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**The Impact of Stigma and Discrimination on Adherence to Medication amongst People Living with HIV in Tiv Land, North Central Nigeria**

**Abstract**

In spite the identification of stigma as a factor impeding public utilisation of HIV counselling, testing, and treatment services in Nigeria, gaps still exist in knowledge on the impact of stigma, and discrimination on adherence to medication amongst people living with HIV (PLWH). This study adopted mixed methods to examine the impact of stigma and discrimination on adherence to medication amongst PLWH in Nigeria. A sample of 1,621 respondents was collected using multi-stage and purposive sampling methods. Structured interviews using questionnaires and in-depth interviews (using a guide) were utilised for data collection. SPSS (version 21) was used for quantitative data analysis while the qualitative data was analysed thematically. There are 46.3% men and 53.7% women. Generally, their income is low, 70.7% are earning less than N25, 000 (approximately \$125 USD) per month. Some of the HIV patients are stigmatised. In reaction, they avoid public places, travel long distances away from their immediate community to collect drugs, to avoid been noticed around the centers. They sometimes miss taking drugs regularly as prescribed, suffer depression and die. Stigma and discrimination impede adherence to medication amongst PLHW in Nigeria. More efforts should be made to create awareness to reduce stigma and discrimination of HIV patients, while augmenting their income to meet up with the

24 challenges of adherence to medication. The overall benefits would be enhanced mechanism of  
25 HIV prevention, treatment and control in the study area.

26

27 **Keywords:** Stigma; Discrimination; HIV; Adherence to Medication; Nigeria

28

## 29 **1.0 Introduction**

30 The view that HIV is ‘incurable and fatal, contagious, a threat to life of others, physically  
31 degenerative and disfiguring, and associated with a painful or anaesthetic death’ [1] has  
32 elicited stigmatisation and discrimination of people living with HIV in Tiv land, North central  
33 Nigeria. Stigma is defined as ‘an attribute that is deeply discrediting’; it is socially  
34 constructed through a process that involves stereotyping and labelling which culminates in  
35 distinguishing between ‘them and us’ [2]. Within the context of HIV infection and its  
36 attendant medical conditions amongst the Tiv people, there are socio- medical constructions  
37 of *nguedanzaria man nguedanzaria ga* (those living with HIV and those not living with  
38 HIV). HIV possesses all the characteristics of stigmatised medical conditions [3].

39 Stigma had been and will continue to be one of the factors influencing prevention and  
40 treatment of some diseases in the health sector, if adequate measures are not taken to address  
41 it. For example, diseases such as leprosy, mental illness and urinary incontinence are not free  
42 from stigma [4]. Stigma is also associated with HIV and in Sub-Saharan Africa, it has been  
43 reported that people living with HIV are stigmatised [4, 5]. In Nigeria, 3.2 million people are  
44 living with HIV and the incidence rate of HIV infection in 2014 was 227,518 [6]. As the  
45 knowledge of familiar individuals who have tested positive, and have been placed on drugs  
46 filters down to the people in the communities, it creates fear and the tendency to avoid  
47 infection and those living with the disease in the minds of those not living with the virus. The

48 resultant effect is that those living with HIV avoid people and public places including health  
49 centers where they receive Anti-retroviral Therapy (ART). The focus of this study is on the  
50 impact of stigma on adherence to medication amongst PLWH in Tiv land, North central  
51 Nigeira. Stigma is a critical factor for the uptake of voluntary counselling services in Nigeria  
52 [7], but its impact on adherence to medication remains unclear. Information with regard to the  
53 relationship between stigma and adherence to medication would benefit the individuals, and  
54 collectively, public health with regard to HIV prevention, treatment and control.

55 In Sub-Saharan Africa, the negative implications of stigma and discrimination on HIV  
56 voluntary counselling and testing have been noted in South Africa [8] and in Nigeria [7].  
57 Russell and his colleagues [1] have reported that antiretroviral therapy has not significantly  
58 changed the structural drivers of stigmatisation in Uganda. Other studies in Nigeria, have  
59 implicated social isolation, discrimination, stigmatization, and abandonment by partner as  
60 some of the reasons why HIV/AIDS seropositive individuals fear to disclose status to  
61 partners, relations and the public [9, 10, 11]. It has been observed that even health care  
62 workers isolate HIV/AIDS patients from other ones, refuse to admit them in the hospital,  
63 wear extra clothes when examining them and charge very high fees for care [10].

