



Original Article

Determinants of Human Immunodeficiency Virus Seropositive Status Disclosure in Kenya

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The purpose of the study was to determine whether socio-demographic characteristics of People Living with HIV and AIDS (PLWHA) predicted self-disclosure of HIV seropositivity status in Kenya. A survey was conducted among a random sample of 232 respondents in Nairobi County. Data was gathered through interviews and focus group discussions. The findings indicated that 28.0% of the respondents were male and 72.0% were female. The respondents were aware of their HIV seropositive status for at least one year prior to the study. About half of the respondents (50.9%) had disclosed their HIV seropositive status, while 49.1% had not disclosed. The binary logistic regression established that the socio-demographic predictors of HIV seropositive status disclosure were educational attainment (AOR = 1.266; $p = 0.001$), regular employment status (AOR = 1.691; $p = 0.001$) perceptions of financial security (AOR = 2.440; $p = 0.020$) and knowledge of management of HIV (AOR = 3.505; $p = 0.001$). However, respondents' sex ($p = 0.162$), age ($p = 0.921$) and marital status ($p = 0.621$) were not statistically significant predictors of HIV seropositivity disclosure to sexual partners. This implies that public health programmes should focus on educational interventions, financial security, and training on the management protocols for People Living with HIV and AIDS in order to promote HIV seropositivity status disclosure to sexual partners.

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INTRODUCTION

HIV serostatus disclosure is a dilemma among people living with HIV and AIDS. Disclosure may promote one's health, social support, and psychological wellbeing and on the other hand, it may lead to negative consequences by family, social networks, and community (Didi, 2014; Ngige & Ndayala, 2020; Stutterheim *et al.*, 2011). Self-disclosure is a logical process whereby the advantages and disadvantages of confidentiality and disclosure to one-self and significant others are considered (Bouillon *et al.*, 2007). Research shows that HIV seropositive status disclosure to sexual partners is a public health concern because it protects the sexual partners from HIV infection (Ndayala *et al.*, 2021; Jin *et al.*, 2009; Van Griensven, 2009). Voluntary Counselling and Testing (VCT) services place emphasis on HIV status disclosure among PLWHA, particularly to their sexual partners (Centres for Disease Control, 2009). However, individuals diagnosed with HIV find it extremely challenging disclosing their seropositivity status to anyone, thereby putting others at risk of infection (Birungi *et al.*, 2008; NASCOP, 2013; Sarna *et al.*, 2009). Disclosure of HIV seropositive status has multiple health benefits to PLWHA. For example, it promotes self-efficacy in preventive behaviour, safer sexual practices, access to social support groups, and decreases transmission of HIV infection (Ndayala *et al.*, 2021; Deribe *et al.*, 2010).

There is no consensus among researchers on the rates of HIV seropositive status disclosure in Kenya. Some research reports indicate that there are low rates in some studies and high rates in other studies on HIV serostatus disclosure. Research conducted in Mombasa County among PLWHA, revealed that about one-third of the respondents had disclosed their HIV serostatus to their sexual partners, while

two-thirds had not disclosed (Sarna *et al.*, 2009). This finding is similar to results of a national study by National AIDS and STI Control Programme (NASCOP, 2013) which showed that one-third of PLWHA had disclosed their HIV status to their sexual partners. However, more than two-thirds of HIV-discordant couples were unaware of their HIV-discordant couple status. This finding concurs with a study in Western Kenya which reported that among married couples, only one-third of females and about half of the males had disclosed their HIV serostatus to their spouses. More males reported that they knew their spouses were HIV seropositive than their female counterparts (Shacham *et al.*, 2008).

