Original Research Article

Factors associated with unmet needs for family planning among people living with HIV/AIDS in the South-South region of Nigeria

ABSTRACT

Aim: To investigate the factors associated with unmet needs for family planning among people living with HIV/AIDS in the South-South Region of Nigeria.

Study Design: Cross-sectional study design

Place and duration of study: The study was carried out at the HIV clinics at Federal Medical Centre (FMC), Yenagoa and Otuasega Cottage Hospital (OCH), Ogbia in Bayelsa state

Methodology: After obtaining informed consent, six hundred (600) participants were recruited using a simple random sampling technique. An interviewer-administered questionnaire was used to collect data comprisingsocio-demographic characteristics and contraceptive uptake of the respondents in this study. Data obtained from the study were analyzed and presented as frequencies and percentages. Chi-square and Binary logistic regression were used to test for association between variables. Statistical significance was set at p=0.05.

Result: The response rate was 100%. The unmet family planning needs were identified in 43.5% of the study population. Duration of status awareness (X^2=9.983, P=0.002), ART duration (X^2=10.410, P=0.001), number of sexual partners (X^2=36.665, P=0.001) were significantly associated with unmet planning family need. Likewise, age group (X^2=22.988, P<0.001), gender (X^2=9.327, P=0.002), and religion (X^2=17.243, P=0.001) were also significantly associated with unmet family planning needs. Binary logistic regression showed that respondents who were 40 years or more had 2.15 odds of unmet family planning needs compared to those less than 40 years. Also, respondents who had one sexual partner had 2.98 odds of unmet family planning needs when compared to respondents who had multiple sexual partners.

Conclusion: There is a high prevalence of unmet family planning needs among people living with HIV/AIDS in Bayelsa state, Nigeria.

Keywords: *Met needs for family planning, contraceptive needs, modern family planning methods, HIV/AIDS, Bayelsa State, sub-Saharan Africa.*

Comment [U1]: Abstract should have an introduction which describes in a snapshot the problem statement and justification for the study.

1. INTRODUCTION

Recent epidemiological data indicate that HIV remains a global public health challenge that has contributed to the morbidity as well as mortality of infected individuals. The infectionhas accounted for more than 40.1 million deaths over the last four decades (World Health Organization (WHO), 2022). The estimated number of People Living with HIV/AIDS (PLWHA) at

the end of 2021 was roughly 38.4 (33.9–43.8) million, and sub-Saharan Africa was the most affected region, having 25.6 million PLWHA representing approximately 70% of all people with HIV infection (Joint United Nations Programme on HIV/AIDS, 2022). Nigeria was reported in 2014 to account for 9% of the global population of people living with HIV (UNAIDS, 2014). Data from UNICEF (2021) has shown that in the year 2020, an estimated 130,000 children were living with HIV in Nigeria.The risk of vertical transmission of HIV from mother to child has made family planning a vital measure for the control of HIV infection in children given that it is by far the main source of HIV infection in children below the age of 15 years. In addition, family planning also prevents pregnancy-related morbidity and mortality associated with unintended pregnancy among women of reproductive age (Wemakor et al., 2020). Decisions regarding pregnancy and childbearing can be very complex and tasking for individuals (or couples) and even more so among those living with HIV/AIDS (Cuinhane et al., 2018). Although some studies have shown that a good number of individuals who were HIV positive indicated a decreased desire for more children for different reasons when their status was confirmed, yet most of these individuals have unmet family planning needs (Machiyama et al., 2017). Unmet family planning needs in women apply to those who are married or in unions, fecund and are sexually active, who want to stop childbearing or delay their next birth by at least two years, but are not using any method of contraception, either modern or traditional (DHS, 2014). However, this definition can be misleading as several studies have reported that male partner involvement and preferences have played a major role in such decision-making (Amuzie et al., 2022; Vouking et al., 2014; Yargawa & Leonardi-Bee, 2015). For example, studies have shown that male dominance in Africa has a great role in women's ability to access and use any form of contraceptives (Kriel et al., 2019). Hence, men's preferences regarding contraceptive use are a stronger determining factor than women's (Cleland et al., 2014). Therefore, considering the unmet needs of couples rather than just females would likely provide more information regarding family planning uptake (Bankole & Ezeh, 1999; Ngom, 1997).

