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# HIV Status Disclosure and Associated Factors among Partners and People Living with HIV in the North Central Region of Nigeria

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ABSTRACT (10PT)

**Background:** Prevention, treatment, and care for people with HIV/AIDS are important foci of public health and control of the disease. HIV has significantly impacted people's health, income and welfare, as well as socialization. Disclosure of HIV status has proven to increase the opportunities for social support, improved access to necessary medical care, and the opportunity to discuss HIV risk reduction with partner's plan. This study examined factors influencing partner HIV status disclosure among people living with HIV in North Central, Nigeria. **Method:** This descriptive and cross-sectional study used a multistage sampling technique to randomly select 215 respondents receiving antiretroviral treatment in the study location. **Results:** The results showed that all youngsters aged 15-19 had never disclosed their HIV status to sexual partners due to the fear of discrimination, rejection, and abandonment. The study found a significant association between minimizing the stress of keeping HIV secret and HIV partner disclosure (β=0.944, Odd Ratio OR=2.570, CI=1.79-3.69, p<0.05). **Conclusion:** The study showed that discrimination and stigmatization are major sources of discouragement in the disclosure of HIV status to partners as well as the fear of rejection and abandonment especially among young adolescents. It is therefore recommended that HIV treatment and awareness programs should incorporate HIV status disclosure and counselling as part of intervention projects for HIV/AIDS programs. HIV status disclosure to partners will foster and promote partner's understanding, patient's health and well-being. This will not only bring social and psychological support, but also reduce misguidance on HIV status.

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## Introduction

Prevention, treatment, and care for people living with Human Immunodeficiency Virus (HIV) and acquired immunodeficiency syndrome (AIDS) remain major global health concern. In order to advance HIV-status, management, treatment and supporting measures for individuals to meet the UNAIDS 90-90-90 indicators for people living with HIV, there is a need to encourage partner disclosure among vulnerable individuals [1]. HIV on a global scale has shown great impacts in people's health, economy, and welfare as it affects all aspect of social and physical wellbeing of individuals [2]. Sub-Saharan Africa bears the greatest burden of HIV/AIDS epidemic in the world, and due to continuous stigmatization of infected individuals, patients are driven away from receiving quality and good care. However, disclosure of HIV status to partners may create opportunities for incredible support from partners or rejection as the case may be [3]. Partner notification means that sexual partners of individuals recently diagnosed with HIV are notified of their exposure and HIV status [4]. According to World Health Organization (WHO), partner disclosure has several potential benefits for individuals, including increased opportunities for social support, improved access to necessary medical care, antiretroviral treatment, discussions and implementation of HIV risk assessment with partners, and plans for the future [5] [6].

According to a technical report in 2018 by Nigeria HIV/AIDS Indicator and Impact Survey (NAIIS) in a national household-based survey, the HIV prevalence rate in North Central was 2.1%. By gender disaggregation, the prevalence rate of females aged 15-64 was more than their male counterparts aged 15-64 [7]... When and if HIV status is disclosed, stigma and discrimination from partners are terrible consequences for women especially in developing countries. AIDS-related stigma has remained a challenge to disclosure in many local communities. Moreover, fear of rejection is associated with the difficulty of disclosure of HIV status just as negative opinion from spouses, and fear of accusation of infidelity, among many others [6]. Other difficulties are usually encountered from personnel to which the care of HIV patients is entrusted. These may include being denied access to critical HIV services, resulting in more HIV infections and deaths [1]. More so, HIV/AIDS is not yet a socially accepted ailment as normal chronic disease, unlike other cardiovascular diseases, making HIV/AIDS patients vulnerable, stigmatized, and disinclined to disclose their status to others, especially close relatives [7]. Thus, stigma is a barrier to prevention, treatment, and care for HIV/AIDS. Stigmatization, whether experienced, perceived, or internalized, is often an important concern for individuals with chronic and incurable health conditions like HIV/AIDS [7].