In contrast, other research findings have established high rates of HIV seropositive status disclosure rates to sexual partners among PLWHA. In Kisii referral hospital, two-thirds of the respondents had disclosed their HIV seropositive status to their sexual partners (Othero & Ngigi, 2011). A similar study carried out among pregnant women in rural Kenya found high rates of HIV seropositive status disclosure to sexual partners (Walcott *et al.*, 2013). Research has established that disclosure of an HIV negative diagnosis is more likely than for HIV seropositive status (Ndayala *et al.* 2021). A study carried out among VCT clients reported that 93% of the respondents had planned to disclose their serostatus if HIV positive. However, on a follow-up study revealed that 55% of HIV positives and 85% of HIV negatives had disclosed their serostatus. Respondents who had not disclosed their seropositive status revealed that they had no intention of ever disclosing to anyone.

Various studies have been conducted to establish whether demographic characteristics influence HIV serostatus disclosure. Results have demonstrated that regular sexual partners are more likely to disclose their HIV serostatus than casual partners

(Ndayala et al. 2021). Similarly, HIV concordant couples are more likely to disclose to their HIV seropositive sexual partners than to partners who are HIV negative or of unknown serostatus (Vu *et al.*, 2012; Niccolai et al., 2006). Research has also associated HIV disclosure with safer sex practices among expectant mothers. A study carried out in Uganda showed that HIV disclosure promotes adherence to the Prevention of Mother-to-Child Transmission (PMTCT) (Rujumba *et al.*, 2012; Kadowa & Nuwaha, 2009).

In terms of gender disparity, females are less likely to disclose than male counterparts. A study in Kenya showed that women were less likely to disclose their HIV serostatus to their male partners if they were cohabiting, used contraception or were in informal employment (Ngige & Ndayala, 2020; Neville & Rubin 2007). A study conducted in Botswana indicated gender differences in HIV status disclosure rates where female respondents were more likely to disclose their serostatus than males (Akinyemi et al., 2013). This finding concurs with aresearch carried out in Kenya which showed that HIV positive males are least likely to disclose to their intimate partners about their serostatus (Ndayala & Ngige, 2020; Neville & Rubin, 2007). With reference to marital status, a study conducted in Tanzania among married couples revealed that slightly more than half of HIV seropositive husbands disclosed to their wives, while only about one-third of HIV seropositive wives disclosed to their husbands (Lugalla et al., 2011).

Research conducted in South Africa showed a direct relationship between education attainment and HIV seropositive status disclosure. The findings revealed that more highly educated people were more likely to disclose their HIV seropositive status to intimate partners than their less educated counterparts. Furthermore, HIV serostatus disclosure was

positively associated with mutual knowledge of intimate partners' serostatus diagnosis (Vu *et al.*, 2012). Disclosure of HIV serostatus has also been associated with location of residence. Research conducted in Zimbabwe among women attending PMTCT clinics established that disclosure among rural mothers was twice more likely than among urban respondents (Mucheto et al., 2009). Research conducted in Uganda established an association between duration of HIV status diagnosis and disclosure. Respondents who had tested HIV positive for longer durations were more likely to disclose than the newly diagnosed respondents (Kadowa & Nuwaha, 2009). The current investigation sought to establish the relationship between socio-demographic characteristics and HIV seropositive status disclosure to sexual partners. The null hypothesis stated that there was no statistically significant relationship between respondents' socio-demographic characteristics and HIV seropositive status disclosure to sexual partners at $p \leq 0.05$.

METHODOLOGY

A survey was conducted in Nairobi, Kenya among a random sample of 232 respondents who were diagnosed as HIV seropositive for at least one year prior to the study. Data was gathered through in-depth interviews. The independent variables were socio-demographic variables such as sex, age, marital status, education level, employment status, perceptions of financial security and knowledge of management of HIV and AIDS. The dependent variable was respondents' self-disclosure of HIV seropositive status to sexual partners.

RESEARCH FINDINGS AND DISCUSSION

The demographic variables are presented in *Table 1*.

