reflect disparities in healthcare systems, socioeconomic conditions, and cultural factors [22]. For instance, Ghana's relatively better-developed healthcare infrastructure compared to some neighboring countries might explain the lower prevalence of reported difficulties. Conversely, countries with more pronounced socioeconomic inequalities and rural populations heavily reliant on traditional healing practices might exhibit higher rates of healthcare access barriers. Additionally, sociocultural factors, such as gender norms and attitudes towards modern medicine, can influence women's utilisation of healthcare services [23]. Older age, higher parity, lower educational attainment, limited media exposure, lower socioeconomic status, marital status, and geographic location emerged as significant barriers to healthcare access among the study participants.

The results indicate that women aged 25–29 years and 45–49 years have higher odds of barriers to healthcare utilisation than those aged 15–19 years. This finding deviates from previous studies in Ghana [8] but is consistent with prior research in Ethiopia [20]. Women in

this age group may have increased healthcare needs due to age-related health conditions or chronic illnesses, necessitating more frequent access to healthcare services. Additionally, they are more inclined to seek information on preventative measures to maintain their health [24].

The findings reveal a significant association between parity and barriers to healthcare utilisation among women in Ghana. Specifically, women with two, three, four or more children exhibited higher odds of having problems accessing healthcare compared to those with no children. The findings of this study align with studies conducted in Bangladesh [25], Gambia [9], and SSA countries [6]. This could be attributed to various factors, including increased caregiving responsibilities and time constraints associated with raising multiple children, which may limit women's ability to seek timely healthcare services. Additionally, financial constraints arising from the costs associated with childcare and healthcare expenses could further hinder healthcare access among women with multiple children, as well as previous experience with poor treatment from healthcare providers [22, 26].

Women with higher educational levels or attainment demonstrated lower odds of experiencing barriers to healthcare access than those with no education. The findings are consistent with prior research in Ghana [8], Tanzania [7], Uganda [27], and Ethiopia [28]. A study from Nigeria suggests that higher levels of education are associated with improved health literacy, better awareness of healthcare services, and enhanced decision-making abilities regarding healthcare utilisation [29]. Additionally, women with higher educational levels may have greater access to information and resources, enabling them to navigate healthcare systems more effectively and advocate for their health needs.

Married and cohabiting women had lower odds of experiencing difficulties in barriers to healthcare utilisation compared to those who had never been in a union. This finding was in line with previous studies conducted in Ghana [8], Ethiopia [20], and Tanzania [7]. This could be attributed to various factors, including social support mechanisms within marital relationships and shared decision-making regarding healthcare utilisation [30]. In the context of Ghana, traditional gender roles and societal expectations may play a role, with married women often benefiting from the support and assistance of their spouses in accessing healthcare services [31]. Furthermore, marital and cohabiting relationships may enhance women's confidence and ability to seek timely healthcare services.

Further, we found that watching television showed decreased odds of women having barriers to healthcare utilisation in Ghana. The finding is consistent with

Wongnaah *et al. BMC Health Services Research*   (2025) 25:305

Page 8 of 12

Table 3 Factors associated with barriers to healthcare utilisation among women in Ghana