Meanwhile, in a study, the percentage of women and men who reported discriminatory attitudes toward people living with HIV was 46.8% [1]. This discriminatory attitude has a link to the unlikelihood of disclosing HIV status to partners for the fear of discrimination and social isolation [1] [8]. A focus on HIV-positive African people showed that the most prevalent reason for withholding information on HIV status was fear of stigmatization [9]. Partner disclosure can come from either of the spouses due to its importance in reducing transmission among discordant couples. Disclosure will lead to a significant preventive effort to reduce HIV transmission among couples that practice polygyny and polygamy. Polygamy is perceived to have its positive side of reducing unhealthy sexual behavior among men in the Northern part of Nigeria, but the danger of one among the wives being infected with HIV would perhaps lead to infection of the husband, co-wives and infant babies who are parties in the polygamy [10][11]. A study on HIV status non-disclosure among pregnant women living with HIV presented a detrimental consequence as non-disclosure is associated with a higher likelihood of an infant being infected [12]. Although some experts have recommended that patients should be encouraged to disclose their HIV status to their spouses voluntarily, it is up to such HIV patients to disclose their status to others [13]. Studies have shown that patients shared their experiences when they disclosed their status to their partners, with the fact that in most Sub-Saharan African countries, voluntary disclosure results in negative consequences such as domestic violence, withdrawal of financial support, and humiliation [13] [14] [15] [16] [17] . Statistics have revealed that 11% of ever-married women between age 15 and 49 years experienced physical or sexual violence from a male partner [1].

Also, HIV status disclosure rates were 16.7% and 86% in developing countries and developed countries respectively. Meanwhile, for persons living with HIV who have current or steady partners, the average rates of disclosure accounted for 16.7% in developing nations and 86% in developed nations [10]. In a study conducted amongst rural Nigerian women by Odiachi and colleagues, the study emphasized how imperative it is for women living with HIV to disclose their status to their spouses to prevent HIV transmission to infants and to stay healthy on treatment [18]. However, a there are reports that partner notification of HIV testing during pregnancy was lower than expected in sub-Saharan Africa, particularly in Nigeria [19] [20]. Previously, women living with HIV disclose their status, history and experiences but majority of the women who were pregnant, and newly or previously HIV-diagnosed, avoided disclosure to male partners due to the fear of

divorce and violence [14]. Nonetheless, in this study we examined the attitude and readiness of HIV patients to disclose their status to their partners in the north central region of Nigeria.

## Materials and Method

### Study Design and Participants

The study adopted a descriptive, cross-sectional study using a multistage sampling technique to randomly select 213 respondents receiving antiretroviral treatment in North Central Nigeria [18]. We chose a cross-sectional survey to generate information at a point in time and due to time constraints as opposed to the longitudinal survey [21]. Eligible respondents were adults 18 years and above and had HIV-positive test results above six months since the initiation of ART. Other criteria include living or cohabiting with a partner or not living with a partner but had at least a sexual partner a few months before the survey, and must be receiving Antiretroviral Therapy (ART) in North Central Nigeria. The study considered the sexual orientation of heterosexual couples or partners who were cohabiting, living together or not living together but had at least a sexual partner who was registered with such orientation in the study location healthcare facilities. The reason was that the sexual orientation recognized in the Nigerian constitution was predominantly heterosexual at the time of the survey. The minimum sample size was calculated using a model $n = \frac{z_{\alpha}^2 \times p \times q}{d^2}$ for descriptive studies, where n= the desired sample size (when the population is >10,000); z= the standard normal deviation, usually set at 1.96, corresponding to a 95% confidence interval, p= prevalence rate from previous studies – 16.7%, the proportion of respondents who had disclosed their HIV status to their partners [10].

q=1-p; d=degree of accuracy desired, 5% (α=0.05).

$$n = \frac{(1.96)^2 \times 0.167 \times 0.833}{(0.05)^2}$$

The population in the study location was more than 10,000 patients in care. Therefore, the minimum sample size was set at 214.76. The final respondents selected using systematic random sampling was approximately 215 patients receiving ART.