Unmet need for family planning is a robust indicator of the contraceptive utilization gaps and current evidence indicate that unmet family planning needs among women living with HIV remain

high in sub-Saharan Africa (Habte & Namasasu, 2015; Laryea et al., 2014; Wekesa & Coast, 2015). Different studies in various regions in sub-Saharan Africa (Dejene et al., 2021; Kassie et al., 2021) have reported varying prevalences of unmet family planning needs among women living with HIV and a variety of associated factors indicating region-specific differences and dynamics of unmet family planning needs. Low contraception uptake and unmet family planning needs are evident in Nigeria. For example, a study conducted by (Sinai et al., 2019), in the Kaduna State of Nigeria showed that only one-fifth of all married women were on modern contraceptives. Nigeria as of 2019, had the average births per woman over their lifetime or Total Fertility Rate (TFR) as 7%, which incidentally was the highest in the world for that year (Population Reference Bureau, 2019).

In the South-South region of Nigeria, Bayelsa state had the second-highest total fertility rate of 4.8 next to Delta State with 5.2 (National Bureau of Statistics, 2017).Bayelsa State is one of the states in the South-South region of Nigeria and goes by the nickname, “the glory of all lands.”. It is cosmopolitan in nature and is endowed with an abundance of various natural reserves of crude oil and natural gas resources. As a result, both local and foreign oil and gas firm employees and investors have been drawn to these resources. Therefore, the state has a lot of economic, commercial, and political activities going on within it. The nightlife is extremely vibrant and promotes transactional sex as well as other sexual behaviours that could raise the prevalence of HIV. In Bayelsa State, there are numerous establishments where various types of alcohol sales and their use are permitted. These locations include bars, pubs, beer gardens, clubs, and "joints." (Abikoye, 2015). Along with other illegal substances, their unchecked use exposes users to an elevated risk of unsafe sexual behaviour and sexual assault. (Raimi et al., 2019).

Before this study, there seemed to be a paucity of data regarding the unmet needs for family planning and the associated factors among adults living with HIV/AIDS (PLWHA) in Bayelsa State, a State in the South-South region of the country (National Bureau of Statistics, 2017).

The study, therefore, aimed to investigate the prevalence and associated factors of unmet family planning needs among PLWHA in the South-South region of Nigeria with Bayelsa State as a case study.

Conceptual framework

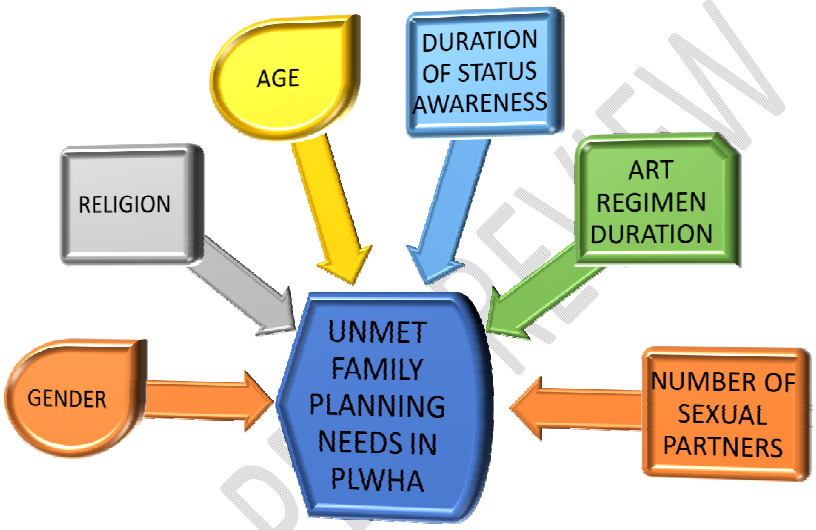

Figure 1: Conceptual framework showing factors associated with unmet family planning needs in PLWHA.

Figure 1 outlines the factors which may be associated with unmet family planning needs in PLWHA who are on ART. These factors include Gender, religion, age, duration of status awareness, ART regimen duration, and the number of sexual partners.

