

Obstetric violence among HIV positive and negative women in Ghana: A cross sectional study in two regions

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Abstract

Background: Although the problem of obstetric violence (OV) is receiving increasing attention among academics and policy makers, the prevalence and associated factors of OV are still poorly understood. The fear of OV prevents women from giving birth in health facilities, which is crucial for the effectiveness of HIV prevention programs, such as the Prevention of Mother to Child Transmission (PMTCT) program.

Objective: The aim of this paper is to determine the prevalence of OV, the comparative burden and associated predictors between HIV positive and negative women in Ghana.

Methods: The present study is a facility-based cross-sectional study enrolling 2,142 women, of which 310 were HIV positive and 1,832 HIV negative with a birth history of 0-24 months. The women were enrolled consecutively using a two stage sampling technique from eight hospitals with antiretroviral clinics across two regions in Ghana. The primary outcome variable was the experience of OV and its various forms. Descriptive data is presented in tables and reported in frequencies. The inferential analysis has been performed by estimating the Adjusted Odds Ratios (AOR) using multivariate logistic regression.

Results: Prevalence of OV was slightly lower among HIV positive women (61.0%) compared to HIV negative women (65.1%), though this was not statistically significant ($\chi^2=1.99$; $p=0.158$). The most common sub-category of OV experienced by all women was non-confidential care (35.2%). HIV positive women experienced more abandoned care (32.6%) with non-consented care being the least prevalent form of OV. Experience of discrimination was higher among HIV positive women (13.5%) than HIV negative women (10.8%). The multivariate regression analysis of the predictors of OV suggests that HIV positive women are not more likely to experience OV. Instead, we find evidence that HIV positive women are less likely to be subjected to physical violence (AOR=0.512; CI: 0.369-0.710), non-consented care (AOR=0.457; CI: 0.244-0.859) and non-dignified care (AOR= 0.688; CI: 0.513-0.923).

Conclusions: The study shows high rates of OV among all women. However, we found no evidence that HIV positive women were at higher risk to experience OV than HIV negative women. Evidence based interventions are required to address OV due to its threat to facility-based childbirth and the PMTCT cascade of care.

Background

Globally, there is still a high number of maternal deaths, although many of these deaths could be prevented by providing women quality maternal health care [1, 2]. In most developing countries with high maternal mortality ratio, the policy focus has been to increase the number of deliveries in health care facilities (clinics, hospitals) where skilled personnel attend to the needs of pregnant women. This has resulted in the cumulative decline of global maternal mortality estimates over the past 15 years by some 44% with nearly two thirds of the decline occurring in Sub-Saharan Africa [1]. Ensuring access to skilled birth attendance and essential obstetric care is crucial to reduce maternal mortality and to achieve the Sustainable Development Goal 3.1 (reduce the global maternal mortality ratio to less than 70 per 100,000 live births) [3, 4]. However, skilled birth attendants do not guarantee quality care [5] and women have no confidence in the health care system if skilled birth attendants are inhumane and unwelcoming to their clients [6]. In Ghana, there have been demonstrable improvements in the maternal mortality ratios from 451 maternal deaths per 100,000 live births in 2007 to 310 maternal deaths per 100,000 live births in 2018 [1, 2, 7]. Despite this positive trend, there is a concern that further improvements will be difficult to achieve due to women's reluctance to use facility-based services for childbirth. Just a little over half of all pregnant women (54.2%) deliver in health facilities [6] and this is partly explained by the prevalence of abuse in maternity care services in Ghana [8, 9].

