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Predictors of HIV disclosure amongst people living with HIV/AIDS at the University of Calabar Teaching Hospital Calabar, Cross River State, Nigeria

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HIV serostatus disclosure is a challenging but yet an important step necessary for all people living with HIV/AIDS. However, divulging such sensitive information by people Living with HIV/AIDS (PLHIV) may be linked with severe consequences which poses as a hindrance to seeking treatment and adherence. This study therefore aims to determine the prevalence and identify determinants of HIV status disclosure among PLHIV accessing treatment in the University of Calabar Teaching Hospital Calabar, Cross River state, Nigeria. A cross- sectional descriptive study was conducted among patients attending the special treatment clinic of the University of Calabar Teaching Hospital (UCTH). A total of 411 PLHIV accessing treatment in UCTH during the period of study were interviewed. A semi-structured, pretested, interviewer administered questionnaire was employed to obtain Information from participants. Data were summarized using proportions, and chi-square test was used to determine associations between categorical variables. Independent risk factors of disclosure were identified using binary logistic regression while the significance level was set at p<0.05. The overall mean age of PLHIV accessing treatment in UCTH was 35.7± 9.32 years. Females made up more than two-thirds (68.6%) of the study population. The self-reported disclosure rate in this study was 92.2%. The main reasons reported by PLHIV for non-disclosure include, fear of abandonment and violence. Logistic regression analysis revealed perceived social support [OR 12.3; CI: 4.22-12.5] and having a positive spouse [OR 2.57; 95% CI: 1.90-5.03] as major predictors for disclosing one's HIV status. Although the disclosure rate in this study was relatively good, disclosure-enhancing interventions should aim to reduce stigma/discrimination towards PLHIV and improve social support.

Key words: Disclosure, HIV, AIDS, Calabar, Cross River State, Nigeria, tertiary health care.

INTRODUCTION

Human Immunodeficiency Viral Infection and Acquired Immunodeficiency Syndrome (HIV/AIDS) is a major pandemic that has remained an important public health challenge causing significant morbidity and mortality globally especially in developing nations (UNAIDS, 2019). Globally, about 38 million people were living with

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HIV with an estimated 1.7 million new infections and 770,000 AIDS related deaths by the end of 2018. Sub-Saharan Africa which is home to a little over a tenth (12%) of the world population, accounts for 71% of the global burden of HIV infection (Amoran, 2012). Nigeria with one of the highest rates of new infections in Sub–Saharan Africa and the second largest HIV epidemic in the world has 3.2 million people currently living with the virus. The overall adult HIV prevalence in Nigeria has however experienced a decline from 3.4% in 2012 to 1.9% as reported in the 2018 in the Nigeria HIV/AIDS Indicator and Impact Survey (NAIIS) (NAIIS, 2019).

Disclosure of one's HIV serostatus is an important public health strategy in HIV management and prevention efforts and has contributed immensely to the success of HIV control programmes. Disclosing a positive HIV status is a difficult but crucial step for all infected (Atuyambe et al., 2014; Dankoli, 2014; Ahmed-Mohammed et al., 2019). However, HIV disclosure remains sub-optimal across Sub-Saharan Africa (Tadesse , 2014) with a significant proportion of PLHIV delaying their HIV status disclosure for about a year (Clarke , 2010) . Disclosure within countries have been shown to vary by gender, ethnicity, and testing facility (Clarke, 2010; Maeri,et al., 2016; Nacius et al., 2013; WHO, 2003). The rates of HIV serostatus disclosure reported in studies conducted across Nigeria range from 39.5% to as high as 97.5% (Amoran, 2012; Ahmed-Mohammed et al., 2019; Adeoye-Agboola et al., 2016) .