64 It has been argued that uptake of ART can reduce some stigmatising characteristics  
65 especially where progression of the disease is reversed, allowing the individual to play his or  
66 her social roles [12]. Other studies have reported that ART is capable of reducing  
67 internalised and enacted stigma, as observed in Haiti [12] and South Africa, where some of  
68 the individuals who recovered due to the utilisation of ART were no longer afraid to disclose  
69 their HIV status and also campaigned for access to treatment [13]. Available information  
70 indicate that ART is capable of reducing self-stigmatisation amongst PLWH [14, 15, 16, 17,  
71 18].

72 In spite of the benefits of ART uptake, stigma still persist in sub-Saharan Africa [19,  
73 20, 21]. In some instances where ART has not changed the underlying causes of stigma such  
74 as moral discourses that pass judgement on actions perceived to be against societal norms,  
75 individuals may continue to anticipate and experience stigma from others [22, 23, 16, 17, 18].  
76 The social conditions in Tiv land, have produced a pattern of stigma that is rooted in the fear  
77 of HIV as excruciating terminal disease. Structural poverty and intake of mostly carbohydrate  
78 foods have made recovery and good physical appearance for most individuals on ART very  
79 slow. Hence, their presence in any gathering, public institutions, or even at home creates a  
80 picture of individuals in agony, thereby, enhancing both self and anticipatory stigma from  
81 others amongst PLWH. Stigma has impacted negatively on HIV prevention and treatment in  
82 Nigeria.

### 83 **1.1 Social Capacity, Motivation, Stigma and Discrimination**

84 Stigmatisation and discrimination of PLWH in Tiv land are based on the inequality that exist  
85 between those whose health, strength and good physical appearance have been degraded by  
86 HIV and those who are conceivably normal (HIV sero-negative). The notion is that those  
87 who are normal don't want to suffer untold hardship and death, consequent upon being  
88 infected with HIV which is an incurable disease. They are motivated by the desire to remain  
89 healthy through avoiding PLWH. Further, the patients are isolated at home where they sit, eat  
90 and drink water in personalised seats and plates; uncomplimentary statements are made about  
91 them.

92 Conversely, most of the PLWH lack sound education, good income and other social support  
93 that would have developed their social capacity to be resilient. This explains why some  
94 PLWH indulge in self and anticipatory stigma by avoiding public places, if possible, they  
95 travel long distances away from their immediate community to collect drugs, to avoid been  
96 noticed around the centers

97 **2.0 Methods**

98 **2.1 Quantitative Methods**

99 A sample of 1,621 (864 women; 757 men) respondents was collected from 2 clinics (Mkar;  
100 Aliade) and other 2 locations (Jyovkundan; Udei) using multi-stage and purposive sampling  
101 methods. A probability sampling without replacement (raffle draws) was used in selecting  
102 Gwer West (urban area) and Guma (rural area) from the homogeneous settlements of Ichongu  
103 block; while Gboko (urban area) and Konshisha (rural area) were selected from the Ipusu  
104 using the same method. General Hospital, Aliade was then selected from Gwer West, while  
105 NKST Hospital, Mkar was selected from Gboko to obtain samples of those living with HIV.  
106 The table of random numbers was used in selecting Udei from Guma out of several other  
107 rural settlements such as Kaseyor, Yerwata, Ukohor, Umenga, Agasha, Daudu, Uluva, Yogbo  
108 etc. Similarly, Jovkyundan was selected from Konshisha out of other rural settlements such  
109 as Tse-Agberagba, Gungul, Korinya, Agbeede, Awajir, Tsuwe, Mbaakpur, Achoho, Iber,  
110 Akputu etc.