This problem is not unique to Ghana, there are studies in other contexts, including Nigeria and Tunisia, where women delivering at health care facilities often provide shocking reports of obstetric violence [10, 11]. In maternal care, obstetric violence (OV) involves the abuse and humiliation of women by health care professionals or institutions which manifests in direct physical and verbal abuse, humiliation, non-consented care and detention in health facilities after childbirth [8]. Perez D' Georgio [12] (p. 201) broadly defines OV as "the appropriation of the body and reproductive processes of women by health personnel, which is expressed as dehumanized treatment, an abuse of medication, and to convert the natural processes into pathological ones, bringing with it loss of autonomy and the ability to decide freely about their bodies and sexuality, negatively impacting the quality of life of women." Other terminologies such as "dehumanized care", "mistreatment and abuse", and "disrespect and abuse" have been adopted by scholars to describe the use of violence during childbirth. In this study, OV and "mistreatment and abuse" are used interchangeably. Previous studies of such abuses have provided prevalence estimates ranging from 39% in Guinea up to 67.7% in Nigeria [13].

While pregnant women generally experience various stressors, pregnant women living with HIV have increased vulnerabilities relating to concerns on discrimination, self and child disclosures and worries of mother to child transmission [14]. The transmission from mother to child during pregnancy, birth and breastfeeding is an important driver of HIV. Within the Sub-Saharan Africa region, the present rate of mother to child HIV transmission is 12.2% and efforts to reduce this rate rely on the increased use of facilities for delivery [15, 16]. In 2017, the Joint United Nations Programme on HIV/AIDS (UNAIDS) launched the campaign "Start Free Stay Free AIDS Free" as a follow up to the WHO's 2013 mother-to-child transmission of HIV (Prevention of Mother To Child Transmission, PMTCT-Option B+) intervention. This campaign is designed to accelerate action in 23 countries, one of which is Ghana. With a prevalence rate of 2.0% in 2019 in Ghana, women account for 65% of the estimated 334,713 persons living with HIV as of 2018 [17, 18, 19]. The PMTCT (Option B+) strategy recommends for all pregnant women living with HIV to be immediately provided with lifelong treatment, regardless of cluster of differentiation 4 (CD4) cell counts, which indicate the level of HIV in the body. In order for PMTCT programs to be successful, women have to attend antenatal care at a health care facility, give birth at the facility and use the post-natal services.

However, OV undermines the success of PMTCT programs. HIV positive women may avoid using facility-based services for childbirth due to OV, thereby heightening mother to child transmission, exposing unskilled birth attendants to HIV infection and further inhibiting women's access to special care as HIV positive mothers. Yet the prevalence of OV among HIV positive women has so far received little attention. There are a small number of reports stating that HIV

positive women report higher levels of OV when compared to HIV negative women, but these are mainly anecdotal and are not peer reviewed [20–22]. Thus, there is little rigorous evidence on how HIV positive women with recent birth history experience abuse and mistreatment during child delivery compared to HIV negative women. The extent to which abuse of HIV positive women might impact the PMTCT Option B + continuum of care, particularly at the level of clients giving birth at a facility, adhering to maternal and infant follow-up visits and antiretroviral (ARVs) post-delivery and bringing their babies for HIV testing, has received minimal attention [23–25].

To our knowledge there are only three small studies that have analyzed the variations in mistreatment, abuse and inhumane treatment among pregnant women living with and without HIV. In a study in Tanzania involving 2,000 women of which 147 were HIV positive, there was no significant difference in abuse and mistreatment between women living with HIV (12.2%) and HIV negative women (15%) [26]. In Malawi, in a total sample of 2,109 women, the 111 HIV-positive women had higher audio and visual privacy (one of the sub constructs defining non-confidential care), increased odds of being asked about their preferred delivery position (a sub measure of abandon or denial) and were more likely to be asked if they had any problems or concerned [27]. However, a study of a single facility in urban Ghana of 253 women, including 93 HIV positive clients, found that pregnant women who were HIV positive had increased odds of being mistreated and abused [28]. Beyond these studies, there is the need to investigate the link between HIV status and the forms of OV and to compare whether HIV positive women are at higher risk of being abused during facility births. In this study we therefore address the important question of whether HIV positive women experience higher levels of OV during facility based childbirths compared to HIV negative women. Our study focuses on the Ashanti and the Western regions of Ghana.