Divulging such sensitive information by PLHIV may be associated with severe consequences which include: physical violence, risks of abandonment, feelings of shame, worry and fear, or rejection (Amoran, 2012 ; Adeoye-Agboola et al., 2016; Deribe et al., 2018; Adefemi et al., 2018) . HIV status disclosure has also been shown to have the potential for stigmatization and marginalization (Odiachi et al., 2018), which further poses a hindrance to seeking treatment, medication acceptance and adherence (Adefemi et al., 2018). Several studies have identified possible reasons for non-disclosure by PLHIV. They include fear of: accusations of infidelity, divorce, embarrassment, verbal abuse, abandonment, blame, rejection, discrimination and concerns about poor public knowledge of the disease (Ahmed-Mohammed et al., 2019; Maeri,et al., 2016; Adeyemo et al., 2011; Chen et al., 2011; World Health Organization, 2004).

However, disclosing one's HIV serostatus offers numerous benefits to PLHIV and the populace. These include: increased opportunities for social support, which could assist individuals cope and recuperate from impaired physical health, have better access to essential medical care including Antiretroviral therapy, improved adherence to treatment, More opportunities for discussion and implementation of HIV risk reduction strategies with partner, increased future planning opportunities (Conserve et al., 2015) and ultimately decrease HIV transmission rate (Osinde et al., 2012; Rujumb et al., 2012).

Disclosure has also been found to either hinder or assist social support (Atuyambe et al., 2014). This was demonstrated in a study conducted by Dessalegn and colleagues who reported that the immediate effect of revealing ones serostatus was gaining psychological and financial support as well as encouraging their partners to go for HIV testing while a third of the respondents (27%) experienced some type of discrimination (Dessalegn et al., 2019). Furthermore, a cross-sectional study disbursed among HIV infected adult patients in South Africa revealed a significantly lower adherence rate among patients who were yet to disclose their serostatus to their partners for fear of being stigmatized by their sexual partners (Nachega et al., 2006).

Given the benefits of HIV disclosure, it is crucial that health policymakers understand when and why disclosure is likely to be advantageous for PLHIV. Several studies have been conducted in Nigeria to determine disclosure patterns among PLHIV however, despite its relevance to HIV management; paucity of data exists regarding the rate of disclosure of HIV status among patients accessing care in Cross River State. This, therefore, informed the decision to determine the prevalence and identify determinants of HIV serostatus disclosure among PLHIV accessing treatment in the University of Calabar Teaching Hospital Calabar, Cross River state, Nigeria.

MATERIALS AND METHODS

The study site was the Special treatment clinic of the University of Calabar Teaching Hospital (UCTH), Calabar, Cross River State, Nigeria. This centre is a major treatment site responsible for providing care and support services for PLHIV in Cross River and other neighbouring states.

Study design

A cross-sectional descriptive study was conducted among HIV infected patients accessing care in UCTH, Calabar.

Study population

The study population comprised of PLHIV who had commenced treatment at the UCTH. Consenting HIV positive adult patients receiving treatment and support in UCTH were eligible to participate in the study while pregnant women and severely ill patients were excluded.

Sample size determination

The Sample size was calculated using the formula for single proportion

$n= z^2pq/d^2$

n= minimum sample size

p = proportion of PLHIV who disclosed their HIV serostatus 61.5% (Titilope et al., 2011)
z = critical value at 95% confidence interval (1.96)
d= degree of accuracy = 0.05
q= complement of p (1-p) =38.5%

$$n = \frac{1.96^2 \times 0.615 \times 0.385}{0.05 \times 0.05} = 363.8$$

= + 10% allowance for non-response
=363.8/ 0.9 = 404.3
n= 405

Sampling technique

All PLHIV receiving care and support in the Special Treatment Clinic of UCTH, who were eligible to participate based on the selection criteria were recruited consecutively until the sample size was reached. The time period for the study was six months (October 2016- February 2017).

Data collection instrument

A semi-structured, interviewer administered questionnaire was employed to collect pertinent information on socio-demographic profile, reasons for non-disclosure, and factors associated with HIV serostatus disclosure. This study was part of a larger study on Adherence to HAART among PLHIV in Cross- River state.

