

Predictors of HIV Positive Pregnant Women's Use of Sexual and Reproductive Health Services in Taraba State: A Mixed Method Approach

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Abstract:-

➤ *Background:*

Sexual and Reproductive Health Services (SRHS) are essential for the prevention of STIs superimposed on the already over burdened immune system of the HIV positive mother, prevention of mother-to-child transmission of HIV, helping mothers to screen for other diseases that might impact on the mother and her family and also treating such infections early, prevention of unwanted pregnancies or child spacing or abortion and it's attendant complication. It also helps mothers to encourage their spouses test for HIV. These services may be available but certain factors interfere with their access and utilization by HIV positive pregnant women. This study sought to determine factors that predict the utilization of reproductive health services among HIV positive pregnant women in Taraba State.

➤ *Methods:*

The study adopted mixed- method research design employing an institutional based cross sectional design. The population for the study consisted of 3,315 HIV positive pregnant women attending Antenatal Clinic. Cluster random sampling technique was used to select facilities for the study. Convenience random sampling technique was used to select 605 HIV positive pregnant women (HIV positive pregnant women who were present during antenatal clinic days, who give their consent will be included in the study). The focus group discussion participants for the study were selected using convenience

sampling technique. A questionnaire and focus group discussion guide were used for data collection. Percentages, Chi-square and logistic regression analyses were used to analyze the quantitative data while the qualitative data were thematically analyzed using Nvivo software. **Results:** Demographic factors of age, education, marital status and occupation were associated with SRHS utilization, however, only age was a predictor of SRHS utilization ($p < 0.05$).

➤ *Conclusion:*

The study concluded that some demographic factors (age, occupation, educational level and marital status) are associated with SRHS utilization, while only age predicted HIV positive pregnant women's utilization of SRHS. This predictor could be addressed through health education especially among the older women, text message reminders and some incentives.

Keywords:- HIV/AIDS, Demographic, Utilization, Predictors, Reproductive Health Services.

I. INTRODUCTION

Globally, more than half a million women aged 15–49 years die annually from preventable pregnancy-related complications. Women in developing countries have a 1 in 26 chance of dying from pregnancy and abortion compared to 1 in 9400 chances in Europe [1].

Sub Saharan Africa has the highest maternal mortality rate in the world (533/100,000), as well as high rates of unintended pregnancies, early marriage, and unsafe abortions (6.2 million) which results in 15,000 preventable deaths [2].

Nigeria's 40 million women of childbearing age (between 15 and 49 years of age) suffer a disproportionately high level of health issues surrounding birth. While the country represents 2.4 per cent of the world's population, it currently contributes 10 per cent of global deaths for pregnant mothers [3]. One of the factors associated with this outcome is the unmet health need for contraception and sexual and reproductive health services. Unmet reproductive health needs exist if there is a gap between a perceived need and the current available options to satisfy the need [1].

In 2020, there were 37.7 million [30.2 million–45.1 million] people living with HIV, 53% of all people living with HIV were women and girls, 1.7 million were children 0-14 years. Every week, around 5000 young women aged 15–24 years become infected with HIV [4].

In sub-Saharan Africa, six in seven new HIV infections among adolescents aged 15–19 years are among girls. Young women aged 15–24 years are twice as likely to be living with HIV than men. Around 4200 adolescent girls and young women aged 15–24 years became infected with HIV every week in 2020. In sub-Saharan Africa, women and girls accounted for 63% of all new HIV infections in 2020 [5]. Access to and utilization of Sexual and Reproductive Health Services (SRHS) are essential for the prevention of sexual and reproductive health problems and diseases.

Sexual and Reproductive health Services in this study refers to sexuality education on safer sex, family planning/contraception, HIV counseling and testing and partner / couple counseling and referral services and screening and treatment of STIs.

Heterosexual intercourse remains the primary route of transmitting HIV in Nigeria [6], which can be addressed by the primary prevention of HIV among women of reproductive age group; a pillar of the prevention of mother-to-child transmission (PMTCT) of HIV strategy. This is a promising approach to combating the HIV scourge and preventing the next generation from HIV. In Nigeria and many low-income countries, attention and resources for this program are chiefly concentrated on antenatal HIV testing, provision of ARV prophylaxis to infected women and exposed newborns with counselling on safer infant feeding practices. While this represents a public health approach, these three elements constitute just one of the components of the PMTCT program. The current impact of the program is limited by its failure to effectively link with sexual and reproductive health services and address the contraceptive needs of women with HIV.