Methods

Study design and setting

From September to December 2021, we conducted a facility-based cross-sectional study in eight health facilities in the Ashanti and Western regions of Ghana. These two regions are home to approximately 25% of Ghana's total population. Each facility is a public health facility, has integrated child and maternal health units and antiretroviral (ART) clinics. All care pre-, during- and post-delivery are free of charge to the clients as part of the National Health Insurance Policy introduced by the Ghanaian government in 2008. In each of the two regions, four facilities were selected, two from rural and two from urban locations. Within the urban setting in Ashanti Region, the Maternal and Child Hospital and Tafo Government Hospital were selected while the Nkekaasu Government Hospital and Ejura District Hospital were selected in Rural Ashanti. In the Western Region, the Kwesimintsim Polyclinic and Essikado Government hospital were the two urban hospitals selected, while Agona Nkwanta Health Centre and Dixcove Government Hospital, represent the rural communities that were selected for the study.

Sampling

Since we wanted to sample women who had recently given birth, we applied a purposive sampling strategy and sampled women who were attending the health facility either for postnatal care or for child immunizations. Women who fulfilled the following criteria were enrolled: they are at least 15 years old, reside in the two regions, gave birth in the sampled health facility between January 2020 and December 2021, had knowledge of their HIV status and were willing to participate. Almost all women (98.2%) attended antenatal clinics where HIV tests are routinely administered. HIV status was self-reported by the participating women.

Using the single population proportion formula for estimating sample size [29] with an assumed 50% of the population to experience OV at the 95% confidence level, a relative precision of 5% and with a non-response rate of 10%, a sample of 1,854 women were enrolled, of which 22 were HIV positive. An additional 288 HIV positive women were sampled purposively in the ART clinics.

Data Collection And Recruitment

The study population involved women who had delivered in the health care facilities within the past 24 months. An interviewer administered questionnaire was used to collect data using the Survey-To-Go data collection tool at the Child Welfare Clinic for immunisation, at the ART clinic visits post-delivery or were scheduled at a convenient place like in the home of HIV positive clients. The enumerators were all trained in backward translation of the questionnaire into the Akan language for consistency and ease. Through the purposive sampling, eligible women were enrolled during clinic visiting days until the last study recruitment day. The data collection for each facility continued until the allocated sample size was achieved. Daily data monitoring was carried out with data quality queries raised by the researchers where issues emerged.

Since no validated questionnaire for OV was available to us, we developed a questionnaire based on Bowser and Hill's [30] typologies of OV. The questionnaire covered socio-demographic characteristics, reproductive and maternal health history, experiences of the different forms of OV during childbirth, the consequences on their physical and mental health, decisions to reuse facility-based childbirth services in the future, and PMTCT care. The questionnaire was reviewed by public health experts and we conducted a pilot test with the target population.

Outcome Variables

Any form of OV was the main outcome variable and OV was defined in accordance with the seven performance indicators developed by Bowser and Hill [30] with a total of 35 verification indicator criteria for measuring OV compositely. The seven categories of OV are: non-dignified care, non-consented care, discriminated care, non-confidential care, neglected care, detention in the health facility and physical abuse. These were assessed by making reference to

respondent's last childbirth experience. A particular abuse was recorded if respondent answered "Yes" to at least one question eliciting experience of different levels of abuse that summarily represented an OV type or category. A woman experienced **physical violence** if she was beaten, pinched, had her mouth covered, legs held, stitched without anesthesia, and slapped during labour and delivery. A woman experienced **non-dignified care**, if they indicated that they had been verbally abused, shouted or yelled at, mocked, blamed, had their sexual life disrespected or reported offensive criticisms or remarks from health workers. Women who report **non-consented care** are those who had vaginal examinations or other medical procedures performed on them without their prior approval.