### Research Instrument

The instrument used for data collection was paper-based questionnaires. Besides being a widely-used research technique, the questionnaires are useful for quick information gathering and coding. The use of a paper-based questionnaire, as opposed to the online questionnaire, was due to poor and limited internet access amongst the respondents receiving ART treatment in the study location. Nonetheless, the instrument was a structured questionnaire to ensure responses' comparability and facilitate quantitative analysis. Data from questionnaires are cheaper and quicker to analyze and allow variable expressions in nominal, ordinal, and ratio scales rather than responses to open questions. Therefore, ART centers in the study location were visited and structured questionnaires with sections that addressed the objectives of the study were administered. Important sections of the questionnaires include patients' socio-demography, reasons for disclosure or non-disclosure of HIV status to partners, effects of the disclosure to partners, and factors influencing partner HIV status disclosure among people living with HIV. Each questionnaire took an average of 15 minutes, and translation was made into the primary local languages (Yoruba, Igala and Pidgin). The data collections were carried out at the ART facility after respondents had received ART services such as ART medication refills, HIV consultations and treatment, viral load sample collections, adherences services and support group meetings. The data collection period took six months, from March 2021 to September 2021. Major challenges to data collection in this study included occasions when eligible respondents missed appointments, transferred and inability to follow-up on patients. The research observed ethical guideline was provided and approved by Kogi State Ministry of Health, Research and Ethics Committee, Lokoja, Nigeria. Before respondents were allowed to participate in this study, there was informed consent and assurance of respondents' confidentiality in line with data privacy and protection laws in Nigeria.

### Data Analyses

The data were processed free of omissions and incompleteness. Filled and complete questionnaires were entered directly into Statistical Package for Social Sciences (SPSS) by IBM SPSS Inc. of Chicago, Illinois, USA Version 20 for statistical analysis for descriptive and inferential statistics. Quantitative research questions regarding partner HIV status disclosure were analyzed by descriptive statistical, percentages, and cross-tabulation. The associated factors influencing partners' HIV status disclosure were further analyzed with inferential Pearson's chi-square and binary logistic regression analysis to model a significant relationship between the dependent and independent variables in the study location.

## Results and Discussion

### Results

### Socio-demographic profile of respondents

In this study, majority (37.7%) of the respondents aged between 30 and 39 years, followed by 20-29 years (35.8%). The least age group in this study was adolescents around 19 years (3.3%). A large proportion (86.5%) of respondents was female compared to male respondents (13.5%). The majority (41.4%) of respondents who participated in the study had at least a primary level of education, and over half (55.3%) of respondents had been married at the time of the study. Respondents who had separated and divorced accounted for 21.9 and 6.5%, respectively.

**Table 1**: Socio-demographic characteristics of respondents

| | Frequency (n=215) | Percentage (%) |
|---|---|---|
| **Age** | | |
| 15-19 | 7 | 3.3 |
| 20-29 | 77 | 35.8 |
| 30-39 | 81 | 37.7 |
| 40+ | 50 | 23.3 |
| **Sex** | | |
| Male | 29 | 13.5 |
| Female | 186 | 86.5 |
| **Education** | | |
| None | 58 | 27.0 |
| Primary | 89 | 41.4 |
| Secondary | 53 | 24.7 |
| Tertiary | 15 | 7.0 |
| **Marital Status** | | |
| Single | 35 | 16.3 |
| Married | 119 | 55.3 |
| Divorced | 14 | 6.5 |
| Separated | 47 | 21.9 |
| **Religion** | | |
| Christianity | 131 | 60.9 |
| Islam | 80 | 37.2 |
| Traditional | 4 | 1.9 |
| **Occupation** | | |
| Employed | 186 | 86.5 |
| Unemployed | 29 | 13.5 |

## Partner HIV status disclosure versus non-disclosure

Socio-demographic characteristics of respondents was cross-tabulated by HIV partners disclosure, the time it took respondents to open up to partners about HIV status, and reasons for disclosure and otherwise are presented in table 2 below to show respondents' socio-demographic profile by reasons of HIV status disclosure or non-disclosure. All adolescent respondents about 19 years had never disclosed their status to sexual partners (100.0%). A large proportion (88.0%) of respondents aged above 40 years had disclosed HIV status to partners. There was a significant association between respondents' age and HIV partner disclosure ($X^2 = 27.0, df = 3, p = 0.00$). The difference between the ages of patients living with HIV and HIV status disclosure to partner did not occur by chance. Considering the gender of respondents living with HIV, more male (93.1%) respondents had disclosed their status to female partners. The difference between the gender with respect to HIV status partner disclosure is statistically significant ($X^2 = 9.8, df = 1, p = 0.00$).