Effective linkages between the sexual and reproductive health and the HIV fields are essential to ensuring the reproductive rights of people living with HIV. HIV testing among pregnant women remains challenging. Globally, about

44% of pregnant women in low- and middle-income countries received HIV testing and counselling in 2013, up from 26% in 2009 [7].

The control of STIs has received renewed attention because of the strong correlation between the spread of STIs and HIV transmission. Systematic screening for STIs, consisting of history-taking, clinical examination and laboratory screening for syphilis, is part of the initial clinical evaluation of a woman with HIV. Appropriate Sexual and reproductive health of women living with HIV/AIDS and prompt case management of STIs reduces the risk of transmitting HIV to sexual partners and the reproductive-tract and obstetric complications associated with STIs. Although the presentation and response to treatment of some STIs – in particular genital herpes and chancroid – may be altered in women living with HIV/AIDS, standard treatment protocols are effective [8].

Family planning among women with HIV has the potential to reduce maternal deaths and disabilities by delaying motherhood, spacing childbirths, avoiding unplanned pregnancy, and its complications as well as discontinuing childbearing when the desired family size is attained. Preventing unplanned or unwanted pregnancies allows women to optimize their health and has the potential of decreasing mother-to-child transmission (MCT) of HIV. Furthermore, evidence has shown that this approach of PMTCT is cost effective, as adding family planning to PMTCT would reduce the cost of each HIV infection avoided by half [9].

Contraceptive prevalence rate (CPR) globally for women aged 15–49 years, married or in a union rose from 58.4% in 1994 to 63.6% in 2012. Yet, an estimated 222 million women still fall within the current unmet needs estimates for contraceptives, with 90% of these women currently in the developing world. As a result, one in five pregnancies is unintended [1].

Access to treatment begins with access to counselling and testing. Despite global efforts, only 44% of pregnant women in low- and middle-income countries received HIV testing and counselling in 2013 [10], with even fewer receiving testing services with their male partners. HIV testing rate of 36.6% was found among pregnant women in western Nigeria, while a HIV testing rate of 20.7% was found among pregnant women in Northern Nigeria [6]. Pregnant women who test negative during pregnancy should also be offered opportunities to retest in order to identify sero-conversion during pregnancy or during breastfeeding. Community- and home-based testing efforts can be useful in reducing the financial, social and opportunity costs that women may incur if they have to go to the facility for the test. All HIV counselling and testing should be provided confidentially and voluntarily [10].

Because HIV affects the family, it helps to manage it within a family context. Through couples' testing and counselling services, couples can learn their results together with the assistance of a trained counsellor or health worker.

Unfortunately, such services are not always available. An HIV-positive diagnosis for a pregnant woman can be an opportunity for a health-care provider to facilitate family conversations and to reach the whole family, to identify other HIV-positive children and to ensure that they are linked to life-saving care. This may be especially important for adolescents, who may have been missed during peri-natal diagnoses and whose HIV infection may progress slowly. The role of men is particularly important. A prospective cohort study in Kenya showed significantly lower rates of vertical HIV transmission among the infants of women whose male partners accompanied them to antenatal clinics or who reported that their male partners had been tested for HIV [10]. The combined risk for either vertical transmission or mortality was 45% lower with male antenatal attendance and 41% lower with previous partner testing. The involvement of male partners also provides an opportunity to identify discordant couples and, therefore, facilitate access to treatment.

Though availability and accessibility of SRHS are still poor in developing countries, [11] including Nigeria, the little services that are available and accessible are underutilized by women of child bearing age even though there is an increase in the incidence and prevalence of reproductive health problems among them such as sexually transmitted infections including HIV/AIDS, unwanted pregnancies and unsafe abortions [8,11]. HIV positive pregnant women are supposed to make effective use of these services to promote their sexual and reproductive health, to prevent themselves from contacting other STIs, to protect their sexual / needle sharing partners (S/NSP) and prevent the transmission of these diseases to their unborn babies [11].

The utilization of sexual and reproductive health service is measured based on health outcomes and the percentage of persons that use the services [13]. The significant impact of SRHS utilization can be observed in reproductive outcomes such as pregnancy and birth, maternal and infant mortality, Sexually Transmitted, Infections (STIs) and HIV and AIDS, and complications of unsafe abortions [10].

Many factors could determine the utilization of SRHS in Nigeria, despite effort to make them available at the primary health care facilities. These factors which are referred to as predictors in this study range from maternal age, educational level, marital status and occupation. It is therefore pertinent to study the perceived predictors carefully to inform policy makers and health care providers to enable them make policy that will improve the utilization of these services. For the purpose of this study, predictors were studied under, demographic factors, of age, marital status, educational level and occupation to find out if they predicted the HIV pregnant women's use of these services.

