

Socioeconomic Determinants of Use of HIV Testing Services among Gender Based Violence (GBV) Survivors in Matabeleland South, Zimbabwe

Sibusisiwe B. Muperere,* Albert Makochekanwa,** Stanzia Moyo[§] & Marvellous Mhloyi[‡]

Abstract

This study estimates a binary logistic regression model to examine the socio-economic determinants of utilizing HIV testing services amongst female gender based violence (GBV) survivors in Matabeleland South, Zimbabwe, using cross-sectional data from 130 female survivors of intimate partner violence (IPV). The findings show that number of children, age of survivor and level of access to healthcare are positively associated with the use of HIV testing services, whereas religion and survivor's marital status are negatively associated with the use of HIV testing services. Programs aimed at improving utilization of HIV testing services should therefore place emphasis on younger women, with a view to raise awareness on the dangers of poor utilization of such services. Furthermore, policy makers should aim to increase resources for improving access to healthcare, particularly by increasing mobile clinics and Victim Friendly Units so that female GBV survivors will be motivated to utilize the HIV testing services.

Keywords: *intimate partner violence, socioeconomic factors, GBV survivor.*

Introduction

Africa has been hit the hardest by the human immunodeficiency virus (HIV) pandemic. Sub-Saharan Africa accounts for more than 70% of the global acquired immunodeficiency syndrome (AIDS) disease burden, with women accounting for more than half the number of people living with HIV worldwide (UNAIDS, 2019). The major drivers of HIV infections among women include vulnerabilities created by harmful cultural practices, unaccommodating attitudes towards sex, and restricted social autonomy of women and girls, which reduce their ability to access reproductive health services such as HIV testing. Gender Based Violence (GBV) in particular, has been singled out as the major driver of HIV infections among women, making female survivors 1.5 times more likely to acquire HIV (UNDP, 2019; UNESCO, 2013; UNFPA, 2018).

UNESCO (2013:12) defined GBV as: “Violence directed against a person because of his or her gender expectations of his or her role in society or culture.” GBV is

* University of Zimbabwe: busibertha@gmail.com

** University of Zimbabwe: almac772002@yahoo.co.uk

§ University of Zimbabwe: stanzia1moyo@gmail.com

‡ University of Zimbabwe: marvemhloyi@yahoo.com

broadly classified into five categories: sexual violence, physical violence, emotional violence, economic violence and harmful traditional practices (UNFPA, 2018). GBV has contributed significantly to HIV and AIDS, and consequently HIV/AIDS related illnesses have become the major cause of death among women aged between 15 to 49 years of age (UNAIDS, 2019). Investment for improving the nation's productive capacity is diverted to address the disease burden accounted to HIV. The connection between health outcomes, GBV and economic growth imply that poor health outcomes affect the economy negatively by lowering the productivity of the country's labour force (Grossman, 2000). Thus, GBV's effect on the use of HIV testing services has become both a public health issue and a source of economic crisis, with devastating consequences on women's health. GBV hampers economic development and undermines economic outcomes through costs of treating illnesses and loss of productivity. In addition, access to HIV services is constrained among female survivors, despite the ill effects of the pandemic. UNAIDS (2019) reports that 52% of young women in rural areas and 47% of women in urban areas were unable to make decisions about their own health. As such, many women are unable to commence treatment in time to manage the disease effectively.

Zimbabwe is among the top five countries with the highest HIV prevalence (UNFPA, 2018). As of 2017, Zimbabwe had 1.3 million people living with HIV, whereby 61% of them were women (UNDP, 2019). This is consistent with the proposition that HIV has become a feminized epidemic. The disparity across gender is high; among young adults of ages 20-24 years, the prevalence is three times higher (8.5%) amongst females compared to males (2.3%) (UNDP, 2019). Efforts by the government and development partners to combat the disease have led to decreased HIV infections from 16.5% in 2012 to 13.3% in 2017 (UNDP, 2019). The decrease in the HIV infections was facilitated by the commitment that Zimbabwe made as a country under the UN General Assembly Political Declaration on HIV/AIDS, which seeks to end AIDS by 2030 (UNFPA, 2018). One of the commitments is that Zimbabwe pledged to increase the number of people who are aware of their status to 90% by 2020 (UNDP, 2019). Through the Population Services International, Zimbabwe was able to increase its testing services from 19.4 million to 22 million in 2015 against a target for that year of 25.2 million (UNDP, 2019). The government further launched the HIV Self-Testing Pilot in 2017, which led to an increase in the number of people tested.