Meanwhile, respondents without formal education (75.9%) readily disclosed HIV status to partners than respondents with tertiary level of education (46.7%). The association between educational status and HIV status notification was statistically significant ($X^2 = 17.4, df = 3, p = 0.00$). Also, more than half of respondents who had divorced and separated had never notified their partner about their HIV status (57.1% and 53.2%) respectively, compared to more than three-quarters (79.8%) of married respondents who had informed their partners about their HIV status. The association between the marital status of respondents and HIV partner notification was statistically significant ($X^2 = 21.5, df = 3, p = 0.00$). Most respondents living (81.0%) with a partner at the time of the study had disclosed their HIV status to partners than those who stayed alone. Respondents living with a partner have a significant association with HIV partner disclosure ($X^2 = 32.8, df = 1, p = 0.00$).

## Timing of HIV disclosure to the partners

After the initial initiation of respondents on ART, the study examined the time it took respondents to notify partners of their HIV status. The study showed that respondents within 30 and above 40 years disclosed their HIV status to partners within few weeks when they were initiated on ART medications (66.7% and 65.9%), respectively. The relationships between ages and disclosure period were also statistically significant ($X^2 = 10.3, df = 4, p = 0.04$). It implies that age has strong connection with HIV disclosure to partners. All divorcees who participated in this study claimed it took them several months to disclose their HIV status to their partners compared with other respondents with different marital status. The relationship between marital status and the timing of disclosure was also statistically significant ($X^2 = 15.2, df = 6, p = 0.02$). Over three-quarters (76.3%) of Christians who participated in the study had disclosed their HIV status to their partners compared to other respondents who practiced other religions (23.7%). Nevertheless, considering the religion and the timing of HIV partner disclosure, the majority (83.3%) of respondents who practiced Islam disclosed their HIV status to partners within a few weeks compared to Christian respondents (47.0%). The results showed a significant relationship between the respondent's religion and HIV partner disclosure ($X^2 = 19.5, df = 4, p = 0.00$). The significance of respondents' religion in disclosing HIV status to partners was considerably important. Respondents who had HIV and were on ART below one year had disclosed their HIV status to their partners within few weeks (73.8%). The association between number of years on ART and the timing of disclosure was also statistically significant ($X^2 = 16.7, df = 4, p = 0.00$).

## What encouraged partner HIV status disclosure?

The study asked respondents who had disclosed their HIV status to their partners prior to the survey what encouraged them to do so. No adolescents aged 15-19 disclosed their status to their sex partners. Meanwhile, the majority (84.1%) of respondents aged above 40 years were encouraged to disclose their HIV status to partners to receive support and taking up family responsibility from their spouses. Nearly one-third (31.5%) of respondents in age 20-29 disclosed their HIV status to partners to prevent transmission to another sexual partner. The association between what encouraged respondents to disclose their HIV status to sexual partners and their age group was statistically significant ($X^2 = 11.6, df = 4, p = 0.02$). A large proportion (88.9%) of males disclosed their HIV status to their spouse to receive support from their partner, compared with less than two-thirds (62.2%) who wanted spouse support and responsibility.

In comparison, 26.1% were encouraged to prevent HIV transmission from their sexual partners, and 11.8% would like to reduce the stress associated with keeping HIV status secret. The relationship between what encouraged respondents to disclose their HIV status to sexual partners and their gender was statistically significant ($X^2 = 9.38, df = 2, p = 0.01$). Also, the majority (84.0%) of respondents with a primary level of education would like to disclose their status based on the premise that they want the spouse to support them and take responsibility. Almost half (42.9%) of respondents opined that they disclosed their HIV status to partners to prevent it from their partners. The relationship between what encouraged respondents to disclose their HIV status to sexual partners and their level of education was statistically significant ($X^2 = 42.9, df = 6, p = 0.00$). The religion of respondents encouraged respondents to disclose their HIV status to their partner to receive support from their spouse, especially in the Islamic religion (81.0%), followed by Christianity (64.0%). The association between what encouraged respondents to disclose their HIV status to sexual partners and their religion was statistically significant ($X^2 = 29.2, df = 4, p = 0.00$).