Category	Barriers to healthcare utilisation	
	COR 95% CI	aOR 95% CI
Woman's age (in years)		
15–19	**Ref**	**Ref**
20–24	0.904 [0.78,1.04]	1.094 [0.93,1.29]
25–29	0.913 [0.78,1.06]	1.245*[1.01,1.53]
30–34	0.923 [0.78,1.08]	1.218 [0.97,1.54]
35–39	0.878 [0.76,1.01]	1.085 [0.84,1.40]
40–44	1.032 [0.88,1.20]	1.148 [0.87,1.51]
45–49	1.304*[1.07,1.57]	1.377*[1.04,1.82]
Educational level		
No education	**Ref**	**Ref**
Primary	0.778 [0.64,0.93]	0.982 [0.81,1.19]
Secondary	0.480 [0.41,0.55]	0.857 [0.73,1.01]
Higher	0.218**[0.17,0.27]	0.642** [0.49,0.84]
Marital status		
Never in union	**Ref**	**Ref**
Married	0.926 [0.83,1.02]	0.555***[0.47,0.66]
Cohabiting	1.052 [0.91,1.21]	0.646***[0.55,0.76]
Previously married	1.784 [1.51,2.10]	1.132 [0.92,1.39]
Religion		
Christians	**Ref**	**Ref**
Muslims	1.092 [0.90,1.31]	0.770**[0.64,0.92]
Others	1.741 [1.29,2.34]	0.869 [0.67,1.13]
Current working status		
Not working	**Ref**	**Ref**
Working	1.065 [0.96,1.18]	1.041 [0.93,1.17]
Parity		
Zero	**Ref**	**Ref**
One	0.963 [0.85,1.08]	1.054 [0.91,1.22]
Two	1.094** [0.95,1.24]	1.290** [1.06,1.56]
Three	1.262***[1.09,1.45]	1.478***[1.20,1.82]
Four or more	1.527* [1.36,1.71]	1.306* [1.05,1.63]
Covered by health insurance		
No	**Ref**	**Ref**
Yes	0.751 [0.63,0.88]	0.995 [0.85,1.17]
Read newspaper or magazine		
No	**Ref**	**Ref**
Yes	0.731* [0.61,0.86]	1.197 [1.00,1.43]
Listen to radio		
No	**Ref**	**Ref**
Yes	0.689 [0.61,0.77]	0.902 [0.80,1.02]
Watch television		
No	**Ref**	**Ref**
Yes	0.394***[0.34,0.45]	0.776***[0.68,0.88]
Use internet		
No	**Ref**	**Ref**
Yes	0.446***[0.39,0.50]	0.765***[0.67,0.87]
Ethnicity		
Akan	**Ref**	**Ref**

Wongnaah *et al. BMC Health Services Research*   (2025) 25:305

Page 9 of 12

Table 3 (continued)

Category	Barriers to healthcare utilisation	
	COR 95% CI	aOR 95% CI
Ga/Dangme	0.834 [0.63,1.09]	0.804 [0.65,1.00]
Ewe	1.154 [0.96,1.38]	1.325**[1.07,1.63]
Mole Dagbani	1.512**[1.22,1.87]	1.399**[1.10,1.78]
Others	1.508 [1.26,1.79]	1.228 [0.99,1.52]
Sex of household head		
Male	**Ref**	**Ref**
Female	1.074 [0.95,1.20]	1.070 [0.95,1.21]
Wealth index		
Poorest	**Ref**	**Ref**
Poorer	0.625***[0.50,0.75]	0.666***[0.54,0.82]
Middle	0.394***[0.31,0.49]	0.453***[0.36,0.58]
Richer	0.292***[0.23,0.37]	0.368***[0.28,0.48]
Richest	0.169***[0.13,0.21]	0.247***[0.18,0.34]
Place of residence		
Urban	**Ref**	**Ref**
Rural	1.922 [1.63,2.26]	1.035 [0.87,1.23]
Region of residence		
Western	**Ref**	**Ref**
Central	1.173 [0.80,1.71]	1.049 [0.74,1.49]
Greater Accra	0.662 [0.45,0.96]	0.879 [0.62,1.25]
Volta	0.776***[0.55,1.08]	0.478***[0.33,0.68]
Eastern	0.958 [0.66,1.37]	0.844 [0.60,1.19]
Ashanti	0.992 [0.69,1.40]	0.929 [0.67,1.29]
Western North	1.027 [0.69,1.52]	0.675 [0.45,1.01]
Ahafo	1.591 [1.08,2.32]	0.947 [0.65,1.38]
Bono	0.632**[0.39,1.00]	0.488**[0.32,0.76]
Bono East	1.278 [0.80,2.02]	0.751 [0.48,1.17]
Oti	1.596 [1.10,2.30]	0.796 [0.54,1.17]
Northern	1.686 [1.06,2.68]	0.970 [0.58,1.62]
Savannah	2.334 [1.43,3.78]	1.107 [0.68,1.81]
North East	1.704 [1.08,2.68]	0.716 [0.43,1.19]
Upper East	0.907**[0.50,0.71]	0.382**[0.21,0.71]
Upper West	1.772 [1.12,2.78]	0.789 [0.50,1.24]