Among major impediments to accessing HIV testing services are harmful gender norms and GBV. In Zimbabwe, GBV is rooted in the patriarchal nature of the Zimbabwean society, in which GBV and gender inequality are reflected in statistics, which indicate, for example, that 68% of men believe that a woman has no right to refuse sexual intercourse if she knows that her partner has had sex with other women (UNDP, 2019; ZIMSTATS, 2015). Similarly, 80% of women believe that women have a right to ask their partner to use a condom if they know their partner has a sexually transmitted infection (STI) (ZIMSTATS, 2015).

Unequal power relations are reflected in child marriages, where young girls risk getting HIV due to their inability to negotiate for safe sex. Most of those girls also lack adequate knowledge about their reproductive health rights, since they are school dropouts who do not have enough capacity to make sound decisions about their reproductive health (UNDP, 2019). A vast body of literature reveals that women who pursue HIV testing within the context of marriage or an intimate relationship are vulnerable to victimization from their spouses, who accuse them of having multiple sexual partnerships (UNDP, 2019; UNAIDS, 2019; Rutaremwa & Kabagenyi, 2016). In the case of the already abused women, utilization of services such as HIV testing might result in further stigmatization emanating from a spouse who accuses the woman of bringing the disease in the marriage, should they test positive.

Zimbabwe's legal framework has made efforts to protect women through the Constitution, but GBV remains a pertinent challenge that has constrained most women's right to fail to exercise their rights fully. The Constitution of Zimbabwe, through the Criminal Law (Codification and Reform) Act of 2006, criminalizes all forms of violence and forbids sex with girls under 16 years of age. Other policies enacted include the Domestic Violence Act (2006), which seeks to protect survivors of domestic violence and provide for matters and incidentals connected with it. The nation also adopted the National Gender Policy (2013-2017), which has eight priority areas that include health and gender. In addition, the Gender and HIV Implementation Plan 2017-2020, aims at addressing violence against women, failure of women to negotiate for safer sex, and limited access to HIV services, among others (NAC, 2018).

Despite such efforts, women continue to live in fear of GBV and, in so doing, forfeit their reproductive health rights. The Zimbabwe Statistical Agency (ZIMSTAT) (2015) reported that IPV perpetrated by men against women remains an issue of concern in Zimbabwe, and stands at a national average of 35%. The situation is worse in the rural areas, with relatively poor access to both information and health services. Spousal violence or intimate partner violence (IPV) is the most common form of violence, which ranges from 21% in Matabeleland North to 45% in Mashonaland West (UNFPA, 2018). In Matabeleland South, IPV stands at 32.4%, which poses a risk of low utilization of services such as HIV testing among survivors in the province. The province has the highest HIV prevalence, which necessitates the need for high uptake of HIV testing services (ZIMSTAT, 2015). This study therefore sought to investigate the socioeconomic factors influencing utilization of HIV testing services in Matabeleland South by estimating the responsiveness of HIV testing services utilization to socioeconomic factors amongst GBV survivors in the region.

Conceptual Framework

This study adopted the Behavioural Model for Health Service Utilization originally developed by Andersen and Newman in the 1960's, which has undergone a number of adaptations. The model seeks to investigate factors that either impede or facilitate utilization of health care. It is a widely used theory for conceptualizing healthcare

utilization, as evidenced by many studies that have utilized this theoretical model (Azfreidrick, 2016; Rutaremwa & Kabagenyi, 2016; Ngome, 2016). The strength of the model centres on its efficacy in assessing determinants of utilization at an individual level. Moreover, the model specifies how the individual characteristics interact with societal factors.