Studies have linked socio-demographic factors and HIV positive pregnant women's utilization of reproductive health services[14,15, 16, 17]. The younger a woman is, the easier for her to move about, has less house chores, she has so much to leave for and is strong enough to walk long distance to

access health facilities/services. A young woman also has a small family to carter for so she has time to access health facilities [18]. Persons living with HIV often face discrimination in safe sex and reproductive choices, especially in low resource settings [16]. Discussing sexual behaviour is another obstacle for both providers and clients, especially when trust is limited and discussion of sexual matters is not the cultural norm.

Wealth index, religion, occupation and educational status were significantly associated with HIV testing by pregnant women in the antenatal care [6]. Women with higher education, higher wealth index, good occupation were more likely to test for HIV. The more educated a woman is the more her bargaining power as it concerns her health; she is also more aware of the pros and cons of her health and so she is more likely to utilize health facilities than her uneducated partner [19,20,21].

The present study therefore is aimed at finding out to what extent is there an association between these predictors and the use of sexual and reproductive health services in Taraba State.

II. METHODS

➤ *Study Area, Design, and Sampling Techniques*

Mixed method institutional based cross-sectional study was conducted in Taraba State. Six hundred and five HIV positive pregnant women were randomly selected using convenience sampling technique, while the health facilities were selected through a two stage-cluster sampling technique. Ten respondents from each geographical zone were selected using convenience sampling technique (total of 30 HIV Positive pregnant women) for the focus group discussion.

➤ *Data Collection Procedure, Processing, and Analysis*

Questionnaire and focus group discussion guide were used to collect data. The utilization of SRHS was measured using two sections of a questionnaire. Section A of the questionnaire elicited information about the respondent's demographic variables. Section B elicited information on the utilization of sexual and reproductive health services which include sexuality education, screening for sexually transmitted infections, counseling and testing for HIV, family planning, couple counseling and testing services, treatment of sexually transmitted infections. The chi-square statistic and logistic regression were used to test the association at .05 level of significance.

The main outcome variables (SRHS): health education, screening and treatment of STIs, family planning, HIV counseling and testing, partner counseling and testing services, services were measured dichotomously. Respondents were asked to indicate 'yes' if they have used the services, otherwise 'no'. Explanatory variables include demographic variables of age, educational level, marital status, occupation.

III. RESULTS

Table 1 shows the demographic characteristics of the respondents. Six hundred and five HIV positive pregnant women between the ages of 15 to 49 with a mean age of 33.8 years responded to the questionnaire. More than half (50.3%) of the respondents were between 15-29 years, slightly more than a quarter of them (28.0%) had no formal education, majority of them (67.7%) were married, slightly more than a quarter (32.2%) were civil servants, less than a quarter are self employed.

Table 2 shows the overall percentage total of (37.5%) utilization of SRHS with almost half (41%) of the respondents reported using Health Education Services, (49%) using STI Screening services, 49.7% had treated STIs, more than half (52%) using HIV counselling and testing, less than half utilized CHC&R services, while only (14.0%) used family planning services.

Table 3 shows that age ($p = 0.02$), educational level ($p = 0.043$), marital status ($p = 0.006$) and occupation ($p = 0.003$) were significantly associated with utilization of Health education services, screening services and family planning services. The table further shows that occupation ($p = 0.71, 0.31, 0.11$) was not significantly associated with health education services, HIV counseling and testing services. Table 4 shows that demographic factor of age 15 -29 years (OR =1.66; CI - 1.089 -2.53; P = 0.04) was significantly associated with higher odds of SRH services utilization, while educational level (OR= 1.63; CI =.910 - 3.31; p = 0.20), marital status (OR = 0.61; CI = 0.46 – 3.55; p = 0.28) and occupation (OR = 0.83; CI= .414 – 2.857; P= 0.86) were significantly associated with lower odds of utilizing SRH services.

<i>characteristic</i>	<i>%</i>
Age	
15-29	50.3
30-30	28.8
40-49	20.9
Total	100.0
Educational level	
No Formal Education	17.0
First School Leaving Certificate	28.0
Senior Secondary School	21.6
Diploma	25.0
First Degree and above	8.2
TOTAL	100.0
Marital Status	
Married	67.7
Divorced	9.9
Widowed	12.6
Single	9.8
TOTAL	100.0
Occupation	
Civil Servant	32.2
Self Employed	20.1
Farming	13.6
House wife	30.2
Others	3.0
TOTAL	100.0

Table 1:- Demographic Characteristics of HIV Positive Pregnant women that Responded to the Questionnaire on Utilization of SRHS (n= 605).