111 An eight page questionnaire with closed and open ended questions was used for quantitative  
112 data collection amongst 805 HIV seropositive clinic attendees and 796 HIV seronegative  
113 individuals on background characteristics, motivations for sexual relationships, sero-  
114 discordant relationships, risky sexual behaviours, and HIV risk. The target groups were  
115 individuals including men and women aged between 18 and 65 years old, who were  
116 presumed to be sexually active, in relationship (partners), had tested for HIV prior to the  
117 study, and were either HIV positive or negative. The sample excluded those below the age of  
118 18years; those with AIDS and opportunistic infections, pregnant women and those who were  
119 mentally ill. .

120 At the completion of data collection, the responses were coded and entered into Statistical  
121 Product and Service Solution (SPSS) version 21 software, which has provision for the  
122 Generalised Linear Regression with Cumulative Link, was used for the analysis of  
123 quantitative data.

## 124 **2.2 Qualitative Methods**

125 In this segment of data collection, purposive sampling was used in selecting 20 respondents  
126 who participated in in-depth interviews. Five individuals were selected in each location. The  
127 interviews were conducted in Tiv language using a guide with questions on structural factors,  
128 background characteristics, knowledge and attitude towards HIV, risky sexual behaviours  
129 poverty, stigma and discrimination. An audio recorder was used for recording the discussions  
130 during the in-depth interviews for the purpose of transcription after the data collection  
131 sessions. The data were transcribed and analysed by the researcher following the principles of  
132 concurrent transformative strategy (either nested or concurrent triangulation). It ensures that  
133 better insight would be obtained from the qualitative data to provide deeper understanding of  
134 some findings from the quantitative. The findings from qualitative data provided further  
135 insight into the intricacies of sexual behaviours, HIV, stigma and discrimination.

## 136 **3.0 Results**

### 137 **3.1 Descriptive Statistics on Background Characteristics of Respondents and other** 138 **variables**

139 Table 1 shows that the sample is made up of 46.3% men and 53.7% women. Those between  
140 30 and 34 years are 23.4%, while those between the ages of 25 and 29 years are 21.9%.  
141 Approximately 55% are married, 17.9% are either divorced or separated, while the single and  
142 those cohabiting are 26.2% and 0.6% respectively. Generally, their income is low, 70.7% are  
143 earning less than N25, 000 (approximately \$125 USD) per month, and by educational

144 attainment, 7.6% have not obtained formal education, while 11.7% have completed only  
145 primary education. The percentage of completion of secondary education seems to be high  
146 (47.5%) because all respondents who have completed some form of secondary education (the  
147 junior secondary school) are in this category. The respondents who have completed some  
148 form of higher education (Diploma, Higher Diploma, First degree, Postgraduate) are 530  
149 (33.1%). One thousand five hundred and four (93.9%) of the respondents know someone  
150 living with HIV. The respondents who were seropositive were on drugs at the time of the  
151 interviews. And amongst those who were seronegative, 737 (92.6%) either agreed or strongly  
152 agreed that they would feel bad if infected with HIV (see Table 1). Thus indicating that they  
153 would do every possible to avoid being infected with HIV. The individuals known to the  
154 respondents as living with HIV/AIDS were mostly friends 563 (35.2%), husband or wife 189  
155 (11.8%), and sister 219 (13.7%, see Table 1).