The Behavioural Model posits that health service utilization is influenced by three key determinants, which are i) predisposing factors ii) enabling factors and iii) need factors. Predisposing factors are the sociocultural characteristics of an individual that occur prior to the illness. They are aspects of the social structure that contribute to the need for health services due to one's status or identity in the surrounding community as well as availability of resources in the physical environment, which facilitate the decision to make choices with regard to health. Such factors include age, marital status, gender, and religion (Rwatemala & Kabagenyi, 2016; Erena et al., 2019; Hensen et al., 2015; Kessy & Lyamula, 2020; Takarinda et al., 2017).

Enabling factors include family, personal and community factors, which should exist in order for individuals to utilize health care services. Such factors include access to health care facilities and wealth or income (Qiao et al., 2018; Muyunda et al., 2018; Gazimbi & Magadi, 2017; Usadolo, 2019; Muhinda & Pazvakavambwa, 2017). The need factors include self-perceptions of the need for health care and objective appraisals or evaluated needs by the health personnel. These may include the need for testing in the case of rape, or an intrinsic motivation from the individual to seek testing after experiencing symptoms of a disease.

Empirical Literature Review

Various socio-economic determinants of use of HIV testing have been identified in the literature. These include marital status, income, education level, number of children, age difference with partner, age, level of healthcare access, level of autonomy and religion.

Erena et al. (2019) conducted a study to examine the determinants of uptake of HIV testing and counselling services amongst women in Ethiopia. The study utilised cross-sectional data from the Ethiopian Demographic Health Survey and found that higher socio economic status and being ever married were positively associated with the uptake of HIV testing services, whereas religion and having a stigmatizing attitude had negative associations with the uptake of HIV testing services. Erena et al. (2019) noted that a higher socio-economic status allowed a woman to have access to better healthcare, which increases the utilization of HIV testing services. Being married increased the perceived risk of infection, thereby motivating increased use of HIV testing services. As for religion, Usadolo (2019) also found a negative association between the use of HIV testing services and religion in Benin Nigeria, similar to Erena et al. (2019). According to Usadolo (2019), Christians held the belief that being religious gave them immunity from the HIV infection. As such, they were not motivated to use HIV testing services.

Sheki (2019) investigated the factors affecting use of voluntary HIV and counselling services in South Western Ethiopia. The study used a multivariable binary logistic regression to investigate association between use of HIV testing services and various factors. The study showed that perceived benefits and the level of education were positively associated with use of HIV testing services, whereas long waiting time and stigma were found to be negatively associated with use of HIV testing services.

Obemeyer et al. (2013) conducted a multicounty study, to examine the socioeconomic determinants of HIV testing services in Burkina Faso, Kenya, Malawi, and Uganda. The researchers used the modified Poisson regression and multinomial logistic analyses. The findings from their study revealed a positive association between higher socio economic status and uptake of HIV testing services. These results were similar to those found by Gazimbi and Magadi (2017) in a multi-level analysis of determinants of HIV testing in Zimbabwe. Furthermore, the results showed that non-poor women are more likely to use HIV testing services than those who are poor. All other socioeconomic factors were found to be insignificant in the use of HIV testing services.

Ibrahim et al. (2013) conducted a study in Nigeria to explore the determinants of using HIV testing services. Their study used data from a population based survey and employed the Chi square and the logistical regression approach for analysing the data. The results showed that knowledge of counselling and testing centres, education status, place of residence, sexual intercourse experience, geopolitical zone and socio economic status were significant determinants of uptake of HIV test among young people in Nigeria. Education and knowledge of access points for HIV testing services were positively associated with testing for HIV and an educated person was found to be twice more likely to seek HIV testing services relative to an uneducated person. The study found the same likelihood for those who had knowledge of where to access HIV testing services relative to those who did not have the knowledge. As well, people in the urban areas had a higher likelihood of utilizing HIV testing services compared to those in the rural areas. This result was accounted to a high accessibility of HIV testing services in urban areas relative to the rural areas. Additionally, women of middle to high-income status were also more likely to seek HIV testing services than those in the poor category.