Items	%
Sexual and Reproductive Health Services	
Health Education	41.0
Screening Services	49.0
Counselling and Testing Services	52.0
Family Planning	14.0
Couples Counselling	42.2
Treatment of STIs	42.7
Cluster % Total	37.5

Table 2:- Percentage Response on the Utilization of SRHS for HIV Positive Pregnant Women in Taraba State (n=605)

Factors	Health Education			Screening			C&T			Family Planning			CHCT			Treatment of STIs		
	%	χ^2	p	%	χ^2	p	%	χ^2	p	%	χ^2	p	%	χ^2	p	%	χ^2	p
Age																		
15-29	50.3	11.403	.02	21.3	66.745	.000	56.9	23.659	.291	14.2	15.557	.049	65.3	7.627	.417	83.0	17.805	.023
30 – 39	28.8		15.7		48.3			41.9			43.0			79.1				
40 -49	20.9		28.0		56.8			46.8			77.5			88.0				
Educational Level																		
No F Education	88.2	26.892	.043	43.7	63.992	.000	98.2	40.088	.001	49.1	63.992	.000	86.6	40.088	.001	82.6	63.992	.000
Primary School	81.2		40.5		94.1			50.5			87.4			79.6				
Secondary School	86.0		43.5		84.3			47.3			93.0			88.4				
Diploma	83.4		42.5		94.1			46.0			87.2			80.5				
Degree and Above	90.5		54.8		98.0			61.0			91.8			83.7				
Marital Status																		
Married	42.7	33.908	.006	44.9	62.834	.000	95.9	28.197	.000	50.8	28.189	.402	91.3	24.846	.073	84.9	15.140	.514
Divorced	6.8		42.7		93.8			42.7			94.7			84.2				
Widowed	32.0		44.4		95.5			44.5			88.0			81.3				
Single	44.1		43.6		89.2			43.2			74.4			70.2				
Separated	33.3		42.2		92.1			42.1			85.7			80.1				
Occupation																		
Civil Servant	86.6	36.223	.003	48.6	72.096	.000	85.5	68.657	.000	54.5	72.096	.000	86.5	68.657	.000	83.3	72.096	.000
Self Employed	82.8		42.1		95.3			47.5			89.2			78.3				
Farming	86.8		46.0		95.0			53.1			88.9			86.4				
House Wife	84.2		40.5		95.8			44.4			81.9			83.7				
Others	0.0		44.4		94.4			50.0			94.4			94.4				

Table 3:- Factors Associated with Utilization of SRHS by HIV Positive Pregnant Women (n=605)

Variables	Odds Ratio	p-value	(95% confidence interval)
Age (15-29)	1.66	0.02	1.089- 2.53
Educational level	0.63	0.20	.089 – 3.31
Marital Status	0.61	0.28	.46 – 3.55
Occupation	0.83	0.86	.414-2.857

Table 4:- Predictors of SRHS Utilization

➤ Qualitative Data

Data generated through focus group discussion with HIV positive pregnant women using focus group discussion guide revealed that HIV positive pregnant women utilize SRHS. However, only about 20% utilize family planning services and about 40% bring their partners for counselling. The service with the highest percentage of utilization is counselling and testing services with 52% (FGD participant, central zone). In the words of some participants.

“ I don't know what sexual and reproductive health services is except now that you told me. I only go to hospital for counselling and testing and to screen for other STIs, the last time I was pregnant, they told me to do family planning to save myself and my family. My husband does not follow me for antenatal, he is also positive ” (FGD, central zone 002).

- *In the word of another FGP*

“they teach us that if you are pregnant , you have to take care of yourself. And. if you have already deliver your child you have to take care of your baby and again we should be faithful to each other ” (FGD participant, southern zone 003)

- *In the words of another participant*

“seriously, there are some of the mothers that they are aware of SRHS and they even teach their children concerning this issue of pregnancy, sickness and all the rest. .Some of them even go about to give their children condom to go out with it. Some of them even ask the girls, if you are going out put it in your bag because you don't know what will happen. Boys may decide to rape you somewhere, you can bring it out, beg them to use it. So there are two of them that I know of it but there are few of them that they are ashamed to talk to their children concerning sex just like me that grow up my parents were ashamed to talk about sex in my house. They don't even want anyone to mention sex. So that is the thing I know about that services”(FGD participant Northern zone 001)