A woman experienced **discrimination** if the treatment provided to her was of a lower standard on the basis of her tribe, socio-economic status or HIV/AIDS status. Experience of **non-confidential care/lack of privacy** was recorded if the woman reported the presence of non-medical staff present or had her medical information disclosed to others without her permission. Women who experienced **neglect or abandoned care** had been ignored when they needed care or ignored when they requested care or support. **Detention** in the health facility as an abuse occurred when women were detained in health facilities for their inability to pay medical bills or bring required materials for childbirth.

Explanatory Variables

The analysis of OV builds on the cross-country analysis by Bohren et al. [13] and on our previous study on OV in Ghana [9]. Associated factors of OV are demographic characteristics and obstetric history variables, including women's age, marital status, level of education, the number of births and education. The main explanatory variable of interest is the HIV status of the clients.

Statistical Analysis

The clean data were extracted and exported to Stata version 16. The descriptive data analysis has been presented using percentages, standard deviations and means. Multivariate logistic regression models were used to analyze obstetric violence and its associated factors. We develop seven different models, each one uses one form of OV as dependent variable. Associated factors are our explanatory variables. The dependent variables are coded 1 if the individual experienced OV and 0 if not. Adjusted odds ratios (AOR) were computed with 95% confidence intervals (95% CI).

Ethical approval

Ethical approval for the conduct of this study was received from the Ghana Health Service Ethics Review Committee with approval number GH-ERC-010/06/2 and the Ethics Committee of the University of Konstanz (IRB Statement 37/2021). Approval for the conduct of the study in each facility was also taken from the health facility managers after detailed description of the project rationale and objectives were presented to them in a project information sheet. Individual consent was sought from all participants while the collected information were anonymized.

Results

Socio-demographic characteristics of the participants

A total of 310 HIV positive and 1,832 HIV negative women were enrolled in the study. Table 1 provides the relative frequencies. On average, HIV positive women were older, and the age categorizations differ significantly between the two groups ($\chi^2=34.893$, $p<0.001$). Nearly seven out of ten HIV positive women were aged above 30 years compared to a lesser number of five out of 10 HIV negative women in the same age bracket. There were also fewer teenage mothers among HIV positive women (2.6%) compared to HIV negative teenage mothers (3.9%). In terms of education and marital status, HIV positive women were not statistically different compared to HIV negative women. With a higher number of previous births, HIV positive women significantly differed by their number of births in comparison to HIV negative women (78.1% vs. 72.3%, $\chi^2=4.447$; $p<0.035$).

Table 1: Socio-demographic characteristics of the participants

HIV Status of women (N= 2,142)				
	HIV Positive N1 (%)	HIV Negative N2 (%)	Total N3 (%)	χ^2 (p-value)
Age				34.893 (0.001)
Age (15-19 yrs)	8 (2.6%)	72 (3.9%)	80 (3.7%)	
Age (20-29 yrs)	104 (33.5%)	922 (50.3%)	1,026 (47.9%)	
Age (>30 yrs)	198 (63.9%)	838 (45.7%)	1036 (48.4%)	
Education				0.025 (0.875)
No education	25 (8.1%)	143 (7.8%)	168 (7.8%)	
At least primary education	285 (91.9%)	1,689 (92.2%)	1974 (92.2%)	
Marital Status				0.290 (0.590)
Single	46 (14.8%)	294 (16.0%)	340 (15.9%)	
Married, cohabiting, widowed	264 (85.2%)	1,538 (84.0%)	1,802 (84.1%)	
Number of birth				4.447 (0.035)
First birth	68 (21.9%)	507 (27.7%)	575 (26.8%)	
Second or more births	242 (78.1%)	1,325 (72.3%)	1,567 (73.2%)	

Prevalence of obstetric violence by HIV status of women

Table 2 shows that any form of OV was found to be relatively lower among HIV positive women (189 out of 310, 61.0%) compared to HIV negative women (1,193 out of 1,832, 65.1%), though the difference is not statistically significant ($\chi^2=1.99$; $p=0.158$). In general, non-confidential care is the most common form of OV with 35.2% for HIV negative and 32.3% for HIV positive women. Yet, there is no statistically significant difference by HIV status ($\chi^2=0.62$, $p=0.431$).