Rutaremwya and Kabagenyi (2016) conducted research on the determinants of use of HIV testing services among women in Uganda. The study analysed cross-sectional data using a logistical regression and found that age, marital status, place of residence, wealth and educational attainment were significant determinants of utilization of HIV testing services. Positive associations were observed between education, higher wealth and residing in the rural areas, with uptake of HIV testing services. From their study, being currently married or formerly married was positively associated with the use of HIV testing services. The study noted that the result with respect to marital status was gauged on the perception of high risk of infection among married couples due to frequent sexual encounters in a

marriage. In other studies, such as Mboya et al. (2012) and Budawini et al. (2018) in Tanzania and Cameroon, respectively, marriage was found to have negative associations with the utilization of HIV testing services. These studies found the freedom of a woman in marriage to be limited, ; which constrains the utilisation of sexual and reproductive health services. Consequently, women were not inclined to utilize HIV testing services, even covertly, for fear of marital separation.

Kessy and Lyamula (2020) conducted a survey on the factors influencing use of HIV testing services amongst women in Dar es Salaam, Tanzania, using primary data collected through structured questionnaires. The study used bivariate analyses and logistical regression for analysing the determining factors for use of HIV testing services and found that marital status, number of children, and knowledge of where to access HIV testing services and not fearing stigmatization influenced one's decision to utilize HIV testing services. The researchers found that uptake amongst women with at least one child was most likely influenced by mandatory antenatal visits, where HIV testing services were available. Furthermore, uptake was high in this group due to high accessibility of HIV testing services in urban areas, where HIV testing centres were several.

Takarinda (2017) investigated determinants of use of HIV testing services in Zimbabwe, using data from the demographic health survey. The study used the multivariate logistic regression approach, to analyse the data and found, age, marital status, parity, and socio economic status as significant predictors of uptake of HIV testing services. Being married, being older, and having more children, education, as well as higher socio economic status, were associated with higher odds of utilizing HIV testing services.

Muhinda and Pazvakavambwa (2013) also conducted a study in Namibia to assess patterns and determinants of HIV testing among women. The study utilized data from the Namibia Demographic Health Survey to fit a logistic regression to investigate the determinants of HIV testing among women in Namibia. The study found the HIV testing to be influenced by the number of sexual partners, culture, socio-economic status, and marital status. Higher education, socio economic status and being married were positively associated with the use of HIV testing services.

Hensen et al. (2015) conducted a study in Zambia to investigate factors associated with multiple HIV testing, by fitting cross-sectional data to a logistical regression. The study found that education and employment were significantly positively associated with use of HIV testing services.

The studies reviewed above show that various factors affect women's use of HIV testing services. However, research on the use of HIV testing services by female survivors of GBV, particularly in Zimbabwe, is limited, despite the negative economic and social consequences brought about by GBV. Against this background, this study sought to investigate the factors affecting use of HIV testing services amongst female GBV survivors in Matabeleland South, Zimbabwe.

Study Setting

This study was conducted in the province of Matabeleland South in Zimbabwe. According to the 2012 Census report, the total population of the province was 683,893, with 43 % of the population being below 15 years of age and only 6% was above 65 years of age (ZIMSTATS, 2012). The population of the province is mostly rural, with only 12% residing in the urban areas. Furthermore, about 48% of the population was married, more widowed females than males. About 50% of the population in Matabeleland South was currently in school, and 33% of the female population aged 13-24 years had left school (ZIMSTATS, 2012). Umzingwane and Bulilima districts were selected for this study out of the ten districts of Matabeleland South. These districts were selected purposely for data collection because they have a high number of organizations working with GBV survivors in Matabeleland South. Furthermore, the province has the highest prevalence of HIV of 21.5%; hence, the utilization and access of services such as HIV testing are a necessity.

Methodology

Data

This study targeted female survivors of IPV, aged between 15 and 49 years, following the definition of reproductive age group, by WHO (2021). The study also selected the particular age group because they are the ones in need of sexual and reproductive health related services (SRHR) such as HIV testing due to high sexual activity. The data were collected through a survey that was carried out from March 2020 to April 2020. and used to ascertain the socioeconomic determinants of HIV testing services utilization and to quantify the magnitude of change they effected on HIV testing services utilization.