## What discouraged HIV status disclosure to partner?

In this study, we also asked respondents who had never disclosed their HIV status to their partners and what had discouraged them. 50.0% of respondents above 40 years reported that negative opinions from the spouse were reasons for non-disclosure while other half of the respondents claimed rejection or abandonment. Within the vulnerable adolescents, a large proportion (87.5%) of them revealed that discrimination made them shut their mouths against HIV partner disclosure. The association between the age of respondents and what discouraged respondents from HIV status disclosure to partner was statistically significant ($X^2 = 17.3, df = 6, p = 0.01$). Meanwhile, level of formal education significantly correlates with HIV partners' non-disclosure of HIV status ($X^2 = 25.5, df = 6, p = 0.00$). The majority of respondents with secondary (87.5%) and tertiary (62.5%) levels of education claimed that negative opinions by their spouses contributed to what discouraged them from disclosure, while about three-quarters (74.4%) and nearly half (42.9%) of respondents with primary and no education respectively claimed that stigmatization was the reason behind their refusal to share their experience about HIV status to a partner. Considering socio-demographics like the marital status of respondents, three-quarter (75.5%) of the unmarried reacted to a negative opinion by sexual partners, while the majority of married (58.3%), divorced (87.5%), and separated (60.0%) admitted that discrimination was a discouraging factors that led them never to disclose their HIV status to their partners. The association between the marital status of respondents and what discouraged respondents from HIV status disclosure to partner was statistically significant ($X^2 = 19.0, df = 6, p = 0.00$) (Table 2).

**Table 2**: Contingency table showing percentages distribution of respondents' socio-demographic profile by reasons HIV status disclosure or non-disclosure (n=215)