For other categories of OV, there were statistically significant differences by HIV status: (i) HIV positive women experienced less non-dignified care with a prevalence of 21.3% compared to 28.2% for HIV negative women ($\chi^2=6.428$, $p<0.05$); (ii) HIV positive clients experienced less physical violence with 15.5% compared to 27.3% for HIV negative women ($\chi^2=19.420$, $p<0.001$), (iii) a lower number of HIV positive clients (3.5%) experienced non-consented care compared to HIV negative women (7.6%) ($\chi^2=6.64$, $p<0.05$).

However, HIV positive women reported more discriminated care (13.5%) compared to HIV negative women (10.8%), though the difference is not statistically significant. While the most dominant form of OV experienced among HIV positive women was neglected or abandoned care with a prevalence of 32.6%, non-confidential care was most commonly reported among HIV negative women (35.2%).

Table 2: Prevalence of obstetric violence by HIV status of women

HIV Status of women (N=2142)				
Obstetric violence categories	Total (N= 2, 142)	HIV Positive (N1= 310)	HIV Negative (N2= 1,832)	Test χ^2 (p-value)
Any form of obstetric violence	1382 (64.5%)	189(61.0%)	1,193 (65.1%)	1.99 ($p=0.158$)
Non-dignified care	583 (27.2%)	66 (21.3%)	517 (28.2%)	6.43 ($p<0.05$)*
Non-consented care	150 (7.0%)	11 (3.5%)	139 (7.6%)	6.64 ($p<0.05$)*
Discriminated care	240 (11.2%)	42 (13.5%)	198 (10.8%)	2.00 ($p=0.157$)
Non-confidential care	754 (35.2%)	103 (32.3%)	651 (35.5%)	0.62 ($p=0.431$)
Neglected or abandoned care	709 (33.1%)	101 (32.6%)	608 (33.2%)	0.04 ($p=0.834$)
Detention in the health facility	160 (7.5%)	21 (6.8%)	139 (7.6%)	0.25 ($p=0.615$)
Physical abuse	548 (25.6%)	48 (15.5%)	500 (27.3%)	19.42 ($p<0.001$)***

Factors associated with the categories of obstetric violence

We further investigated which characteristics predict women's experience of the different forms of OV (Table 3). Our statistical approach is based on a previously developed and tested model [9,13]. In addition the HIV status of women is added as a covariate to the model. Similar to previous findings [9,13], socio-economic characteristics provide only weak explanatory power, none of the variables is a consistent predictor for either any form of OV or the different forms of OV (columns 2-7). The strongest predictive power for any form of OV was marital status. Compared to women who were married, single mothers

were more likely to experience any form of obstetric violence (AOR= 1.521; CI 1.145-2.021), non-confidential care (AOR=1.427; CI: 1.094-1.862) and non-dignified care (AOR=1.350; CI :1.018-1.790).

Age was only significant in two of our models. Teenage mothers (15-19) were more likely to be physically abused (AOR= 2.460; CI: 1.451-4.170), while women between in the age group 20-29 had a lower risk of being neglected after birth (AOR=0.80; CI: 0.657- 0.982) compared to mothers who were older than 30 years. Education was only statistically significant in the non-consented care category and the discriminated care category, while women with no formal education are more likely to experience these forms of violence (non-consented care: AOR=1.725; CI: 1.020-2.916; discriminated care: AOR=1.562; CI: 1.007-2.423) compared to women with at least some education.