The sample size for this study was determined using the Cochran (1977) formula for sample determination:

$$n = \frac{z^2 pq}{e^2}$$

Where, n is the sample size, z is the selected critical value of desired confidence level of 99% in this study, p is the proportion of an attribute that is present in the population (proportion of women in an intimate relationship who are experiencing violence).

According to ZIMSTATS (2015) Demographic Health Survey, the proportion of women in an intimate relationship experiencing spousal violence in Matabeleland stood at 32.4%, therefore p is 0.324 and $q = 1 - p = 0.676$ is the estimated proportion of the population that has experienced IPV and e is the allowable error, which is equal to $\pm 10\%$ in the present study, while z value is 2.57. Therefore, the sample size for the study was calculated to be 144 female GBV survivors.

This study used a sample purposefully sampled from Umzingwane and Bulilima to represent the province because the districts have a high number of

organizations actively working on GBV issues and women's rights. Purposive sampling was a useful technique whose application was proper, since the target population was that of survivors of GBV, which is a very sensitive demographic variable. The researchers identified women who worked with ZWLA, Zimbabwe Women's Lawyers Association and the YES trust in Bulilima. The sample was drawn from community groups that comprises GBV survivors that are supported by the two organizations. Obtaining responses from this population therefore required engaging organizations whom the survivors trusted and were willing to open up to the researchers. As such, Umzingwane and Bulilima were ideal for the purposes of this study. Ward selection was done conveniently, and three wards were selected for both the Umzingwane and Bulilima districts. The wards selected were wards 5, 17 and 22 in Umzingwane and wards 11, 15, and 7 in Bulilima.

Questionnaires were administered to all the women in the sample who were aged between 15 and 49 years, and were in a union (married) or relationship. GBV survivors were identified by whether or not they had indicated experience of any form of GBV from their spouse on the GBV section of the questionnaire.

Ethical Considerations

The research followed ethics that conformed to the ethical guidelines prescribed by the Department of Economics of the University of Zimbabwe. The researcher obtained a formal letter from the Department of Economics, granting her permission to collect data in the Matabeleland South Province. Furthermore, the researcher availed all information regarding the research study's objectives to the respondents. Prior to completion of the questionnaires, the researcher gave an account of who she was, the purpose of the research and objectives of the study. The researcher sought consent from the respondents, and explained clearly that the findings would be used purely for academic purposes, and that confidentiality would be adhered to in handling the information provided.

Empirical Model

Responses from all the administered questionnaires were initially screened and questionnaires where a woman had indicated that she experienced spousal violence, were selected for the analysis. In addition, the questionnaires were checked for completeness and consistency, before the data were processed with STATA statistical software. The survey had a 90% response rate and 130 questionnaires were successfully completed.

Pre-estimation Tests

Preliminary tests were conducted as a way of ensuring that the model satisfies all the necessary model assumptions, before proceeding to the regression estimates. A multicollinearity check was performed before estimation, together with the goodness-of-fit test for the model.

Multicollinearity Check

The study conducted a multicollinearity test on the continuous variables to ensure linear independence among the explanatory variables. Table 1 shows the results of the multicollinearity test. All coefficients of the pairwise matrix were less than 0.8, thereby indicating that there was no perfect multicollinearity among the explanatory variables.

Table 1: Pairwise Correlation Matrix

Variable	(1)	(2)	(3)	(4)	(5)
(1) Income	1.000				
(2) Education	-0.092	1.000			
(3) No. of Children	-0.359	0.315	1.000		
(4) Age	-0.263	0.379	0.619	1.000	
(5) Age Difference With Partner	-0.145	0.187	0.359	0.407	1.000

Source: Author's computations

Goodness of Fit Test of the Logit Model

The logit model for use of HIV testing services was tested for goodness of fit using the Hosmer-Lemeshow test. This was to ensure that the model was correctly specified and that the interpretations drawn from the model could be relied upon. The p-value for the Hosmer-Lemeshow test for the model for use of HIV testing services was 0.8232. This value is above 5% which is the standard value for a poorly fitted model. Thus based on this criterion, the model was a good fit, and results from the estimation can be interpreted reliably.