Data analysis

SPSS windows version 22.0 was employed for data analysis. Descriptive statistics (proportions, means and standard deviations) were used to summarize data while inferential statistics bivariate (chi-square) and multivariate (logistic regression) analysis identified significant correlates and predictors of disclosure. The significance level was set at $p < 0.05$. Logistic regression analysis was carried out to identify the independent risk factors of HIV disclosure. Thereafter, variables that were significant at 10% following the bi-variate analysis were entered into a logistic model and predictors were determined at 5% significance.

Operational definition of terms

Disclosure: Disclosure is defined as anyone who discloses his/her HIV Status to someone.
Adherence: Adherence to HAART was measured in the previous seven days of the interview using self-report. A score of 95% and above represented good adherence and less than 95% was rated as having poor/ suboptimal adherence.
Perceived Stigma: for the purpose of this paper is the expected reaction of others to HIV disclosure.

Ethical clearance and consent

The study protocol was reviewed and approved by The Health Research and Ethical Committee of the University of Calabar Teaching Hospital. Permissions to conduct the survey were sought and obtained from the Head of Department as well as the Nurse in charge of the Special Treatment clinic domiciled in the Department of Family Medicine before commencement of the study. Written informed consents were also obtained from respondents for the use of their data for the study.

RESULTS

Four hundred and eleven respondents receiving care and support in the Special treatment clinic of UCTH were studied. The overall mean age of respondents was 35.7±9.3 years. More PLHIV (171; 41.6%) were in the 25-34 years age bracket, followed by (136; 33.1%) in the 35 to 44 age group. More respondents were female; (282; 68.6%) and married (213; 51.8%). A little over a third of PLHIV (163; 39.7 %) had at least secondary level of education. Majority, (326; 79.4%) of PLHIV had spouses who were HIV negative and almost half of the respondents (204; 49.6%) had between 1-3 children. Also, majority (353; 85.9%) were residents of the state and (277; 67.4%) earned below the minimum wage in Nigeria (<₦20, 000) monthly. All participants studied were Christians (Table 1).

The medical profile including support (Table 2) revealed that almost half (198; 48.2%) were diagnosed as HIV positive more than two years (24 months) ago. The median period of diagnosis was (24± 189 months). Most PLHIV, (386; 93.9%) reported that their health status had improved since commencement of ART and about three-fifths (246; 59.9%) attained ≥ 95% adherence to medications a week prior to the study.

In terms of support, majority, (274; 66.7%) of respondents received some form of support from family and friends, (343; 83.5%) lived with others and (350; 85.2%) did not belong to HIV support group. Furthermore, perceived stigma was absent in more respondents (295; 71.8%), while about four-fifths admitted not feeling depressed. Among the 411 participants, a vast majority (379; 92.2%) reported disclosing their HIV serostatus to someone. More, (133; 32.4%) revealed their HIV serostatus to their relatives and family members, followed by spouse (110; 26.8%) and immediate family members only (58; 14.1%) (Table 3).

Factors associated with disclosure on bivariate analysis (Table 4) were: being in a stable marital relationship, (204; 91.5%) were more likely to make known their HIV status compared with (175; 88.4%) who were currently unmarried ($p<0.05$). Similarly, having a HIV infected spouse and not living alone were other significant correlates of HIV disclosure ($p<0.05$).

In addition, a significantly greater proportion of respondents (269; 98.2%) who enjoyed some form of social support, were more likely to divulge their HIV serostatus compared with (110; 80.3%) who lacked social support. Similarly, respondents who did not feel depressed (308; 93.6%) were more likely to disclose their HIV status compared to their depressed counterparts ($p<0.05$) (Table 5). The independent predictors of disclosure amongst PLHIV accessing treatment in the special treatment UCTH were presence of social support

Table 1. Socio-demographic characteristic of study participants (N=411).