- *In the words of another participant*

“some are using it but some are not. I use to take this condom and sharing them but some are refusing to use it. They say if they use it they don't feel it. I try to convince them but there is no way. Some are doing family planning but not all. Some say their husbands will not agree. Only about 20% do it”(FGD participant Central zone 002). This implies that majority of the respondents do not utilize family planning

IV. DISCUSSION

The utilization of sexual and reproductive health services among HIV positive pregnant women is essential to keep mother and family healthy by reducing the number of unwanted pregnancies, reduce the rate of abortion and it's complications, detect and treat sexually transmitted infections and other diseases that may impact negatively on the already burdened health of the woman and to help partner know their status.

Determining the factors that make HIV positive pregnant women use or not use SRHS is very important in designing interventions to promote the use of these services. We utilized mixed method research because we have learnt from experience that triangulating multiple data collection is better than using a single method, especially when collecting sensitive data such as sexuality information. This study found out that some socio- demographic factors could be used to predict HIV positive pregnant women's use of SRHS.

The utilization of SRHS among HIV positive pregnant women was low. Counselling and testing services, treatment of STIs, and screening for STIs were the services most used. This may be because people are aware of the implications of HIV on themselves and the entire family if they do not utilize these services.

Previous studies in other countries including other parts of Nigeria indicates low utilization of SRHS [6,10]. Similarly, qualitative data generated through FGD revealed that majority of the participants agreed that they have utilized only counselling and testing and treatment of STIs services.

The utilization of health education services, screening services, family planning services, counseling and testing and CHCT services, and treatment of STIs was associated with demographic factors of age, educational level, marital status and mother's occupation. Younger women utilized PMTCT services more than the older respondents. This, according to information from qualitative data might not be unconnected to the fact that they have more to live for than their older respondents. The finding is consistent with Worku and Fanta, [7] who reported that age (27 year) or younger is significantly associated with SRHS utilization but the study differed from that of Muraguri[25] , who reported that maternal age is often presented as a proxy for accumulated experience, including the use of health services. Older women are possibly more confident and influential in household's decision- making

than younger women and adolescents in particular. Maternal education is associated with screening and family planning services, counseling and testing and CHCT services. Although some studies reported no difference in the utilization of SRHS according to education [22,23], the general consensus is that the higher the educational status of a woman the higher the rate of utilization of these services.

The finding showed that maternal age (15 - 29) was associated with higher odds of SRHS utilization, while tertiary education, marital status and occupation were associated with lower odds of SRHS utilization. This showed that only maternal age (15 -29 year) could be used to predict HIV pregnant women's utilization of SRHS. The findings agree with previous studies which reported some of these demographic factors as predictors of PMTCT services utilization [21, 23, 24].

V. CONCLUSION

The study revealed that HIV positive pregnant women in Taraba state utilized counseling and testing and treatment of STIs adequately. The finding may be because these services offer direct protection against the transmission of HIV from mother to child and also provide treatment to other diseases that might cause problem to them and their babies. However, services like health education services, screening services, were not adequately utilized by HIV positive pregnant women. Family planning services were the least utilized by HIV Pregnant women in Taraba State. The study also revealed that demographic factors of age, educational level, marital status and occupation were associated with the utilization of SRHS, however, only age (15-29 years) predicted HIV positive pregnant women's utilization of SRHS. This predictor could be addressed through massive health education especially among the older women, providing incentives, telephone reminders and policy reforms.

➤ Limitations

The study utilized the cross sectional design, therefore cannot assume cause and effect association. Nigeria being a multi- ethnic country language barrier was also a problem. Also this study was conducted in one state therefore our findings may not be generalized to other states even though Taraba State is a multi lingual and multi cultural state.

➤ Abbreviations

FGD (focus group discussion), HIV (Human immunodeficiency virus), AIDS (acquired immunodeficiency syndrome), SRHS (Sexual and Reproductive Health Services), CHCTS (Couple HIV counseling and Testing/ Referral services).

➤ Authors Contributions

OR and ES designed the research work, OR, EGI, BJ and PA collected data with the help of research assistants. All authors contributed to data analysis, OR drafted the manuscript. The author(s) read and approved the final manuscript.

➤ Funding

No financial support was received for this study.

➤ Ethics Approval and Consent to Participate

Participation was made voluntary. The participants gave their written and oral consent. Study procedure was approved by Taraba State ethics committee

➤ Consent for Publication

Not applicable

➤ Competing Interests

The authors declare that they have no competing interests.

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