| Characteristics | Disclosure/non-disclosure | | | Time it took you to disclose HIV Status to your partner | | | | What encouraged you to disclose HIV status to your partners? | | | | What discouraged you not to disclose HIV status to your partners? | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Age** | **Disclose** | **Not Disclose** | **P-value** | **Few weeks** | **Months** | **Years** | **p-value** | **Spouse support & responsibility** | **Prevention of HIV transmission** | **Reduce stress in keeping secrete** | **p-value** | **Negative Opinion** | **Rejection/ abandonment** | **Discrimination** | **P-value** |
| 15-19 | 0.0 | 100.0 | 0.00* | 0.0 | 0.0 | 0.0 | 0.04* | 0.0 | 0.0 | 0.0 | 0.02* | 14.3 | 0.0 | 85.7 | 0.01* |
| 20-29 | 70.1 | 29.9 | | 46.3 | 48.1 | 5.6 | | 51.9 | 31.5 | 16.7 | | 43.5 | 13.0 | 43.5 | |
| 30-39 | 59.3 | 40.7 | | 66.7 | 33.3 | 0.0 | | 68.8 | 20.8 | 10.4 | | 21.2 | 9.1 | 69.7 | |
| 40+ | 88.0 | 12.0 | | 65.9 | 25.0 | 9.1 | | 84.1 | 9.1 | 6.8 | | 50.0 | 50.0 | 0.0 | |
| **Sex** | | | | | | | | | | | | | | | |
| Male | 93.1 | 6.9 | 0.00* | 51.9 | 48.1 | 0.0 | 0.21 | 88.9 | 0.0 | 11.1 | 0.01* | 100.0 | 0.0 | 0.0 | 0.10 |
| Female | 64.0 | 36.0 | | 60.5 | 33.6 | 5.9 | | 62.2 | 26.1 | 11.8 | | 28.4 | 13.4 | 58.2 | |
| **Education** | | | | | | | | | | | | | | | |
| None | 75.9 | 24.1 | 0.00* | 63.6 | 36.4 | 0.0 | 0.11 | 77.3 | 22.7 | 0.0 | 0.00* | 35.7 | 21.4 | 42.9 | 0.00* |
| Primary | 56.2 | 43.8 | | 68.0 | 24.0 | 8.0 | | 84.0 | 14.0 | 2.0 | | 10.3 | 15.4 | 74.4 | |
| Secondary | 84.9 | 15.1 | | 44.4 | 48.9 | 6.7 | | 40.0 | 24.4 | 35.6 | | 87.5 | 0.0 | 12.5 | |
| Tertiary | 46.7 | 53.3 | | 57.1 | 42.9 | 0.0 | | 57.1 | 42.9 | 0.0 | | 62.5 | 0.0 | 37.5 | |
| **Marital Status** | | | | | | | | | | | | | | | |
| Single | 65.7 | 34.3 | 0.00* | 60.9 | 39.1 | 0.0 | 0.02* | 87.0 | 13.0 | 0.0 | 0.05 | 75.5 | 0.0 | 25.0 | 0.00* |
| Married | 79.8 | 20.2 | | 62.1 | 30.5 | 7.4 | | 64.2 | 18.9 | 16.8 | | 16.7 | 25.0 | 58.3 | |
| Divorced | 42.9 | 57.1 | | 0.0 | 100.0 | 0.0 | | 50.0 | 50.0 | 0.0 | | 12.5 | 0.0 | 87.5 | |
| Separated | 46.8 | 53.2 | | 59.1 | 40.9 | 0.0 | | 63.6 | 31.8 | 4.5 | | 28.0 | 12.0 | 60.0 | |
| **Occupation** | | | | | | | | | | | | | | | |
| Employed | 70.4 | 29.6 | 0.05 | 59.5 | 35.1 | 5.3 | 0.50 | 68.7 | 21.4 | 9.9 | 0.16 | 30.9 | 14.5 | 54.5 | 0.71 |
| Unemployed | 51.7 | 48.3 | | 53.3 | 46.7 | 0.0 | | 53.3 | 20.0 | 26.7 | | 28.6 | 7.1 | 64.3 | |
| **Religion** | | | | | | | | | | | | | | | |
| Christianity | 76.3 | 23.7 | 0.00* | 47.0 | 46.0 | 7.0 | 0.00* | 64.0 | 27.0 | 9.0 | 0.00* | 29.0 | 3.2 | 67.7 | 0.07 |
| Islam | 52.5 | 47.5 | | 83.3 | 16.7 | 0.0 | | 81.0 | 0.0 | 19.0 | | 31.6 | 21.1 | 47.4 | |
| Traditional | 100.0 | 0.0 | | 100.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | | 0.0 | 0.0 | 0.0 | |
| **Years on ART** | | | | | | | | | | | | | | | |
| 1yr. & below | 67.0 | 33.0 | 0.18 | 73.8 | 26.2 | 0.0 | 0.00* | 56.9 | 23.1 | 20.0 | 0.02* | 31.2 | 15.6 | 53.1 | 0.57 |
| 2-4 yrs. | 63.4 | 36.6 | | 51.9 | 42.3 | 5.8 | | 69.2 | 23.1 | 7.7 | | 33.3 | 13.3 | 53.3 | |
| 5yrs. and above | 80.6 | 19.4 | | 37.9 | 48.3 | 13.8 | | 86.2 | 13.8 | 0.0 | | 14.3 | 0.0 | 85.7 | |
| **Currently Staying with a partner** | | | | | | | | | | | | | | | |
| Yes | 81.0 | 19.0 | 0.00* | 60.9 | 35.7 | 3.5 | 0.31 | 65.2 | 20.9 | 13.9 | 0.26 | 25.9 | 22.2 | 51.9 | 0.19 |
| No | 42.5 | 57.5 | | 51.6 | 38.7 | 9.7 | | 74.2 | 22.6 | 3.2 | | 33.3 | 7.1 | 59.5 | |
| **Total** | **146** | **69** | | **86** | **53** | **7** | | **98** | **31** | **17** | | **21** | **9** | **39** | |