156 Table 1: Selected Characteristics of Respondents, Attitude to and Knowledge of HIV Patients

Age	Frequency	Percentage
18-19yrs	163	10.2
20-24yrs	293	18.3
25-29yrs	342	21.4
30-34yrs	336	21.0
35-39yrs	120	7.5
40-44yrs	136	8.5
45-49yrs	98	6.1
50-54yrs	67	4.2
55-59yrs	35	2.2
60+	11	0.7
<b>Total</b>	<b>1601</b>	<b>100</b>
<b>Relationship Status</b>		
Married	820	51.2
Single	527	32.9
Widowed	123	7.7
Divorced	59	3.7
Separated	65	4.1
Cohabiting	7	0.4
<b>Total</b>	<b>1601</b>	<b>100</b>
<b>Education</b>		
No formal schooling	122	7.6
Primary	188	11.7
Secondary	761	47.5
Tertiary	530	33.1
<b>Total</b>	<b>1601</b>	<b>100</b>
<b>Income</b>		
Less than 25,000	1186	74.1
25,000-49,000	287	17.9
50,000-90,000	98	6.1
100,000+	30	1.9
<b>Total</b>	<b>1601</b>	<b>100</b>
<i>whether they will feel bad if infected with HIV (Seronegative only )</i>		
Strongly disagree	30	3.8
Disagree	29	3.6
Agree	307	38.6
Strongly agree	430	54.0
<b>Total</b>	<b>796</b>	<b>100</b>
<i>Knowledge of someone living with HIV Knowledge</i>		
Yes	1504	93.9
No	97	6.1
<b>Total</b>	<b>1601</b>	<b>100</b>
<i>Relationship of Respondents with someone living with HIV/AIDS</i>		
Husband/Wife	189	11.8
Brother	176	11.0
Sister	219	13.7
Friend	563	35.2
Parents	38	2.4
Children	27	1.7
Others	292	18.2
Don't know	97	6.1
<b>Total</b>	<b>1601</b>	<b>100</b>

157 *Note.* The source of data is from field survey, 2014

158 It is obvious that those who were not HIV positive would do every possible to avoid been  
159 infected with HIV including stigmatising and discriminating against PLWH.

160

### 161 **3.2 Qualitative Findings on HIV Variables (Stigma, Discrimination, Non-disclosure of** 162 **Status and Non Adherence to Medication by those on Antiretroviral Drugs)**

163 The epidemic in the study area is a generalised type with sexual intercourse contributing  
164 more than 80% of the cases of HIV infection [6]. There is general awareness about the  
165 sources of spread of the disease in the study areas. However, there is common knowledge that  
166 sexual intercourse constitutes a major source of infection, therefore HIV positive status is  
167 considered as a product of infidelity and such individuals are seriously stigmatised. Hence  
168 most men who are sero-negative status find it difficult to accept women who are HIV  
169 positive. This issue is captured in the statement below:

170 *You see HIV is contracted through sex, so for women who have HIV and their partner don't*  
171 *have it; it will take the grace of God for the man not to divorce the woman, because it is seen*  
172 *as a product of infidelity* (Female; 30 years, Married).

173 Further, those who are HIV positive are discriminated upon by relations, friends, and  
174 neighbours. They avoid them in a surreptitious manner believing that they may want to  
175 deliberately infect them. The acts of discrimination against seropositive individuals are  
176 captured in the following statement:

177 *We avoid people with HIV, we don't want to talk to them, or eat with them or wash their*  
178 *clothes or sleep with them because we will be infected; but we do this secretly. If they know*  
179 *that you are avoiding them, they will not be happy. Some people are wicked; they will want to*  
180 *infect others, so we are afraid because we don't know the intention of the person* (Female; 23  
181 years; single).

182 There are those who don't want to mingle with HIV positive individuals. They avoid drinking  
183 water in the same cup or sleep in the same bed with them; just on very rare occasions, they  
184 might eat with them:

185 *I don't want to be with those infected, but I go for tests very often so that if I am infected, I*  
186 *will know. I will not sleep in the same bed with an infected person. I will not drink water in*  
187 *the same cup with the person, not even my husband, but I can eat with the person, if the*  
188 *person is my relation* (Female; 22 years; married).

189 Corroborating what others have said, another respondent points out that the treatment melted on  
190 PLWH could be likened to one which slaves were subjected to during the slave era. She says  
191 *Neighbours discriminate against HIV patients, if you drink water in a cup, they will not use*  
192 *it; they will not eat with you. If you use a sponge for bath, they will not use it. When you are*  
193 *with them, they see you as a different person just like they used to see slaves in the ancient*  
194 *times* (Female; 30 years, Married).

195 Consequent upon stigma and discrimination of PLWH, HIV positive individuals are afraid to  
196 disclose their status; they avoid public places and drug collection centres, in order not to be  
197 seen by relations, friends or neighbours collecting antiretroviral drugs. A female respondent  
198 captures the issue in the statement below:

199 *This has made many of the HIV patients to hide their status and avoid centres where they are*  
200 *given drugs, so that they will not be seen collecting drugs* (Female; 21 years; single).