Exponentiated coefficients; 95% confidence intervals (CIs) in brackets

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$, Ref-reference

previous studies in Ghana [8], Ethiopia [32], Bangladesh [33] and Malawi [34]. Women who watch television may have increased exposure to health-related information, including preventive measures, available healthcare services, and their rights to healthcare access [35, 36]. Therefore, they may be more informed and empowered to navigate healthcare systems and seek timely medical assistance. This finding aligns with previous research highlighting the positive association between internet usage and healthcare access among women [37, 38]. Studies conducted in other contexts have reported similar results, where internet use has been associated with increased health knowledge, improved health-seeking behaviors, and better health outcomes [39]. However, it is vital to acknowledge the persistent challenge of poor network connectivity, particularly in rural areas of Ghana [40]. Limited access to reliable internet services in these regions may impede women's ability to fully leverage

online health resources and participate in digital health initiatives.

The odds for barriers to healthcare utilisation were higher among women who were Ewe, and Mole Dagbani by ethnicity than those who were Akan by ethnicity. Ewe and Mole Dagbani ethnic groups might have lower socioeconomic statuses compared to Akan, leading to financial barriers to healthcare [41]. Differences in educational attainment could influence health literacy and access to information about healthcare services. We also found lower odds of barriers to healthcare access among Muslim women in Ghana. Islamic teachings often emphasise cleanliness and bodily care, which could influence health-seeking behavior [42]. Earlier marriage age among Muslim women could lead to earlier exposure to reproductive health services [43]. Differences in family planning practices between Muslim and Christian women might influence their healthcare needs and utilisation [44]. Further research with specific data on Muslim and Christian women in Ghana would be necessary to pinpoint the exact causes.

The odds of encountering barriers to healthcare utilisation among women in Ghana were associated with all levels of wealth index (poorer, middle, richer, and richest) compared to the poorest group. The findings, observed across all levels of the wealth index, suggest broader improvements in healthcare access beyond just financial resources. Ghana's healthcare system has implemented universal health coverage initiatives, ensuring that essential healthcare services are affordable for all individuals regardless of their wealth status [45]. Additionally, healthcare is made accessible through community-based health planning and services (CHPS) [46]. These findings are supported by the research of Seidu et al. [8] and Bintabara et al. [7] in Ghana and Tanzania, respectively, which found that possessing health insurance lowers the odds of experiencing difficulty in accessing healthcare.

Further, geographical region was significantly associated with barriers to healthcare utilisation among women, highlighting the importance of geographic location in shaping individuals' experiences with healthcare access. This finding is consistent with prior research from the Gambia [9]. Several factors may contribute to the decreased odds of barriers to healthcare utilisation among women in the Volta, Bono, and Upper East regions compared to the Western region. These factors may include variations in healthcare infrastructure and service availability, as well as geographic accessibility, sociocultural norms, and economic differences among regions that may affect women's decisions in accessing healthcare [22].

Strengths and limitations

The major strength of our study is that we used the most recent nationally representative data to evaluate individual and contextual factors associated with the experience of barriers to healthcare utilisation among women in Ghana. This makes the findings generalisable to all reproductive-age women in Ghana. The cross-sectional design precludes the establishment of definitive causal relationships between barriers to healthcare utilisation and the identified factors. While the findings suggest associations between these variables, further research using longitudinal or experimental designs is necessary to elucidate causal pathways. Also, relying on subjects' self-reported information introduces the potential for recall and social desirability biases, which might have affected the study results. Additionally, since we used secondary data from a survey, we could not account for certain important factors such as healthcare infrastructure, health workers' distribution, and healthcare policy effectiveness.

Conclusion

Problems with accessing healthcare were high among women of reproductive age in Ghana. Older age, higher parity, lower educational attainment, access to media, religion, ethnicity, wealth index, marital status, and geographical region were factors identified to be associated with problems in accessing healthcare in Ghana. It is recommended that policymakers prioritise interventions aimed at addressing regional disparities in healthcare infrastructure, improving geographic accessibility to healthcare services, and tackling socioeconomic, cultural, and social determinants of health. Efforts should focus on strengthening community-based healthcare initiatives, strengthening health insurance coverage, and promoting health education and literacy programs. These interventions can enhance health outcomes and promote health equity nationwide.