2. METHODOLOGY

2.1 STUDY DESIGN AND STUDY SITE

This cross-sectional survey was carried out in Bayelsa state, Nigeria. The choice of the facilities where the study was carried out was achieved by independently balloting for the secondary andtertiary health facilities. Federal Medical Centre (FMC), Yenagoa, a tertiary health facility and

Otuasega Cottage Hospital (OCH), Ogbia, a secondary health facility were selected. The study was carried out between August and November 2021.

2.2 SAMPLE SIZE DETERMINATION

The sample size was calculated using the Cochran formula:

n = $\frac{Z^2 X P(1-P)}{e^2}$(Cochran, 1963)

where:

n= least required sample size

z**=** standard score at a confidence level of 95% (1.96)

P = Prevalence of unmet family planning needs among HIV-positive women, 38.5% (Njuguna, Ilovi, et al. 2017).

e **=** acceptable margin of error at 5% (0.05)

Interpolating, n will be:

= $\frac{1.96^2 X\ 0.385(1-0.385)}{.05^2}$ = 364

With a Design Effect of 1.5 (Sharma, 2014) = 1.5 x 364 = 546

10% for questionnaire non-response error was also added.

n + n (10%) = 546 + (546 x 0.10) = 600 participants

A total of 600 participants was used for the study**.**

2.3 PARTICIPANTS

Study participants were selected using a multistage sampling technique. Following selection of health facilities by balloting, the lists of PLWHA who visited the health facilities were generated from the database of the HIV clinics. PLWHAs who attended the HIV clinics, had been on ART for at least one year, women of reproductive age (15-49 years), men (aged 18-60 years) who were sexually active, and individuals married or in a union were included.While acutely ill persons,or those unable to communicate were excluded. The 1500 patients in FMC, constituted the sampling frame from which participants were drawn from the clinic. While the sampling frame for OCH was 150 patients. The probability proportional to size (PPS) method was used to determine the number of participants to be selected from each facility. This amounted to 540 participants from FMC, Yenagoa and 60 participants from OCH, Ogbia. A total of 600 participants were recruited for this study.

2.4 STUDY INSTRUMENT AND DATA COLLECTION

An interviewer-administered semi-structured questionnaire which was adapted from United Nations-funded survey questionnaires used for Fertility & Family Survey (FFS), and Reproductive Health Survey (RHS) conducted in European countries (United Nations, 1993) was used to collect data in this study. The questionnaire was divided into three sections covering socio-demographic characteristics, reproductive desires, and family planning commodities uptake.

2.5 DETERMINATION OF UNMET FAMILY PLANNING NEED

In this study unmet family planning needs consisted of:

Unmet need for spacing which included pregnant women with mistimed pregnancy plus fecund women who were not pregnant or amenorrheic and said they did not want to give birth for the next 2 years or more but were not on any family planning method.

Unmet need for limiting which referred to pregnant women with an unwanted pregnancy and fecund women who were not pregnant or amenorrheic and were not using any form of family planning and yet did not desire any more children (Abubeker et al., 2019).

In addition, the unmet need for family planning in men was also considered in this study to get a more reliable figure (Bankole & Ezeh, 1999).

2.6 STATISTICAL ANALYSIS

The data obtained were entered into an excel file and cleaned before exporting into the software, IBM Statistical Product and Service Solution (SPSS) version 25 for analysis. Data obtained from the study were analyzed and presented as frequencies and percentages. Chi-square and Binary logistic regression were used to test the association between variables. Statistical significance was set at $p<0.05$.

3. RESULTS AND DISCUSSION

A total of 600 PLWHA were recruited and a response rate of 100% was recorded in this study. The study comprised of 160 males (26.7%) and 440 females (73.3%). Most of the respondents 340(56.7%) were between 31-40 years, and 338 (56.3%) had vocational/technical education as their highest level of education. The mean age of the respondents was 34.6±6.4 years(Table 1).

Figure 2 shows that 43.5% of the respondents had unmet family planning needs.