Overall, HIV status also has little explanatory power. In the models with dependent variables such as any form of OV, detention, neglect or abandoned care, non-confidential care and discriminated care, HIV status is statistically insignificant. In fact, the analysis shows that HIV positive women are less likely to be physically abused during labour and delivery compared to HIV negative women (AOR=0.512; CI: 0.369-0.710). Similarly, HIV positive status was protective for women in respect of securing consented care (AOR=0.457; CI: 0.244-0.859), and less likely to encounter non-dignified care compared to HIV negative women (AOR=0.688; CI: 0.513-0.923). The number of births given by the respondents has no statistical significant effect on any form of OV.

Table 3: Multivariate multiple logistic regression models to assess factors potentially associated with forms of obstetric violence

	Any Form of OV	Physical Abuse	Detention	Neglected	Non confidential	Non Consented	Non Dignified	Discriminated
Age								
15-19 years	1.160 (0.649-2.075)	2.460 (1.451-4.170)***	1.750 (0.775-3.951)	0.614 (0.353-1.069)	0.792 (0.464-1.352)	1.672 (0.714-3.916)	1.120 (0.645-1.946)	1.403 (0.673-2.926)
20-29 years	0.873 (0.718-1.062)	1.219 (0.980-1.517)	1.226 (0.852-1.765)	0.80 (0.657-0.982] *	0.930 (0.763-1.132)	1.116 (0.769-1.620)	1.034 (0.836-1.278)	0.957 (0.709-1.293)
≥ 30 years	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Education								
No education	1.311 (0.929-1.849)	1.326 (0.933-1.884)	1.521 (0.892-2.594)	0.962 (0.686-1.349)	0.988 (0.709-1.378)	1.725 (1.020-2.916)*	1.347 (0.959-1.893)†	1.562 (1.007-2.423)*
At least some education	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Marital Status								
Single	1.521 (1.145-2.021)**	1.040 (0.778-1.392)	1.141 (0.720-1.810)	1.281 (0.976-1.680)†	1.427 (1.094-1.862)**	1.203 (0.743-1.949)	1.350 (1.018-1.790)*	1.231 (0.826-1.836)
Other than single ¶	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
No. of Birth								
First Birth	1.198 (0.951-1.509)	1.111 (0.867-1.423)	1.108 (0.740-1.660)	1.024 (0.811-1.292)	0.871 (0.692-1.097)	0.940 (0.611-1.445)	0.875 (0.683-1.121)	0.836 (0.583-1.198)
≥2 births	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
HIV Status								
HIV Positive	0.830 (0.646-1.067)	0.512 (0.369-0.710)***	0.930 (0.575-1.503)	0.936 (0.722-1.213)	0.885 (0.684-1.146)	0.457 (0.244-0.859)*	0.688 (0.513-0.923)*	1.279 (0.891-1.836)
HIV Negative	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
Data are odds ratio (95% CI).								
Results with significant p-values (p<0.05) are indicated. †p=0.10, *p<0.05, **p<0.01, ***p<0.001.								
¶ This includes married, divorced, widowed, or living with partner.								

Discussion

In this study, we investigated the prevalence of OV among HIV positive women compared to HIV negative women in the Ashanti and Western regions of Ghana. The results of this study indicate a high prevalence of OV experienced by all women (64.5%), irrespective their socio-economic characteristics. This result is consistent with findings from previous prevalence studies for the Sub-Saharan African region [28,31,32]. Based on the extant literature on generalized enacted stigma against persons living with HIV [33-35], this study examines the important question of whether HIV positive women face a higher risk of OV.

First, we found that HIV positive women reported lower rates of OV than HIV negative women (61.0% versus 65.1%), however the difference is not statistically significant. This finding resembles a previous study from Tanzania where being HIV positive had a protective effect in experiencing OV [26]. However, this finding contradicts an earlier study reporting an elevated likelihood of OV for HIV positive women in a Ghanaian hospital [28]. Our findings sharply contrast qualitative evidence presented in policy reports for Nigeria, South Africa, Cameroun and Zambia [20-22], suggesting that HIV positive women bear a higher burden of OV compared to HIV negative women.