Variable	Frequency (N=411)	Percentage
Age (years)		
<25	31	7.5
25-34	171	41.6
35-44	136	33.1
45-54	53	12.9
>55	20	4.9
Mean ±SD	35.7 ±9.3	
Sex		
Male	129	31.4
Female	282	68.6
Marital Status		
Single	126	30.7
Married	213	51.8
Divorced/separated	36	8.8
Widowed	36	8.8
Level of education		
None	19	4.6
Primary	66	16.1
Secondary	163	39.7
Tertiary	163	39.7
Children number		
None	117	28.5
1-3	204	49.6
4-6	73	17.8
>6	17	4.1
Spousal status		
Positive	85	20.6
Negative	326	79.4
Residence		
Within the State	353	85.9
Outside the state	58	14.1
Monthly allowances		
<N20,000	277	67.4
≥N 20,000	134	32.6

and having a HIV infected spouse. Participants who enjoyed some form of social support were more likely to divulge their HIV status to someone compared to those not enjoying any form of support. Similarly, having a HIV infected spouse further encouraged disclosure of one's status (Table 6).

DISCUSSION

HIV/AIDS prevention and control is reliant on effective strategies for the prevention of new infections and management of currently infected individuals (Detels et al., 2019). HIV status disclosure has been identified as an

Table 2. Medical characteristics, and support received by Respondents (N= 411).

Variable	Frequency (N=411)	Percentage
Time since diagnosis (months)		
<12	102	24.8
12-24	111	27.0
>24	198	48.2
Median (range)	24±189	
Perceived health status		
Improving	386	93.9
Not improving	25	6.1
Receiving any form of support		
Yes	274	66.7
No	137	33.3
Living arrangement		
Alone	68	16.5
With others	343	83.5
Belongs to a HIV support group		
Yes	61	14.8
No	350	85.2
Adherence levels		
<95%	165	40.1
≥95%	246	59.9
Perceived stigma		
Present	116	28.2
Absent	295	71.8
Feel depressed		
Yes	82	20
No	329	80

important strategy that fulfills these dual goals.

The HIV disclosure rate in this study was quite high with more than four-fifth (92.2%) of PLHIV indicating that they had disclosed their HIV serostatus. This is comparable with earlier reports in Africa were over 90% of PLHIV had disclosed their HIV status (Deribe et al ., 2018; Ezegwui et al., 2009) , but higher than reports from Ethiopia were only 60.5 and 82.5% disclosed their HIV status to their sexual partners (Odiachi et al., 2018; Dessalegn et al., 2019). Similarly, earlier studies conducted in Nigeria reported lower disclosure rates ranging from 39.5 - 55.9% (Ahmed-Mohammed et al., 2019). These extremely low disclosure rates could have serious implications with an increased risk of transmission during sexual encounters where condoms are not used and could reduce the benefits of disclosing ones serostatus, making safer sex negotiation difficult and possibly putting the partner at risk of infection or re-infection (Dessalegn et al., 2019) .

The HIV disclosure reported in this study definitely has positive implications for prevention of HIV/AIDS transmission from PLHIV to their sexual partners and from pregnant women unto their unborn children. This could be linked to the presence of regular counselling sessions carried out in the ART clinic which strongly encourages PLHIV to disclose their status to at least someone or a treatment supporter. The HIV clinic also encourages PLHIV to bring along a treatment partner when accessing care. This may explain the high disclosure rate reported in this study.

Table 3. Reasons for Non- Disclosure of HIV Status / To Whom was HIV status disclosed.

Variable	Frequency	Percentage
Disclosed HIV status		
Yes	379	92.2
No	32	7.8
To whom was HIV status disclosed		
Immediate family members	133	32.4
Spouse / Partner	110	26.8
Other relatives	58	14.1
Friends	21	5.1
Others *	57	13.8
None	32	7.8
Reasons for non-disclosure (N= 32)		
Fear of abandonment	18	56.3
Violence	7	21.9
Fear of accusation of Infidelity	5	15.6
Fear of breach of confidentiality	2	6.2

*Others include - Religious leaders, colleagues.