*P<0.05 level of significance

## Factors influencing HIV partner disclosure amongst respondents

Logistic regression was used to test associations between factors influencing disclosure of HIV status among people living with HIV in the study locations. Initially, factor analysis was measured for dimension reductions through a principal component analysis to reduce factors that encouraged respondents to disclose HIV status to partners. Principal component analysis identified four factors including anticipating spousal support, sense of spouse responsibility, prevention of HIV transmission from the spouse, and minimizing stress associated with keeping HIV secret as major factors affecting HIV status disclosure to partners. Subsequently, we used multivariate analysis to test the degree of associations between independent and dependent variables assessed using odds ratios. The overall model in Table 3 revealed that the factors identified were good predictors of the dependent variable i.e. partner HIV status disclosure ($\beta$=-0.516, df=1, $p<0.05$) (Table 3). The model made use of dichotomous response variables which were disclosure (1) and non-disclosure (0) and categorical explanatory variable(s) were various factors influencing partner HIV status disclosure among people living with HIV in North Central Nigeria.

**Table 3**: Model

| | Beta Coefficient | Standard Error | Wald Statistics | Degree of Freedom | P-value | Odd Ratio (OR) |
|---|---|---|---|---|---|---|
| Constant | -0.516 | 0.144 | 12.839 | 1 | 0.000* | 0.597 |

*P<0.05

Considering the factors influencing HIV partner disclosure amongst respondents, the logistics regression model found that there was no significant association between anticipating spousal support in dealing with HIV ailment among respondents. Thus, anticipating spousal support was 1.276 times more likely to influence HIV partner disclosure but was not statistically significant ($\beta$=0.244, Odd Ratio OR=1.276, CI=0.81-2.01, $p>0.05$). Also, there was no significant association between a sense of spousal responsibility and partner disclosure of HIV status. Sense of responsibility from partners was observed to be 1.247 times more likely to influence HIV partner disclosure but was not statistically significant ($\beta$=0.221, Odd Ratio OR=1.247, CI=0.83-1.89, $p>0.05$) (Table 4).

However, there was a significant relationship between preventing HIV transmission from spouse and partner disclosure of HIV amongst respondents. Preventing HIV transmission from partners was 0.457 times more likely to influence HIV partner disclosure ($\beta$=-0.784, Odd Ratio OR=0.457, CI=0.29-0.72, $p<0.05$). There was also a significant association between minimizing the stress of keeping HIV status secret from partner this study. Minimizing the stress associated with keeping HIV secret from partner was 2.570 times more likely to influence HIV partner disclosure and was statistically significant ($\beta$=0.944, Odd Ratio OR=2.570, CI=1.79-3.69, $p<0.05$).

**Table 4**: Logistics regression model of factors influencing HIV partner disclosure among respondents

| HIV partner disclosure | Beta Coefficient | Standard Error | Wald Statistics | Degree of Freedom | P-value | Odd Ratio (OR) | 95% C.I.for Odd Ratio | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lower | Upper |
| Constant | -1.511 | 0.760 | 3.952 | 1 | 0.5 | 0.221 | | |
| Anticipating spousal support | 0.244 | 0.233 | 1.097 | 1 | 0.23 | 1.276 | 0.809 | 2.013 |
| Sensing spouse responsibility | 0.221 | 0.211 | 1.095 | 1 | 0.23 | 1.247 | 0.825 | 1.886 |
| Preventing HIV transmission from spouse | -0.784 | 0.232 | 11.423 | 1 | 0.00* | 0.457 | 0.290 | 0.719 |
| Minimizing stress associated with keeping HIV secret | 0.944 | 0.184 | 26.376 | 1 | 0.00* | 2.570 | 1.793 | 3.685 |

*P<0.05

## Discussions

In this study, we examined various factors affecting disclosure and non-disclosure of HIV status to partners of individual living with HIV. The study revealed that most people living with HIV in the study location had disclosed to their partners (Table 2). It may be that awareness about the disease and campaigns against its spread are contributing to the knowledge and practice of HIV reduction in the study location. HIV disclosure in Northcentral (67.9%) is higher than disclosure in a similar study carried out in Sokoto, another Northwestern region of Nigeria (55.9%) [15]. Socio-demographic characteristics correlated with HIV partners disclosure as a large proportion of respondents above 40 years had disclosed HIV status to partners (Table 2) compared with youngsters (around19 years) who had never disclosed their status to sexual partners. The major obstacle to disclosing HIV status among adolescent in western Kenya was the possibility of disengagement by their care givers [22]. The same could be applicable here as such adolescent in this study, though married, some were likely to be dependent on parent or partners for some life basic needs. Also, extended conservative cultural tendencies and communal or religious integrations among Africans could be responsible for unwillingness to disclose positive HIV status in Nigeria as such individual may risk being openly avoided by other people. The association between age and HIV disclosure among partner was significant indicating that the age of a partner has considerable influence on HIV disclosure to partners. As observed in this study, and as earlier reported, important factors found associated with disclosing HIV are perceived interpersonal risks that is predicated on anxiety, fear and worry [23], to which age, experience and maturity are critical.