Model Estimation

To investigate the HIV testing services utilization, a binary logistic regression was estimated. The responses were coded 1, for indicating utilization of HIV testing services, and 0 if otherwise. The dependent variable was binary rather than continuous; therefore, the study used the Maximum Likelihood Estimation technique, in the form of a binary logit to quantify factors influencing the use of HIV testing services. A binary logit model is a linear modelling technique for categorical response variables, where the dependent variable has two possible outcomes. The regression allows each category of a response variable to be compared to a reference category.

Thus, the model for socioeconomic factors influencing HIV testing use was presented as follows

$$\text{Prob}(L_i = 1 | Z_i) = \text{Prob}(L_i^* > 0 | Z_i) \quad (1)$$

$$= \text{Prob}(\beta'Z_i + \xi_i > 0 | Z_i)$$

$$= \text{Prob}(\xi_i > 0 - \beta'Z_i | Z_i) \quad (2)$$

With $\xi_i \sim f(0,1)$, which is a symmetric probability density function (pdf). This therefore implies that:

$$\text{Prob}(L_i = 1 | Z_i) = \text{Prob}(\xi_i < \beta'Z_i) \quad (3)$$

$$= F(\beta'Z_i) \quad (4)$$

Equation (4) is the cumulative density function, which is the probability of an event occurring, in this case, the utilization of HIV testing services. Z represents a vector of independent variables that affect utilization of HIV testing services, as identified in the literature review. These variables include predisposing, enabling and need factors such as age, education, religion, marital status, health access, level of autonomy, income and media access. Since this study is using the logistic model to examine the decision to utilize HIV testing services, F is the logistic distribution function denoted by a Greek letter Λ so that a cumulative density function is:

$$\text{Prob}(L_i = 1 | Z_i) = \Lambda(X) = \frac{e^x}{1 + e^x} \quad (5)$$

Where the probability density function (pdf) is given by:

$$\lambda(X) = \frac{\partial \Lambda(Z)}{\partial Z_i} \quad (6)$$

This study used a binary dependent variable model; therefore, interpreting the coefficients inflates the impact. To avoid this challenge, we interpret the average marginal effects. We differentiate the estimated logistic model *w.r.t* Z_i and get the slope given by:

$$\frac{\partial E(L_i = 1 | Z_i)}{\partial Z_i} = \lambda(\beta'Z_i)\beta_k \quad (7)$$

Marginal effects can be calculated in two ways (i) Marginal effects at Averages, that is at the average point of each individual variable or (ii) Average Marginal Effects (AME) that is averaging all the slopes for individuals. The AME are calculated as presented in equation (8):

$$AME = \frac{1}{n} \sum_{i=1}^n \frac{\partial E(L_i | Z)}{\partial Z_i} = \frac{1}{n} \sum_{i=1}^n [\lambda(\beta'Z_i)\beta_k] \quad (8)$$

where n the number of female GBV survivors .

Presentation and Discussion of Results

The section presents and discusses the descriptive statistics and results from the econometric estimation of the model for HIV testing services use.

Descriptive Statistics

Table 2 shows descriptive statistics for the continuous variables used in the study. The average number of years spent in school was 10 whereas the maximum was 17. The average number of children for the group of respondents was 4, with the maximum being 7. The average age was 20 years whilst the maximum was 49 years. Spousal age difference was at a minimum of 1 year and at a maximum of 30 years, and an average of 6 years.

Table 2: Descriptive Statistics for Continuous Variables

Variable	Mean	Std. Dev.	Min	Max
Income	516.66	637.10	0	4000
Education	10	3.687	0	17
Children	4	1.649	1	7
Age	20	2.534	15	49
Age Difference With Partner	6	0.45	1	30

Source: Author's Computations

Table 3 shows the descriptive statistics for categorical variables used in the study. Religion had five categories: the Apostolic sect had the highest number of respondents at 42.3%, followed by the Pentecostal, which had 26.2%, then the None/Other category with 12.3%, the Roman Catholic with 10.8% and lastly, the Traditional sect, with 8.5%. The descriptive statistics show that 88.5% of the respondents were married, whereas 11.5% were single but in intimate relationships. The data also show that 57.7% of the respondents had high access to the media, whilst 42.3% indicated otherwise. 51.5% of the respondents indicated they had high access to healthcare services. In addition, 60.8% of the respondents indicated high levels of autonomy.