Within the categories of OV experiences, there were however significant differences in experiencing physical abuse, with HIV negative women having a statistically significant higher likelihood of 27.3% to be subjected to physical abuse during delivery compared to 15.5% for HIV positive women. A significantly lower number of HIV positive women experience non-dignified care (15.5%) as manifested mainly in the form of verbal abuse, compared to HIV negative women (27.3%). These findings are rather surprising, given the reported pattern of stigmatization and abuse of HIV positive women in Ghana [36]. One possible explanation is that the relative lower levels of physical violence against HIV positive women are due to a fear of infection. A qualitative study of midwives' perspectives on OV in Ghana revealed that midwives reduced physical contacts with HIV positive women due to fear of infection [8]. Furthermore, the lower levels of OV might mirror the developments in the wider community level's reduction of stigmatizing behaviors towards HIV positive persons in general HIV clients (more than two thirds being women). A report using the HIV stigma index in Ghana indicates a decline in verbal abuse and an increased willingness to accept Persons Living With HIV (PLWHI) [37]. The lower odds of verbal abuse (non-dignified care) of HIV clients established in this study are consistent with the reduction in negative attitudes among Ghanaians (including health care providers) towards HIV positive persons over time. Thus, our findings on OV against HIV positive women may reflect the reduction of stigmatizing attitudes as expressed in verbal abuse of PLWHI. While the stigmatizing attitudes have declined in the wider Ghanaian society, we also find little evidence that there is more discrimination against HIV positive women compared to HIV negative women. Our data indicate that although more HIV positive women (13.5%) felt discriminated against than HIV negative women (10.8%), this difference was not statistically significant. Likewise, in our multivariate regression models, HIV status does not significantly predict the likelihood of experiencing discriminated care (AOR=1.279; 95% CI=0.891-1.836).

Our study also shows that significantly fewer HIV positive clients experience non-consented care (3.5%) when compared to HIV negative women (7.6%) ($\chi^2=6.64$, $p<0.05$). Thus, procedures of medical consent and approvals were more likely to be considered and upheld for HIV positive women. This could be a reflection of the general level of care and attention that are given to HIV infected persons due to increased efforts at the national and international level to provide optimal clinical services to reduce transmission and increase the life expectancy of PLWHI. Consequently, PLWHI receive special medical attention in Ghana [38], with their rights to consented care most likely being respected.

Evidence from this study reveals that in general, HIV positive women are not more likely to experience abuse during childbirth. While there are no data available for Ghana, evidence from other Sub-Saharan countries suggests that HIV is becoming less stigmatizing in healthcare settings. In studies carried out among HIV positive clients in Cameroon, Senegal and Uganda, less than one in four reported experiencing stigmatization in healthcare settings [39,40,41]. Our findings provide support that HIV positive women may be bearing the fruits of the sustained policy efforts in Ghana to reduce abuse, stigma, discrimination and the reduction of mother-to-child transmission of HIV. These programmes include the UN promoted PMTCT- Option B+ [24], and initiatives by the Ghana AIDS Commission (e.g., "Free to Shine", "Heart to Heart", "Make Me Part of Your World", "I Want to be part of the Game").