Table 1: Distribution of Socio-Demographic Characteristics

Variable (N = 232)		f	%
Sex of respondents	Female	167	72.0
	Male	65	28.0
Age group	15-19	13	5.6
	20-29	53	22.8
	30-39	93	40.1
	40-49	51	22.4
	50+	21	9.1
Marital status	Never Married	31	13.4
	Married	64	27.6
	Separated/Divorced	71	30.6
	Widowed	66	28.4
Education attainment	Completed Primary	162	69.8
	Completed Secondary	54	23.3
	Completed Tertiary (College/University)	16	6.9
Employment status	Full-time employment	47	20.2
	Part-time employment	29	12.5
	Self-employment	122	52.6
	Unemployed	34	14.7
Perception of Financial security	Financially secure	67	28.9
	Financially insecure	165	71.1

Results shown on *Table 1* revealed that the majority of respondents were females accounting for 72.0%, while males constituted 28.0%. Over 90% of the female respondents were in the child bearing age between 15-49 years. About one-quarter were married, while the remainder were single, separated, divorced, or widowed. About 70% had attained primary level of education, 27.6% secondary education and 6.9% had attained tertiary level of education. In terms of employment status, 52.6% were self-employed in micro and small enterprises

(MSEs), 20.3% were in full-time formal employment and 14.7% were unemployed. Majority of the respondents perceived their financial status to be insecure (71.1%), while 28.9% reported that they were financially secure.

Respondents' Knowledge of HIV and AIDS

The results of the respondents' knowledge of HIV and AIDS are presented in *Table 2*.

Table 2: Distribution of Knowledge of HIV and AIDS

Variable (N = 232)	Agreed		Disagreed	
	f	%	f	%
HIV is a chronic medical condition	144	62.0	88	38.0
HIV can be managed with ARVs and nutrition	103	44.4	129	55.6
HIV-related opportunistic diseases such as TB may cause death if not treated	181	78.0	51	22.0
HIV is a sexually transmitted infection	79	34.0	153	66.0

*Multiple responses included

The findings revealed that about two-thirds of respondents acknowledged that HIV and AIDS was a chronic medical condition while 38% did not. Less than half (44.4%) knew that HIV could be managed with ARVs and nutrition, while 55.6% disagreed

with the statement. This implies that majority of the respondents were not knowledgeable about the management of HIV infection. Over two-thirds (78%) of the respondents did not know that HIV-related opportunistic diseases such as tuberculosis

may lead to death if not treated. Results indicated that 34% of the respondents believed that HIV was a sexually transmitted infection, while 66% did not know. These findings imply that most of the respondents were not knowledgeable about HIV infection which may have had an effect on their decision to disclose or withhold their HIV seropositive status to sexual partners.

Perceived Benefits of Knowing one’s HIV Serostatus

Results of the benefits of knowing one’s HIV serostatus are presented in *Table 3*.

Table 3: Benefits of knowing one’s HIV seropositive status

Variable (N = 232) *	Frequency	Percentage (%)
Prevent HIV re-infection	172	74.5
Prevent Mother-To- Child Transmission (PMTCT)	16	6.9
Plan for the future	38	16.5
Live positively with HIV	146	63.2
To access Antiretroviral therapy (ARVs) (medication)	133	57.6
Adopt safer sex practices	46	19.9

* *Multiple responses included*

Majority of the respondents reported that the benefits of HIV-testing and knowing one’s seropositive status was to prevent re-infection (74.5%), to live positively with HIV infection (63.2%), and to access antiretroviral medication (57.6%). Less than one-fifth stated that it would help them to adopt safer sex practices (19.9%), plan for the future (16.5%) and to prevent mother-to-child transmission of HIV (6.9%). These results imply

that the majority of respondents knew the health benefits of diagnosis of HIV seropositive status.

Sexual Partners’ HIV Serostatus and Respondents’ Self-Disclosure

The results of sexual partners’ HIV serostatus and respondents’ self-disclosure are presented in *Table 4*.