While some studies report either positive or negative outcomes following disclosure, others report a combination of both positive and negative reactions to disclosure. Negative consequences have been found to be directed more towards women compared to their male counterparts, who face more stigmatizing attitudes as well as partner violence (Maeri,et al., 2016; Gari et al., 2010; Iliyasu et al., 2011) in response to disclosure of their HIV positivity. Some reasons identified for non-disclosure in previous reports include fear of the aftermath following disclosure such as violence, separation, support withdrawal, stigmatization and undesirable emotional reactions (Maeri, et al., 2016; Odiachi et al., 2018; Titilope et al., 2011). The reasons identified for non-disclosure in this study were all centered around perceived fear of a negative outcome. This is not surprising owing to the predominantly high female population studied who could potentially be at risk of negative outcomes. The fear of abandonment /stigma and physical violence identified in this study is consistently mentioned as affecting disclosure behaviour in previous studies. (Odiachi et al., 2018; Dessalegn et al., 2019; Salami et al., 2011).

Among the respondents who disclosed their HIV serostatus, more of the respondents admitted disclosing their statuses to close family members (immediate family members – father, mother or siblings) followed by their spouses. This finding was consistent with a study conducted by Akani and colleagues in Southern Nigeria (Akani and Erhabor, 2006), but contrasted with other studies were spouses or sexual partners were preferred choices for disclosure (Amoran, 2012; Adefemi et al., 2018). The reason could be linked to the fact that almost half of the respondents were currently unmarried and majority had uninfected partners so were more comfortable disclosing their HIV serostatus to members of their immediate family because they perceived that they were more likely to receive social support from close family members. Alternatively, the fear of a negative consequence among married respondents could have informed their preferred choice of disclosure. The implication of this is that the risk of HIV transmission may increase among married people if their partners are oblivious of their HIV status and they continue to participate in unprotected sex. This highlights the pivotal role of counselling of partners to provide emotional support. Addressing non-disclosure issues among stable partners is important to ensure that new infections are kept under control (Vu et al., 2012, Shacham et al., 2012).

Factors associated with HIV status disclosure

The present study revealed that disclosure of HIV serostatus was more likely when one had a HIV infected spouse. This finding was consistent with other studies (Atuyambe et al., 2014; Adefemi et al., 2018; Titilope et al., 2011). This implies that a HIV positive person feels at ease to divulge such sensitive news to their partners without fear of rejection or abandonment. Also, the presence of perceived social support was identified as influencing disclosure behaviour among respondents. This finding was consistent with other studies (Clarke,

Table 4. Distribution of socio-demographic characteristics of participants by their disclosure status.

Characteristics	Disclosure of HIV status		Chi-square	Crude OR	95% ci	p-value
	Yes N(379) Frequency (%)	No N(32) Frequency (%)				
Age (years)						
≤35	188(93.1)	14(6.9)				
>35(Ref)	191(91.4)	18(8.6)	0.41	1.37	0.67-2.81	0.53
Sex						
Male (ref)	118(91.5)	11(8.5)				
Female	261(92.6)	21(7.4)	0.14	0.86	0.40- 1.85	0.70
Marital status						
Married	204(95.8)	9(4.2)				
Not married (Ref)	175(88.4)	23(11.6)	7.81	**2.98**	**1.34-6.61**	**0.005**
Level of Education						
< Secondary (Ref)	75(88.2)	10(11.8)				
≥Secondary	304(93.3)	22(6.7)	2.36	1.84	0.84-4.06	0.12
Average monthly Allowance						
<20,000 (Ref)	254(91.7)	23(8.3)				
≥ 20,000	125(93.3)	9(6.7)	0.32	1.26	0.57-2.80	0.57
Children Number						
≤ 5	349(91.6)	32(8.4)				
>5(Ref)	30(100.0)	0(0.0)		0.92	0.89- 0.94	0.15
Spousal status						
Infected	83(97.6)	2(2.4)				
Uninfected (Ref)	296(90.8)	30(9.2)		**4.21**	**1.99-18.0**	**0.036**
Living arrangement						
Alone (Ref)	57(83.8)	11(16.2)				
With others	322(93.9)	21(6.1)	7.99	**2.96**	**1.35-6.47**	**0.005**
Residence						
Within Cross river	55(94.8)	3(5.2)				
Outside Cross river (Ref)	324(91.8)	29(8.2)		1.64	0.48-5.57	0.42

Ref- Reference category.