The government's policy of treating HIV person humanely and its support by the Ghana Aids Commission and the National AIDS Control Programme might explain our findings, and that this policy is the reason why nurses and midwives are more likely to provide HIV positive clients with higher quality care. Over the recent years, health care providers have become more conscious about their stewardship and accountability towards their HIV clients. Health care workers may have improved their care due to their knowledge that there is an increased professional oversight for health care workers who attend to HIV clients in the ART units. There are also more channels to report abuse within the HIV continuum of care. The combination of these factors may inform HIV care providers to consciously work at providing dignified care to avoid being reported to management about their misconduct. Similar direct and immediate accountability and responsiveness structures are mostly absent within the health facilities for HIV negative women and where they exist, there might not be designated personnel to deal with ensuring that deterring actions are immediately effected. Efforts to provide dedicated and more personalized services to HIV positive clients explains the increasing number of ART specialized clinics with 4,446 hospitals providing PMTCT services to women while 488 ART sites were also established to achieve quality of care for HIV clients within in Ghana as at 2019 [42]. It is also possible that the beliefs and attitudes of healthcare providers towards HIV positive clients has changed. However these beliefs and attitudes, including prejudices which define stigma, were yet to fully translate into positive behaviors [43].

Limitations

Whereas the cross-sectional nature of our study is subjected to the often-cited problem of establishing only correlations, not causality, our study is based on the largest sample to date. The large sample size increases confidence in our findings. Though, due to the dearth of quantitative studies, we did not have any priors on the effect size and could thus not carry out a sample size calculation for HIV positive women. However, to the best of our knowledge, the HIV group in this study is considered very large with 14.47% (out of 2,142 women), particularly when previous studies with similar comparison had only 7.35% (147) HIV clients to compare to a total 2,000 HIV negative women or compared 111 HIV clients to 2,109 HIV negative women [26,27]. Although studies of this nature could be affected by recall biases, our study is not likely to suffer from a large recall bias, as research has demonstrated that clear memories of childbirth lasts up to 20 years and even longer if women experience violence [44,45]. We however acknowledge that this facility-based study may be hampered by social desirability effect as women may under-report their experiences of obstetric violence.

Conclusion

This study provides insights into the prevalence of various forms of OV among HIV positive and negative women in Ghana. Our study found that women living with HIV experience no higher levels of OV than HIV negative women. If anything, the prevalence for certain forms of OV were less prevailing. HIV positive women appear to be less likely to experience physical abuse, non-consented care, and non-dignified care. Nonetheless, it is important to stress that our study found a high prevalence of OV, irrespective of HIV status. The prevalence we found for any form of OV is 64.5%. This finding reveals a problematic birthing atmosphere which has negative implications for the majority of women. This high prevalence poses a barrier to facility-based delivery and helps to explain the relatively low utilization of skilled birth attendance in Ghana. For HIV positive women, this could hinder retention in care and early initiation of anti-retroviral care, which is of great importance to break the chain of transmission. Dealing with HIV therefore requires urgent attention to OV and an inclusion of

humanized birthing guidelines into HIV intervention programs. There is a critical need for the Ghanaian government to introduce policies and measures to reduce the mistreatments and abuse, in order to increase facility use by all women, to break the chain of HIV transmission, and to improve the PMTCT care cascade.

Declarations

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Author contributions

SCYA conceptualized and designed the study, wrote the methodology, collected data and wrote the manuscript. AAY designed the study, acquired funding for the study, wrote the methodology, collected and monitored data, and wrote the manuscript. AH conceptualized and designed the study, secured funding, analyzed the data, and wrote the manuscript. EA conducted the data analysis and prepared the tables. All authors reviewed the manuscript.

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Availability of data materials

The raw data on which this study is based will be made available upon request to the corresponding author.

Ethical approval and consent to participate

The study was reviewed and approved by the Ghana Health Service Ethics Review Committee (GHS-ERC 010/06/21) and the Ethics Committee of the University of Konstanz (IRB Statement 37/2021). Women provided both written and verbal informed consent before participating in the study. Informed consent for teenage mothers who were less than 16 years were provided by their parents/guardians. Illiterate women provided consent after a translation of the information sheet and informed consent were made and signed by their respective witnesses. We confirm that the study was conducted in accordance with the relevant guidelines and regulations according to the Declaration of Helsinki.

Consent for publication

Not applicable.

Competing interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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