Abbreviations

aOR	Adjusted Odds Ratio
CI	Confidence Interval
COR	Crude Odds Ratio
DHS	Demographic and Health Survey
GDHS	Ghana Demographic and Health Survey
ICC	Intra-Class Correlation Coefficient
MEASURE DHS	Monitoring and Evaluation to Assess and Use Results Demographic and Health Surveys
PSU	Primary Sampling Unit
SDG	Sustainable Development Goal
SSA	Sub-Saharan Africa
STROBE	Strengthening the Reporting of Observational Studies in Epidemiology

Wongnaah *et al. BMC Health Services Research*   (2025) 25:305

Page 11 of 12

Authors' contributions
AO and BOA contributed to the study design and conceptualisation. AO and BOA performed the analysis. AO, FGW, PAD, AS, and BOA drafted the initial manuscript. All the authors critically reviewed the manuscript for its intellectual content. All authors read and amended drafts of the paper and approved the final version. AO had the final responsibility of submitting it for publication.

Funding
The study received no funding.

Data availability
The data used for this study is freely available at https://dhsprogram.com/data/dataset/Ghana_Standard-DHS_2022.cfm?flag=1.

Declarations

Ethics approval and consent to participate
Ethical clearance was not sought for the study since the secondary dataset is freely available in the public domain. A detailed description of the ethical issues regarding the DHS and its dataset usage can be assessed at http://goo.gl/ny8T6X

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

Author details
[1]Department of Global Public Health, Karolinska Institutet, Stockholm, Sweden. [2]Department of Biological Sciences, School of Basic Sciences, Njala University, PMB, Freetown, Sierra Leone. [3]Department of Nursing, School of Human and Health Sciences, University of Huddersfield, Huddersfield, England, UK. [4]Public Health and Tropical Medicine, James Cook University, Townsville, QLD 4811, Australia. [5]REMS Consultancy Services Limited, Western Region, Sekondi-Takoradi, Ghana. [6]Faculty of Health and Medical Sciences, The University of Adelaide, Adelaide, Australia.