2010; Akani and Erhabor, 2006; Shushtari et al., 2014) and further buttresses the fact that social support is a vital resource for coping effectively with HIV/AIDS. Poor or inadequate social support has been linked to depression as demonstrated in a study conducted in Vietnam were respondents with better social support had lower rates of depression (Shoko et al., 2017).

Certain limitations of this study should be recognized. A causal relationship could not be established among variables because of the cross-sectional nature of the survey so did not allow for drawing of inferences. The study relied on self-report which is therefore subject to recall bias.

Conclusion

A high rate of serostatus disclosure was observed in this

Table 5. Distribution of Medical characteristics including support of participants by their disclosure status.

Characteristics	Disclosure of HIV status		Chi-square	Crude OR	95% ci	p-value
	Yes N(379) Frequency (%)	No N(32) Frequency (%)				
Belongs to a HIV support group						
Yes (Ref)	53(86.9)	8(13.1)				
No	326(93.1)	24(6.9)	2.83	0.49	0.21-1.14	0.09
Perceived social support						
Present	269(98.2)	5(1.8)				
Absent (Ref)	110(80.3)	27(19.7)	40.6	**13.2**	**4.96 -35.2**	**<0.0001**
Feels depressed						
Yes (Ref)	71(86.6)	11(13.4)				
No	308(93.6)	21(6.4)	4.52	**0.44**	**0.20-0.95**	**0.03**
Perceived stigma						
Yes (Ref)	105(90.5)	11(9.5)				
No	274(92.9)	21(7.1)	0.65	1.37	0.64-2.93	0.42
Perceived health status						
Good	355(92.4)	29(38.9)				
Poor (Ref)	24(88.9)	3(11.1)		1.53	0.44-5.39	0.51
Adherence to HAART						
>95%	230(93.5)	16(6.5)				
<95% (Ref)	149(90.3)	16(9.7)	1.40	0.65	0.31-1.34	0.24
When diagnosed (months)						
<24(Ref)	164(91.6)	15(8.4)				
>24	215(92.7)	17(7.3)	0.16	1.33	0.65-2.91	0.69

*Ref- Reference category.

Table 6. Binary logistic regression analysis of predictors for disclosing ones HIV status.

Independent Variable	Odds ratio	95% confidence interval	p- value
Belongs to a HIV group			
Yes	0.44	0.15- 1.26	0.13
No	1		
Marital status			
Married	1.81	0.63- 5.15	0.27
Not married	1		
Felt depressed			
No	0.79	0.29-2.12	0.64
Yes	1		
Perceived social support			
Present	12.3	4.22-12.5	**<0.0001**

Table 6. Contd.

Absent	1		
Spousal HIV status			
Infected	2.57	1.90-5.03	**0.03**
Uninfected	1		
Living arrangement			
With others	1.19	0.73-0.98	0.12
Alone	1		
Educational attainment			
>Primary	2.0	0.74-4.94	0.08
≤ Primary	1		

study among PLHIV receiving treatment in an urban treatment site. The main reasons for non-disclosure cited by respondents included fear of abandonment, violence and accusation of infidelity. Respondents who had a HIV infected spouse/partner and enjoyed some form of social support were significantly more likely to disclose their HIV status to someone. This study has further demonstrated the need for social support as an invaluable tool for coping with HIV/AIDS and must be encouraged for better treatment outcomes and improve the wellbeing of PLHIV. The findings from this study are crucial and could guide the designing of disclosure enhancing strategies for PLHIV in urban settings in Nigeria. We also recommend the intensification of interventional measures that involve the healthcare provider, patients and community particularly in the area of anti-stigma campaign, partner notification and skill-building to facilitate appropriate HIV serostatus disclosure.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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