Table 4: Distribution of Sexual partners’ HIV serostatus

Variable (N = 232)	Frequency	Per cent
HIV seropositive sexual partner	86	37.1
HIV seronegative sexual partner	20	8.6
Sexual partner of unknown HIV serostatus	126	54.3
Total	232	100.0
Respondents’ Self-Disclosure of HIV Seropositive status to sexual partners		
Disclosure of HIV Seropositive Status	118	50.9
Non-Disclosure of HIV Seropositive Status	114	49.1
Total	232	100.0

Results indicated that 37.1% of the respondents knew their sexual partners were HIV seropositive, 8.6% were HIV seronegative and 54.3% of sexual partners’ HIV serostatus were unknown. This implies that more than half of the respondents who were sexually active engaged in sexual activities with partners who were either HIV seronegative or of unknown serostatus, thereby putting them at risk of HIV infection. About half of the respondents (50.9%) had disclosed their HIV seropositive status

to their sexual partners, while 49.1% had not disclosed. This implies that half of the respondents were likely to transmit HIV to their sexual partners if they did not adopt safer sexual practices.

HYPOTHESIS TEST RESULTS

The null hypothesis stated that there was no statistically significant relationship between respondents’ socio-demographic characteristics and

HIV seropositive status disclosure to sexual partners at $p \leq 0.05$. Results are presented in *Table 5*.

Table 5: Relationship between sex and HIV seropositive status disclosure

Variable (N = 232)	Disclosure	Non- disclosure	Total
Male	29 (43.1%)	36 (53.6%)	65 (100.0%)
Female	89 (53.3%)	78 (46.7%)	167 (100.0%)
Total	118 (50.9%)	114 (49.1%)	232 (100.0%)

$$\chi^2 = 1.954, df=1, p = 0.162$$

The Chi-square results ($\chi^2 = 1.954, df = 1, p = 0.162$) revealed that sex was not significantly related to HIV seropositive status disclosure at $p \leq 0.05$. Therefore, the hypothesis was retained and conclusion drawn that the relationship between sex and HIV seropositive status disclosure was insignificant. These results concur with a study by Arthur *et al.*, (2007); Bouillon *et al.*, (2007) and Serovich *et al.*, (2007) who did not find any significant relationship between HIV serostatus

disclosure by gender. However, this research finding is inconsistent with a study which reported rates of disclosure varied by sex Bouillon *et al.*, (2007); Ngula and Miller (2010), and Olademeji *et al.* (2013).

Relationship between Marital Status of PLWHA and HIV Seropositive Status Disclosure

The results are presented in *Table 6*.

Table 6: Relationship between marital status and HIV seropositive status disclosure

Variable (N=232)	Disclosure	Non-Disclosure	Total
Married	34 (53.1%)	30 (46.9%)	64 (100.0%)
Single	13 (41.9%)	18 (58.1%)	31 (100.0%)
Widowed	37 (56.1%)	29 (43.9%)	66 (100.0%)
Divorced/Separated	34 (47.9%)	37 (52.1%)	71 (100.0%)
Total	118 (50.9%)	114 (49.1%)	232 (100.0%)

$$\chi^2 = 2.631; df = 4; p = 0.621$$

Results showed that married (53.1%) and widowed (56.1%) respondents were more likely to disclose their HIV seropositive status than single (41.9%), separated and divorced (47.9%) respondents. However, the Chi-square results ($\chi^2 = 2.631; df = 4; p = 0.621$) established that HIV seropositive status disclosure by marital status was not statistically significant at $p \leq 0.05$. Therefore, the hypothesis was retained and it was concluded that there was no significant relationship between marital status and HIV seropositive status disclosure to

sexual partners. This finding contradicts a study conducted in Ethiopia by Deribe *et al.*, (2008) which found that disclosure was positively associated with marital status and co-residence of sexual partners.