Table 3: Descriptive Statistics for Categorical Variables

Variable	Frequency	Percentage
Religion		
Traditional	11	8.5%
Roman Catholic	14	10.8%
Pentecostal	34	26.2%
Apostolic	55	42.3%
Other	16	12.3%
Marital Status		
Single	15	11.5%
Married	115	88.5%
Media Access		
Low	55	42.3%
High	75	57.7%
Healthcare Access		
Low	67	51.5%
High	63	48.5%
Level of Autonomy		
Low	51	39.2%
High	79	62.8%

Source: Author's Computations

Factors Influencing Utilization of HIV Testing Services

The average Marginal effects were estimated and the results from the estimation are presented in Table 4.

Table 4: Average Marginal Effects for HIV Testing Model

Variable	dy/dx	Std. Err.	Z	P>z	[95%Conf. Interval]
Marital Status	-0.032**	0.014	-2.290	0.022	-0.059 -0.005
Level of Autonomy	-0.027	0.145	-0.190	0.852	-0.311 0.257
Healthcare Access	0.023***	0.007	3.330	0.001	0.010 0.037
Religion					
Catholic	-0.273***	0.055	-4.990	0.000	-0.380 -0.166
Pentecostal	0.019	0.063	0.310	0.760	-0.105 0.144
Apostolic	-0.040	0.063	-0.640	0.521	-0.163 0.083
Other	0.021	0.081	0.260	0.796	-0.138 0.180
Education	0.034	0.070	0.480	0.629	-0.104 0.172
Age	0.030	0.012	2.560	0.010	0.007 0.053
Age2	0.017	0.027	0.630	0.528	-0.036 0.071
Age Difference with Partner	-0.000	0.001	-0.320	0.749	-0.003 0.002
No. of Children	0.103**	0.039	2.650	0.008	0.027 0.179
Income	0.004	0.008	0.500	0.615	-0.011 0.019
Media Access	0.040	0.142	0.280	0.776	-0.239 0.320

Notes: *** p<0.01- this means result is statistically significant at 1% level, therefore there is a 99% chance that the null hypothesis is true

** p<0.05- this means that the result is statistically significant at 5% level, therefore there is a 95% chance of the null hypothesis being true

* p<0.1- this means the result is statistically significant at 10% level, therefore there is a 90% chance of the null hypothesis being true

Source: Own Computations

The coefficient of marital status was negative and statistically significant at 5% level. This result was as expected, especially in patriarchal societies, such as those in Zimbabwe, where accessing services such as HIV testing while in marriage raises suspicion of infidelity when pursued by a woman. In this study, being married decreases the probability of HIV testing services by 3.2%. This is consistent with empirical studies in the literature, for example, Shamu et al. (2013) in Zimbabwe, Budawini et al. (2018) in Cameroon and Mboya et al. (2012) in Tanzania. Budawini et al. (2018) researched on the use of HIV testing services among women in Cameroon, and found that being married was associated with 26% lower odds of utilization compared to being single.

Healthcare access was found to be statistically significant at 1% level and had a positive sign. Having high access to healthcare increases the likelihood of using HIV testing services by 2.3%. Where HIV testing services are easily accessible, it is easy for women to utilize them. As such, most people in the rural areas rely on mobile clinics that conduct free testing as well as nearby rural clinics. Other studies, namely, Levey et al. (2014) in Zambia, and Ngome (2016) in Zimbabwe and Muhinda and Pazvakavambwa (2017) in Namibia obtained similar findings.