References
1. World Health Organization. Human rights. https://www.who.int/news-room/fact-sheets/detail/human-rights-and-health 2023. Accessed May 20,2024
2. United Nations. SDG 3: Ensure healthy lives and promote wellbeing for all at all ages. https://www.unwomen.org/en/news/in-focus/women-and-the-sdgs/sdg-3-good-health-well-being 2015. Accessed May 20,2024
3. WHO African Region. Women's health in the African Region. https://files.aho.afro.who.int/afahobckpcontainer/production/files/Womens_Health_Regional_Factsheet.pdf 2023. Accessed May 20,2024
4. WHO African Region. Addressing the Challenge of Women's Health in Africa. https://www.afro.who.int/sites/default/files/2017-06/report-of-the-commission-on-womens-health-in-the-african-region---full-who_acreport-comp%20(1).pdf 2012. Accessed May 20,2024
5. WHO. Human reproduction programme: maternal mortality. 2014. Accessed May 20,2024
6. Seidu AA. Mixed effects analysis of factors associated with barriers to accessing healthcare among women in sub-Saharan Africa: Insights from demographic and health surveys. PLoS ONE. 2020;15(11):e0241409.
7. Bintabara D, Nakamura K, Seino K. Improving access to healthcare for women in Tanzania by addressing socioeconomic determinants and health insurance: a population-based cross-sectional survey. BMJ Open. 2018;8:e023013.
8. Seidu AA, Darteh EKM, Agbaglo E, Dadzie LK, Ahinkorah BO, Ameyaw EK, et al. Barriers to accessing healthcare among women in Ghana: a multilevel modelling. BMC Public Health. 2020;20(1):1–12.
9. Tsegaw M, Mulat B, Shitu K. Problems with accessing healthcare and associated factors among reproductive-aged women in the Gambia using Gambia Demographic and Health Survey 2019/2020: a cross-sectional study. BMJ Open. 2023;13(8):e073491.
10. Ameyaw EK, Ahinkorah BO, Baatiema L, Seidu AA. Is the National Health Insurance Scheme helping pregnant women in accessing health services? Analysis of the 2014 Ghana demographic and Health survey. BMC Pregnancy Childbirth. 2021;21:1–8.
11. Brugiavini A, Pace N. Extending health insurance in Ghana: effects of the National Health Insurance Scheme on maternity care. Heal Econ Rev. 2016;6:1.
12. Kumi-Kyereme A, Amu H, Darteh EK. Barriers and motivations for health insurance subscription in Cape Coast, Ghana: a qualitative study. Archives of Public Health. 2017;75:1.
13. Fenny AP, Enemark U, Asante FA, Hansen KS. Patient satisfaction with primary health care–a comparison between the insured and non-insured under the National Health Insurance Policy in Ghana. Global J Health Sci. 2014;6(4):9.
14. Penfold S, Harrison E, Bell J, Fitzmaurice AN. Evaluation of the delivery fee exemption policy in Ghana: population estimates of changes in delivery service utilisation in two regions. Ghana Med J. 2007;41(3):100.
15. Dotse-Gborgbortsi W, Nilsen K, Ofosu A, Matthews Z, Tejedor-Garavito N, Wright J, Tatem AJ. Distance is "a big problem": a geographic analysis of reported and modelled proximity to maternal health services in Ghana. BMC Pregnancy Childbirth. 2022;22(1):672.
16. Ghana Statistical Service (GSS) and ICF. 2024. Ghana Demographic and Health Survey 2022. Accra, Ghana, and Rockville, Maryland, USA: GSS and ICF
17. Croft NT, Marshall AM, Allen CK. Guide to DHS statistics (Version 2). Rockville, Maryland, USA: ICF International. 2018:33–2.
18. ICF International. 2012. Demographic and Health Survey Sampling and Household Listing Manual. MEASURE DHS, Calverton, Maryland, U.S.A.: ICF International
19. Von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP, Strobe Initiative. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: guidelines for reporting observational studies. International Journal of Surgery. 2014;12(12):1495–9.
20. Tamirat KS, Tessema ZT, Kebede FB. Factors associated with the perceived barriers of health care access among reproductive-age women in Ethiopia: a secondary data analysis of 2016 Ethiopian demographic and health survey. BMC Health Serv Res. 2020;20(1):1–8.
21. Minyihun A, Tessema ZT. Determinants of access to health care among women in East African countries: A Multilevel analysis of recent demographic and health surveys from 2008 to 2017. Risk Manag Healthcare Policy. 2020;13:1803–13.
22. Dawkins B, Renwick C, Ensor T, Shinkins B, Jayne D, Meads D. What factors affect patients' ability to access healthcare? An overview of systematic reviews. Trop Med Int Heal. 2021;26(10):1177–88.
23. Azuh D, Fayomi O, Ajayi, Lady. Sociocultural Factors of Gender Roles in Women's Healthcare Utilization in Southwest Nigeria. Open J Soc Sci. 2015;03(04):105–17.
24. Deeks A, Lombard C, Michelmore J, Teede H. The effects of gender and age on health related behaviors. BMC Public Health. 2009;9:1–8.
25. Pervin J, Venkateswaran M, Nu UT, Rahman M, O'Donnell BF, Friberg IK, et al. Determinants of utilisation of antenatal and delivery care at the community level in rural Bangladesh. PLoS One. 2021;16(9 September):1–16.
26. Geleto A, Chojenta C, Mussa A, Loxton D. Barriers to access and utilisation of emergency obstetric care at health facilities in sub-Saharan Africa-a systematic review protocol. Syst Rev. 2018;7(1):1–14.
27. Kalule-sabiti I, Amoateng AY, Ngake M. 504–1160–1-Pb. 2015;28(1).
28. King R, Jackson R, Dietsch E, Hailemariam A. Barriers and facilitators to accessing skilled birth attendants in Afar region, Ethiopia. Midwifery. 2015;31(5):540–6. Available from: https://doi.org/10.1016/j.midw.2015.02.004
29. Babalola S, Fatusi A. Determinants of use of maternal health services in Nigeria - Looking beyond individual and household factors. BMC Pregnancy Childbirth. 2009;9:43.
30. Aizer A, Currie J. The intergenerational transmission of inequality: Maternal disadvantage and health at birth. Science (80-). 2014;344(6186):856–61.
31. Wadei B, Adjei PO-W, Forkuor D. Gender Role Reforms in Ghana: Analysis of the Nature, Drivers, and Dimensions in Rural and Urban Contexts. J Soc Sci Humanit. 2019;5(4):408–19. Available from: http://www.aiscience.org/journal/jssh, http://www.creativecommons.org/licenses/by/4.0