Male respondents found it easier to disclose their HIV status to their partners than female counterparts. This is similar to what was earlier reported that more male respondents were able to make known their HIV status, even if it is positive, compared to higher percentage of women who identified self-perceived stigma and the fear of being discriminated as the reasons for non-disclosure [24]. It was also found that female patients living with HIV are three times more likely to have the fear of discrimination if their HIV status were to be disclosed [24]. Other factors identified to have hindered disclosure HIV status in Tanzania include fear of divorce, loss of financial support and traditional practices [25]. Apparently, gender is still a major factor in HIV status disclosure. Invariably, and to a reasonable degree, there is gender disparity in the study location, as women were still skeptical of their husbands' reaction when and if they disclose their status as earlier reported [24]. indicating that men could have absolute control of decision-making at home compared to women.

The association between marital status of respondents and partner notification was statistically significant as married people had disclosed their status more than any other marital ranks (Table 2). The study showed that divorcee respondents spent several months and years before they disclosed their HIV status to sexual or intended partners. The delay in disclosing HIV status, irrespective of marital status, may be due to stigmatization that could lead to marital crises. This finding is in line with a similar study among African and Afro-Caribbean people who for the reason of stigmatization and negative experience with partner opted for non-disclosure of their HIV status [9]. However, study on diverse individual males living with HIV, who had multiple partners including homosexuals, had showed higher tendencies of disclosing to all their partners while half of those who refused to disclose had one and only partner [26]. Although majority of the respondents in this study did not disclose if they have multiple partners, having a single partner is therefore not a reason for HIV status disclosure.

Respondents who had enrolled on ART less than one year found it was good to disclose their status partners within few weeks (Table 2). The majority of people living with HIV would want to disclose their status to their partner in order to minimize the stress associated with keeping HIV status secret (Table 4). This factor doubles the length of time that respondents living with HIV reveal their status among vulnerable individuals in the study location. Nonetheless, it has been found that revealing HIV positive status is not always voluntary [27]. Finally, respondents would also wish to prevent their partners from being infected as they consider disclosing their health status to their partners is paramount. The study provides insight into important information that can strengthen acceptance of HIV patients among partners and family members especially when HIV statuses are disclosed to partners with the guidance of heath care professional. Partner's knowledge on HIV patient is vital in public health as it may help control the epidemic in society. However, time constraints did not allow for in-depth analysis, as the qualitative approach would have helped to gather relevant in-depth information about the respondents' partners' views on their HIV status disclosure.

## Conclusion

Essentially, the challenges facing HIV status non-disclosure to partners among individual living with HIV vary with respect to age, gender, cultural inclination and sexual orientation. Discrimination against HIV patients and social stigmatization are discouraging factors for HIV status disclosure to partners due to the fear of rejection and abandonment especially among adolescents and youngsters. The result of this study suggests that structural changes that is centered on individuals to seek counselling should be incorporated in HIV treatment programs as part of the intervention projects in HIV programs. More services that would promote HIV status disclosure, foster and promote HIV patient's health and well-being should be made available. This will not only encourage social and psychological support but it will also reduce discrimination and stigmatization. Patient should be willing to seek emotional support from care givers as they undergo antiretroviral treatment, and be willing to communicate similarly with their partners.

### Declaration (11pt)

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**Conflicts of Interest:** The authors declare no conflict of interest.

**Authors' Contributions:** AO prepared data collection instrument, analyzed data, and drafted the manuscript; JO revised the manuscript; DO organized and coordinated fieldwork and data collection; FO revised the manuscript; and CO assisted in data collection and revised the manuscript.

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