As for religion, only the Roman Catholic sect was found to be statistically significant in using HIV testing services. The coefficient was negative and

statistically significant at 1%. The results showed that being Roman Catholic decreased the likelihood of testing for HIV by 27.3% compared to belonging to the traditional sect. This result could be explained by that the Roman Catholic Church does not condone sex before marriage, and has strict beliefs concerning inter marital affairs. As such, most survivors of this religion might not find it necessary to utilize HIV testing services, out of sheer belief that both of them are being faithful to each other, or believing that God will protect them from the HIV infections. These findings are consistent with Usadolo (2019) on Benin where Catholics reported that they were not keen on using HIV testing because the precepts they follow in their religion protect them from the risk of HIV infection. As such, they did not find any need for testing.

The study found age to be statistically significant at 1% level and positively associated with the use of HIV testing services. A one-year increase in the age of a woman increases the likelihood of utilizing HIV testing services by 3%. As a woman ages, her sexual encounters and responsibilities increase, and so does the inclination for HIV services, such as HIV testing. This finding was consistent with Rutaremwa and Kabagenyi (2016) in Uganda, Erena et al. (2019) in Ethiopia and Hensen et al. (2015) in Zambia. In Erena et al. (2019), for example, the odds of utilizing HIV testing services increased by 1.47 times for women above the age of 30 years compared to those in the group of 15-19 years.

The number of children was a significant predictor of the use of HIV testing services, as it was positive and statistically significant at 1% level. The study found that increase in the number of children born to a woman increased the likelihood of using HIV testing services by 10.3%. The literature shows that in most developing countries, compulsory HIV testing before giving birth and during the course of breastfeeding has become a common health practice. As a result, such practices could be providing incentives to use HIV testing services by female survivors in Matabeleland South. These results are consistent with Peltzer and Matseke (2013) in South Africa, Takarinda et al. (2017) in Zimbabwe and Kessy and Lyamula (2020). In Tanzania, Kessy and Lyamula (2020) found that women with more than one child were 5.3 times more likely to use HIV testing services than those without.

Conclusions

This study estimated the model for utilization of HIV testing services amongst survivors of GBV in Matabeleland South. The study found that the utilization of HIV testing services was influenced by a range of socioeconomic factors, such as age of the survivor, number of children, religion, marital status of the survivor and access to healthcare. Marital status and religion were negatively associated with utilization of HIV testing services, whereas age, access to healthcare, and number of children were positively associated with the use of HIV testing services. Policy to improve utilization of HIV testing services should therefore focus on these socioeconomic factors that affect survivors' uptake of HIV testing services.

The positive association of age with HIV testing services utilization means that the use of HIV testing services increases with age. As such, the younger survivors are vulnerable to low utilization of HIV testing, despite being more sexually active. Therefore, there is a need to enact Youth Friendly Services (YFS), which should focus on assisting the young survivors in need of services, such as HIV testing. Policies to promote the use of HIV testing services should therefore target the younger age bracket of female survivors, to be more impactful and to harness the youth demographic dividend for economic development.

To address the challenge of poor utilization of HIV testing services, policy makers, and development and community actors should work with religious leaders to help spread correct information about the use of HIV testing services. By identifying local religious leaders who can become community champions of utilization of HIV testing services, survivors of GBV can be encouraged to use more of these services. Religious leaders can therefore work as agents of motivating their followers, including GBV survivors, to be tested frequently.

Policy makers need to improve access to healthcare, as this will motivate female survivors to utilize HIV testing services. As such, interventions to improve utilization of SRHR services should improve accessibility of HIV testing services. There is a need to increase funding allocated to HIV testing services, which would result in improving healthcare access. Access to healthcare services could be through increasing mobile clinics and/or centres, where survivors can access reproductive services, such as HIV testing. As well, access can be improved by having toll free lines and corresponding resource persons to respond with information and assistance on issues related to GBV and HIV services.

In light of the negative association between marital status and use of HIV testing services, it is important for law enforcement to put more effort into ensuring that laws related to prevention of early marriages are properly enforced. As marital status is associated with low utilization of HIV testing services, it means the likelihood of not using the services is higher among married women compared to women in relationships out of marriage. Where women are not married off early, they are likely to start engaging themselves in sex affairs late, which implies that they could be having better chances of using HIV testing services and lowering their chances of contracting the virus.

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