Test of association showed that duration of status awareness (X^2=9.983, P=0.002), ART duration (X^2=10.410, P=0.001), number of sexual partners (X^2=36.665, P=0.001) were significantly associated with having unmet family need. Likewise, the age group of respondents (X^2=22.988, P<0.001), gender of the respondents (X^2=9.327, P=0.002), and religion (X^2=17.243, P=0.001) were also significantly associated with having unmet family planning needs (Table 2).Regression analysis showed that respondents who were 40 years or more were 2.15 times more likely to experience unmet family planning needs compared to those less than 40 years. Also, respondents who had one sexual partner were 2.98 times more likely to experience unmet family planning needs when compared to respondents who had multiple sexual partners (Table 3).

Table 1: Social Demographic characteristics of PLWHA

Variable	Frequency (n=600)	Percent (%)
Sex		
Male	160	26.7
Female	440	73.3
Age group		
≤20 years	15	2.5
21-30 years	140	23.3
31-40 years	340	56.7
41-50 years	100	16.7
> 50 years	5	0.8
Mean ± SD	*34.6 ± 6.4*	
Education		
Basic primary	15	2.5
Secondary	78	13
Under graduate	30	5
Vocational/Technical	338	56.3
Graduate	65	10.8
Post graduate	74	12.3
Marital status		
Single	78	13.0
Married	457	76.2
Separated	24	4.0
Divorced	6	1.0
Widowed	13	2.2
Cohabiting	22	3.7
Religion		
Pentecostal	284	47.3
Protestant	87	14.5
Catholic	206	34.3
Islam	11	1.8
Traditionalist	8	1.3
Others	4	0.7

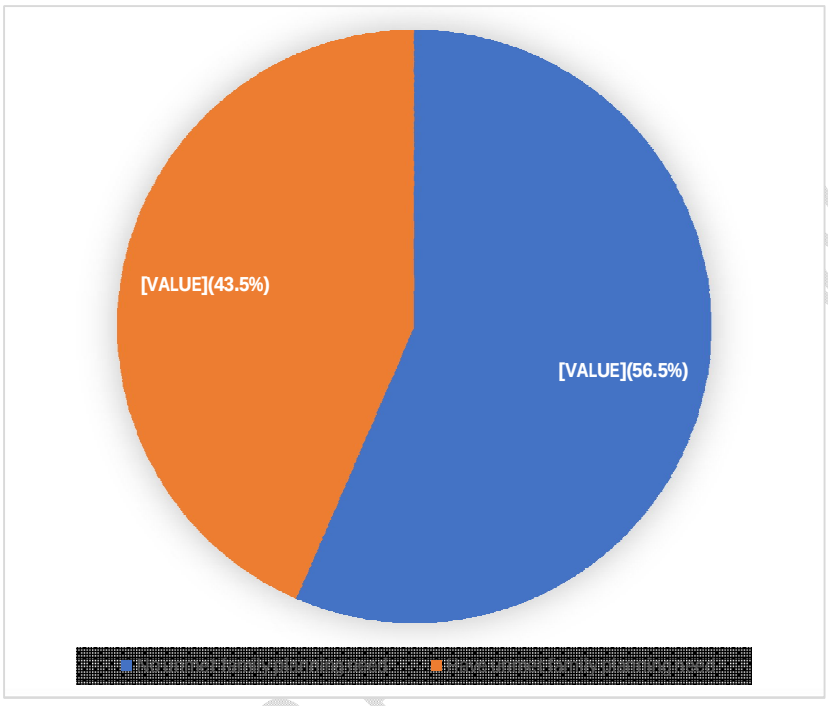

Figure 2: Prevalence of unmet family planning needs of ALWHA

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Table 2: Factors associated with unmet family planning needs

Variable	Unmet need		X^2 (P-value)
	No n(%)	Yes n(%)	
Duration of status awareness			
≤ 4 years	210(62.1)	128(37.9)	9.983 (0.002)*
>4 years	129(49.2)	133(50.8)	
ART Duration			
≤ 4 years	227(61.7)	141(38.3)	10.410 (0.001)*
>4 years	112(48.3)	120(51.7)	
Always got medication			
Yes	329(56.3)	255(43.7)	0.241 (0.624)
No	10(62.5)	6(37.5)	
Revealed your status to others			
Yes	308(57.6)	227(42.4)	2.301 (0.129)
No	31(47.7)	34(52.3)	
Sexual orientation			
Heterosexual	355(56.6)	257(43.4)	0.139 (0.709)
Others	4(50.0)	4(50.0)	
No of Sexual partners			
One	291(63.3)	169(36.7)	36.665 (<0.001)*
More than one	48(34.3)	92(65.7)	
Age group			
<40 years	282(62.0)	173(38.0)	22.988 (<0.001)*
≥40 years	57(39.3)	88(60.7)	
Education			
Secondary or below	270(58.6)	91(41.4)	3.464 (0.063)
Tertiary	69(49.6)	70(50.4)	
Sex			
Males	74(46.3)	86(53.8)	9.327 (0.002)*
Females	265(60.2)	175(39.8)	
Religion			
Pentecostal	179(63.0)	105(37.0)	17.243 (0.001)*
Protestant	33(37.9)	54(62.1)	
Catholic	114(55.3)	92(44.7)	
Others	13(56.5)	10(43.5)	