Wongnaah *et al. BMC Health Services Research*   (2025) 25:305

Page 12 of 12

32. Woldeamanuel BT. Trends and Factors Associated with Healthcare Utilization for Childhood Diarrhea and Fever in Ethiopia: Further Analysis of the Demographic and Health Surveys from. to 2016. J Environ Public Health. 2000;2020:2020.

33. Acharya D, Khanal V, Singh JK, Adhikari M, Gautam S. Impact of mass media on the utilisation of antenatal care services among women of rural community in Nepal. BMC Res Notes. 2015;8(1):4–9.

34. Zamawe COF, Banda M, Dube AN. The impact of a community driven mass media campaign on the utilisation of maternal health care services in rural Malawi. BMC Pregnancy Childbirth. 2016;16(1):1–8. Available from: https://doi.org/10.1186/s12884-016-0816-0

35. Bertrand JT, O'Reilly K, Denison J, Anhang R, Sweat M. Systematic review of the effectiveness of mass communication programs to change HIV/AIDS-related behaviors in developing countries. Health Educ Res. 2006;21(4):567–97.

36. Collins JH, Bowie D, Shannon G. A descriptive analysis of health practices, barriers to healthcare and the unmet need for cervical cancer screening in the Lower Napo River region of the Peruvian Amazon. Women's Heal. 2019;15:1745506519890969.

37. Yu J, Meng S. Impacts of the Internet on Health Inequality and Healthcare Access: A Cross-Country Study. Front Public Heal. 2022;10(June):1–12.

38. Moorhead SA, Hazlett DE, Harrison L, Carroll JK, Irwin A, Hoving C. A new dimension of health care: Systematic review of the uses, benefits, and limitations of social media for health communication. J Med Internet Res. 2013;15(4):1–18.

39. Kontos E, Blake KD, Chou WYS, Prestin A. Predictors of ehealth usage: Insights on the digital divide from the health information national trends survey 2012. J Med Internet Res. 2014;16(7):1–16.

40. Peprah P, Abalo EM, Agyemang-Duah W, Budu HI, Appiah-Brempong E, Morgan AK, et al. Lessening barriers to healthcare in rural Ghana: Providers and users' perspectives on the role of mHealth technology A qualitative exploration. BMC Med Inform Decis Mak. 2020;20(1):1–12.

41. Ganle JK. Ethnic disparities in utilisation of maternal health care services in Ghana: evidence from the 2007 Ghana Maternal Health Survey. Ethn Health. 2016;21(1):85–101.

42. Anwar M, Green J, Norris P. Health-seeking behaviour in Pakistan: A narrative review of the existing literature. Public Health. 2012;126(6):507–17.

43. Arousell J, Carlbom A. Culture and religious beliefs in relation to reproductive health. Best Pract Res Clin Obstet Gynaecol. 2016;1(32):77–87.

44. Srikanthan A, Reid RL. Religious and cultural influences on contraception. J Obstet Gynaecol Can. 2008;30(2):129–37.

45. Dovlo D, Atim C. The National Health Insurance Scheme in Ghana: Best Practices. Afr Health. 2021;(April):13–5. Available from: http://moh.gov.rw/english/wp-content/uploads/2012/09/Selby-Ghana.pdf

46. Adusei AB, Bour H, Amu H, Afriyie A. Community-based Health Planning and Services programme in Ghana: a systematic review. Front Public Heal. 2024;12(March):1–8.

Publisher's Note