Relationship between Education Attainment and HIV Seropositive Status Disclosure

Results for education attainment and HIV seropositive status disclosure are presented in *Table 7*.

Table 7: Education attainment and HIV seropositive status disclosure

Variable (N=232)	Disclosure	Non- disclosure	Total
Primary education	78(51.9%)	84(48.1%)	162(100.0%)
Secondary education	31(57.4%)	23(42.6%)	54(100.0%)
Tertiary education	9(56.3)	7(43.7)	16(100.0%)
Total	118(50.9%)	114(49.1%)	232(100.0%)

$\chi^2 = 0.529$; $df = 2$; $p = 0.001$ * *Significant at $p < 0.05$

The Chi-square results, ($\chi^2 = 0.529$, $df = 2$, $p = 0.001$) indicate that there was a significant relationship between the education attainment of the respondents and HIV seropositive status disclosure. Therefore, the hypothesis was rejected and conclusion drawn that the relationship between education attainment and HIV seropositive status disclosure was statistically significant at $p \leq 0.05$. This finding concurs with other studies which found that more educated respondents were highly likely

to disclose their HIV seropositive status than the less educated counterparts (Vu *et al*, 2012; Bouillon *et al.*, 2007).

Relationship between Employment Status and HIV Seropositive Status Disclosure

The results of the relationship between the employment status and HIV seropositive status disclosure are presented in *Table 8*.

Table 8: Relationship between employment status and HIV seropositive status disclosure

Variable (N=232)	Disclosure	Non-Disclosure	Total
Self-employment	70 (57.4%)	52 (42.6%)	122 (100.0%)
Full-time employment	28 (59.6%)	19 (40.4%)	47 (100.0%)
Part-time employment	16 (47.1%)	18 (52.9%)	34 (100.0%)
Unemployed	5 (17.4%)	24 (82.6%)	29 (100.0%)
Total	118 (50.9%)	114 (49.1%)	232 (100.0)

$\chi^2 = 23.734$; $df = 4$; $p = 0.001$ * *Significant at $p < 0.05$

The research findings established that respondents who were self-employed (57.4%) and in full-time employment (59.6%) were highly likely to disclose their HIV seropositive status than those who were unemployed (17.4%). The Chi-Square test results ($\chi^2 = 23.734$; $df = 4$; $p = < 0.001$) revealed that there was a statistically significant relationship between employment status and HIV seropositive status disclosure at $p \leq 0.05$. Therefore, the hypothesis was rejected and it was concluded that employment status was significantly related to HIV seropositive status disclosure. This finding concurred with a study by Simbayi *et al.*, (2006), conducted in South Africa which reported that respondents who were

job secure were highly likely to disclose their HIV serostatus compared to those who were job insecure. This finding also coincides with other studies which show that respondents who are economically secure promote HIV seropositive status disclosure compared to their fewer disadvantaged counterparts (Serovich *et al.*, 2008).

Relationship between Respondents' Financial Security and HIV Seropositive Status Disclosure

The results of respondents' perceptions of financial security and HIV seropositive status disclosure are summarized in *Table 9*.

Table 9: Respondents’ perceptions of financial security and HIV seropositive status disclosure

Variable (N=232)	Disclosure	Non- disclosure	Total
Financial security	91(55.0%)	84(44.0%)	175(100.0%)
Financial insecurity	27(47.4%)	30(52.6%)	57(100.0%)
Total	118(50.9%)	114(49.1%)	232(100.0%)

$\chi^2 = 9.101$; $df = 1$; $p = 0.003$ *

*Significant at $p < 0.0$

The research findings established that respondents with perceptions of financial security (55.0%) were highly likely to disclose their HIV seropositive status than those who did not (47.4%). Chi-Square test results ($\chi^2 = 9.101$; $df = 1$; $p = 0.003$) revealed that there was a statistically significant relationship between perceptions of financial security and HIV seropositive status disclosure at $p \leq 0.05$. Therefore, the hypothesis was rejected and it was concluded that perceptions of financial security was significantly related to HIV seropositive status

disclosure. This finding is consistent with Makin *et al.* (2007), who reported that there was a direct relationship between financial independence and HIV serostatus disclosure.