*Significant at p=0.05

Table 3: Predictors of unmet family planning needs

Variable	COR(95% C.I.)	P-value	AOR(95%C.I.)	P-value
Age group				
≥40 years	2.58(1.72-3.70)	<0.001*	2.15(1.43-3.23)	**<**0.001*
<40 years	**Ref**	**Ref**	**Ref**	**Ref**
Sex				
Males	1.76(1.22-2.53)	0.002*	1.26(0.84-1.88)	0.252
Females	**Ref**	**Ref**	**Ref**	**Ref**
Religion				
Pentecostal/Protestant	0.98(0.42-2.28)	0.953	1.21(0.49-2.97	0.679
Catholic	1.05(0.44-2.50)	0.914	1.22(0.49-3.06)	0.671
Others	**Ref**	**Ref**	**Ref**	**Ref**
Duration of status awareness				
≤ 4 years	1.69(1.22-2.34)	0.002*	0.89(0.42-1.90)	0.768
>4 years	**Ref**	**Ref**	**Ref**	**Ref**
ART Duration				
>4 years	1.73(1.24-2.41)	0.001*	1.58(0.74-3.40)	0.237
≤ 4 years	**Ref**	**Ref**	**Ref**	**Ref**
Sexual partners				
One	3.30(2.22-4.91)	<0.001*	2.98(1.96-4.52)	<0.001*
More than one	**Ref**	**Ref**	**Ref**	**Ref**

*****Significantat p=0.05

3.1 ANALYTICAL FRAMEWORK:
An algorithm for estimating unmet family planning need among PLWHA living with HIV

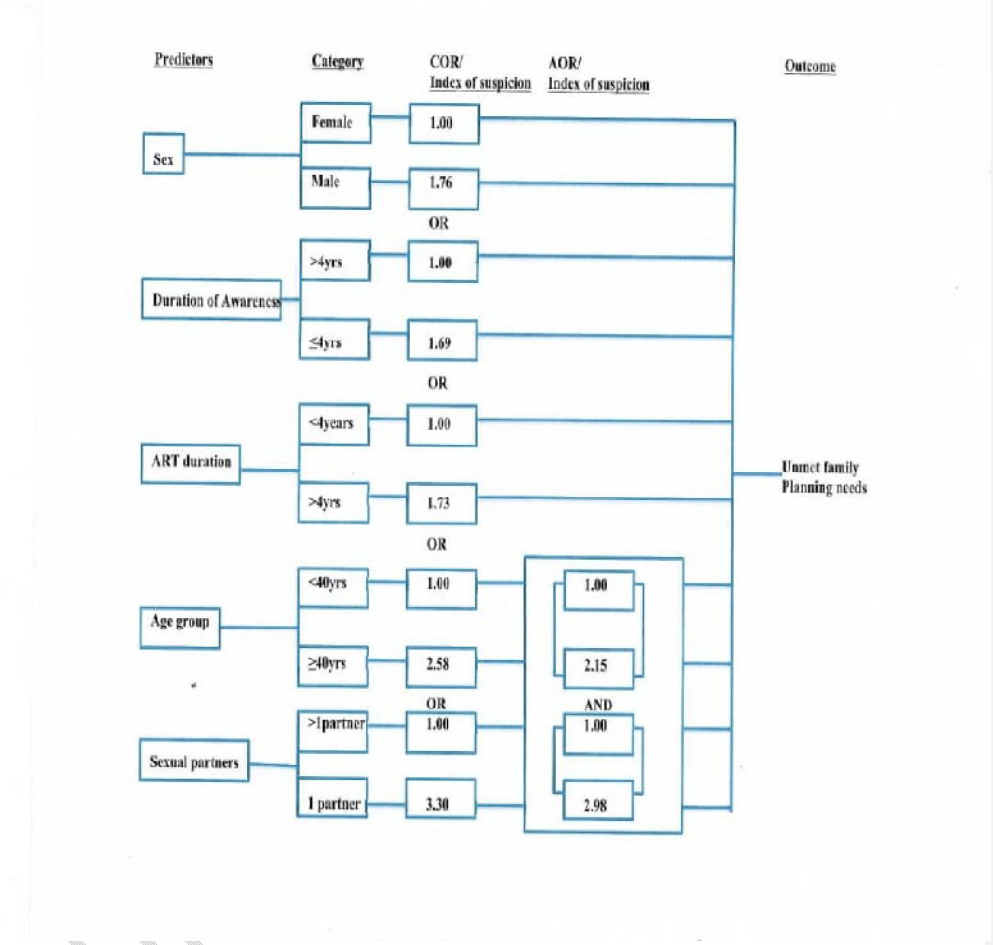

Figure 3: Diagram showing an algorithm for estimating unmet family planning needs in adults living with HIV

The Binary logistic regression model in figure 3 showed that the factors sex, duration of awareness, ART duration, age group and sexual partners were statistically significant independent predictors of unmet family planning needs. The algorithm/matrix was developed to rate the likelihood/index of suspicion of unmet family planning needs based on the associated risk factors. The algorithm indicates that being a male or having ≤ 4 years duration of awareness or > 4yrs ART duration or aged ≥40yrs or with 1 partner were more specifically associated with unmet family planning needs than being a female or having >4 years duration of awareness or < 4 years ART duration or aged <40 years and having >1partner. After correcting for confounding variables, unmet family planning need was more specifically associated with the combinations of an age group ≥ 40 years and having 1 partner, hence individuals who are aged ≥ 40 years with 1 partner showed an increased tendency towards having unmet family planning needs.

3.2 DISCUSSION

The unmet need for contraception remains a global public health challenge, particularly among women of childbearing age in underdeveloped regions of the world including Nigeria (Girma Garo et al., 2021). Previous studies assessing unmet family planning needs among PLWHA have mostly focused on women of reproductive age. However, this present study assessed the prevalence of unmet family planning needs in both HIV-positive women and men. This is because the adoption of family planning by a woman is dependent on her male partner's ability to accept it and practice it. The prevalence of unmet family planning needs observed in the current study population was 43.5%. This is higher than the 16% unmet family planning need among HIV-positive women reported by Demissie et al. (2015) in Oromia regional state, Ethiopia; 16.5% reported by Akoth et al. (2021) in Kenya, as well as a pooled prevalence of 25.72% reported in a systematic review conducted using nine primary studies with a total of 6,154 HIV-positive women in Ethiopia (Mekie et al., 2021). Though it is similar to reports of 45.1% and 49% unmet family planning needs among HIV-positive women in Uganda (Wanyenze & Lule, 2015) and Cross-River state, Nigeria respectively (Okigbo et al., 2014). However, the result was found to be higher than the 51.6% reported by Oyebode et al. (2016) in a study conducted in Jos, Nigeria.

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This study observed that the factors associated with unmet family planning needs in the present study population were the duration of HIV status awareness, ART duration, number of sexual partners, age, gender, and religion. This agrees partly with the report of Feyissa and Melka (2014) that age, educational status, desired children, family planning not being used previously, not receiving family planning on the day of interview at HIV/AIDS care, and not being on ART were factors associated with unmet family planning needs among women living with HIV in Ethiopia. Conversely, Demissie et al. (2021) in their study reported factors associated with unmet family planning need to include discussions with healthcare providers, previous pregnancy, future fertility desire, and having sexual partners. The finding of this study also agrees partly with the report of Kassie et al. (2021) that place of residence, age of the women, number of alive children, intention to have more children and ever-used contraceptives were the main factors associated with the unmet need for family planning.