Relationship between Knowledge of Management of HIV Condition

The results of the respondents’ knowledge of management of HIV condition and HIV seropositive status disclosure are presented in *Table 10*.

Table 10: Knowledge of management of HIV and AIDS condition

Variable (N=232)	Disclosure	Non-Disclosure	Total
HIV can be managed with ARVs and good nutrition	82(63.6%)	47(36.4%)	129(100.0%)
HIV cannot be managed with ARVs and good nutrition	36(32.0%)	67(60.0%)	103(100.0%)
Total	118(50.9%)	114(49.1%)	232(100.0%)

$\chi^2 = 22.772$; $df = 1$; $p = 0.001$ *

* Significant at $p < 0.05$

The results established that respondents who were aware that HIV can be managed with antiretroviral therapy and good nutrition were more likely to disclose their HIV seropositive status than their counterparts who did not have the knowledge on management of HIV condition. This implies that respondents who were more knowledgeable about management of HIV condition with ARVS and consumption of the recommended diet were more likely to share their HIV serostatus with their sexual partners. The Chi-square results ($\chi^2 = 22.772$; $df = 1$; $p = 0.020$) indicated that knowledge of management of HIV condition was significantly related to HIV seropositive status disclosure at $p \leq 0.05$. Therefore, the hypothesis was rejected and conclusion made that there was a significant relationship between knowledge of HIV management and HIV seropositive status disclosure to sexual partners. These findings are consistent with research findings by Ndayala (2014).

Predictors of HIV Seropositive Status Disclosure

The null hypothesis stated that socio-demographic characteristics of PLWHA do not predict self-disclosure of HIV seropositive status to sexual partners at $p \leq 0.05$. The binary logistic regression results are presented in the *Table 11*.

Table 11: Predictors of HIV seropositive status disclosure

Variable (N=232)	AOR	p	CI (95%)
Educational attainment	1.266	0.001*	1.152-4.185
Regular Employment status	1.691	0.001*	1.252-2.284
Perceptions of financial security	2.440	0.020*	1.152-5.185
Knowledge of management of HIV with ARV and good nutrition	3.505	0.001*	1.892-6.493

*Significant predictors at $p < 0.05$

The binary logistic regression established that the socio-demographic predictors of HIV seropositive status disclosure were educational attainment (AOR = 1.266; $p = 0.001$), regular employment status (AOR = 1.691; $p = 0.001$) perceptions of financial security (AOR = 2.440; $p = 0.020$) and knowledge of management of HIV with antiretroviral therapy (AOR = 3.505; $p = 0.001$). These results imply that respondents who knew that that HIV can be managed with ARV and good nutrition were three and a half times (AOR = 3.505; $p = 0.001$) more likely to disclose their HIV seropositive status than those who did not. Similarly, respondents with perceptions of financial security were twice more likely to disclose their HIV seropositive status (AOR = 2.440; $p = 0.020$) than their less economically secure counterparts. These findings are consistent with other studies by (Ndayala et al., 2015; Stutterheim et al., 2011; Neville et al., 2007)

CONCLUSION AND RECOMMENDATIONS

This study has established a significant relationship between disclosure of HIV seropositivity status and respondents' educational attainment, employment status, perceptions of financial security and knowledge of management of HIV. The research findings established that more highly educated respondents, who had regular and full-time employment and experienced financial security were highly likely to disclose their HIV seropositive status compared to those who were less educated, unemployed, and deprived of economic security. It was recommended that public health programmes should focus on education intervention, financial security and creating awareness of the management of HIV and AIDS in order to promote HIV seropositivity status disclosure to sexual partners.

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