All the studies above, identified age as a common factor associated with both met and unmet family planning need among PLWHA both in women only population as well as a population of men and women as applied in this current study. This shows that age is an important factor that cuts across gender and region regarding the family planning needs of PLWHA and also underscores age-related changes in family planning needs as previously discussed (Ama & Olaomi, 2021). Regression analysis also showed that respondents who were 40 years or more were 2.15 times more likely to experience unmet family planning needs compared to those less than 40 years. This agrees with the findings in Kwale county, Kenya where the age group above 45 years had higher odds of unmet needs(Mumbo et al., 2021). However, this is contrary to the findings in Ethiopia where the odds of unmet need for family planning were more than twice as high in the age group 15-34 years as opposed to their older counterparts Feyissa and Melka (2014) and young women aged 15-24 years were also found to be 3.12 times more likely to have an unmet need for family planning compared to those ≥35 years (Mekie et al., 2021). Hence, understanding the age-related dynamics of family planning needs among PLWHA could help strengthen family planning services to close the gaps in unmet family planning needs among PLWHA.

In addition, the number of sexual partners was also associated with unmet family planning needs.The regression analysis showed that respondents who had one sexual partner were 2.98 times more likely to experience unmet family planning needs when compared to respondents who had multiple sexual partners. This is contrary to the report of Demissie et al. (2021)thathaving multiple sexual partners (AOR = 5.26, 95% CI 1.79–15.5) as compared with one sexual partner (AOR = 7.24, 95% CI 1.82–28.74) was a predictor forunmet needs for family planning among PLWHA in Oromia regional state, Ethiopia. By implication, PLWHA who had multiple sexual partners demonstrated higher odds of unmet family planning needs. The difference observed may be due to the studied population as Demissie et al. (2021) recruited only women living with HIV/AIDS for their study. This suggests that the inclusion of men living with HIV/AIDS in studies of family planning needs among PLWHA may impact the trend of predictors of unmet family planning needs, which could also indicate the distinctiveness of family planning needs among men living with HIV/AIDS.

This study also found a significant association between unmet family planning needs and duration of HIV awareness as well as ART duration. These associations may be linked with improvements in the physiological status of PLWHA following continued use of antiretroviral therapy with the characteristic renewal of sexual and reproductive desires. In other words, those who had been on ART for longer than four years tended to have unmet family planning needs. The finding of anyassociation at all between unmet family planning needs and ART duration agrees with the report of Feyissa and Melka (2014) that having unmet family planning needs was higher in women who did not start ART compared to those on ART. This study also found a significant association between religion and unmet family planning need among PLWHA, which supports the report of Wanyenze and Lule (2015) that other Christian denominations (Pentecostals and Seventh Day Adventists) demonstrated higher unmet family planning needs compared to Catholics. It must be pointed out here that the study was conducted in a predominantly Christian area and this may have accounted for the low percentage (1.8%) of respondents of the Islamic faith which was not significant during analysis. However, in a study titled, “Fertility desire concordance and contraceptive use among couples living with HIV in Northern Nigeria”,

conducted by Iliyasu et al. (2020) in Kano state, Nigeria which is a predominantly Muslim area, it was shown that the Muslim respondents were in the majority (86.3%). Religion and religious affiliations are known determinants of the belief system of different groups and could influence the social perception and behaviours of individuals, including contraceptive use and unmet need for family planning**.**

4. CONCLUSION

There is a high prevalence of unmet family planning needs among PLWHA in Bayelsa state, South-South region of Nigeria. Unmet family planning needs were associated with disease-related factors; duration of status awareness and ART duration, as well as sociodemographic factors; age, gender, religion and thenumber of sexual partners. There is a need to explore the possibilities of closing gaps in family planning needs among PLWHA by addressing the identified factors.

CONSENT

All participants who indicated an interest in being a part of the study gave signed informed consent before being recruited into the study.

ETHICAL CONSIDERATION

Ethical approval was obtained from the Ministry of Health, Yenagoa, Bayelsa State with the approval number BSHREC/Vol.1/21/10-A as well as from FMC, Yenagoa with number FMCY/REC/ECC/2021/JUNE/365. The copies of the questionnaire used for data collection were de-identified by using randomly assigned research identifiers to ensure the privacy and confidentiality of information given by the study participants.

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