201 In another example, a female respondent points out that those infected with HIV suffer  
202 discrimination as if they are cursed, as a result, they refuse to disclose their status, avoid  
203 taking drugs and prefer death to life.

204 *I feel those people should be kind to those infected with HIV. It is like a curse. Some people*  
205 *have died because of this. People are afraid to disclose their status because so and so person*

206 *will see them taking drugs, so they have refused to take drugs and they have died* (Female;  
207 24years; Separated)

208 Furthermore, apart from hiding their HIV status. PLWH avoid drug collection centers so that  
209 they may not be seen collecting drugs. These acts are captured in the following words:

210 *Sometimes when they are passing, people discuss them and point fingers at them, and avoid*  
211 *sitting where they have sat. They refuse to eat from the plates used by them. This has made*  
212 *many of the HIV patients hide their status and avoid centres where they are given drugs, so*  
213 *that they will not be seen collecting drugs* (Female; 21 years; single).

214

215 Some HIV positive individuals who don't want to be seen collecting drugs travel to far  
216 collection centers to do so.

217 *Some years ago, there were no drugs for HIV and so people who got the disease were highly*  
218 *discriminated. But now it is better. However, people are still going to distant centres to*  
219 *collect drugs, so that they will not be seen by their neighbours* (Male; 35 years; married).

220 As a result of stigmatisation, some individuals living with HIV suffer depression, they isolate  
221 themselves and die.

222 *The people that I know who have HIV have their cups for drinking water; some people don't like*  
223 *eating with them, though other people shake hands with them; some of them who have HIV don't like*  
224 *to go to where there are people and even to attend church service. They are depressed. Many of them*  
225 *are dying because of that* (Male; 31 years; married).

226 However, it is the desire of PLWH to be loved and cared for, just like those not living with the  
227 disease. This feeling was expressed by most of the PLWH as captured in the excerpt below:

228 *People should stop discriminating those infected with HIV. Apart from giving drugs to them, they*  
229 *should also help them with food; because those infected are afraid of discrimination, people move to*

230 *very far places like Makurdi and Abuja to collect drugs; the government should help* ( Female; 24  
231 years; separated).

#### 232 **4.0 Discussion**

233 As indicated elsewhere, the full utilisation of programmes in place for prevention of HIV  
234 infection and treatment of PLWH in Nigeria are threatened by stigma and discrimination. While  
235 there is information on the negative implications of stigma and discrimination on the uptake of  
236 voluntary counselling services in Nigeria [7], the influence of stigma on adherence to  
237 medication remains unclear. This study has documented failure to adhere to Anti-retroviral  
238 treatment due to stigma and discrimination.

239 Due to stigma and discrimination, some of the PLWH are afraid to disclose their HIV sero-  
240 positive status and would like to be unnoticed collecting drugs. They travel to Drugs  
241 Collection Centers that are far from their place of residence and where their identity may  
242 remain hidden. Travelling to far places in search of conducive environment for drugs collection  
243 has additional burden in terms of cost. It adds to the overall HIV burden on the individual who is  
244 infected and his or her relations. In the face of low income and structural poverty, the individuals  
245 would sometimes fail to raise enough funds, to enable them travel to these centers to honour  
246 appointment and replenish their exhausted stock of drugs. Consequently, they sometimes miss  
247 taking their drugs regularly as prescribed. The inability to adhere strictly to medication would  
248 lead to treatment failure and attendant issues.

249 It is worthy to note that treatment failure may lead to complications and death. Thus stigma and  
250 discrimination are capable of increasing treatment failure and death amongst PLWH. This finding  
251 underscore the importance of eliminating stigma and discrimination in order to ensure adherence  
252 to medication amongst PLWH. If stigma is eradicated, PLWH would disclose their sero-positive  
253 status and also feel free to patronise Drugs Centers closer to their place of residence. Relatively,  
254 PLWH would need lesser amount of money to access treatment centres to honour appointments,

255 thereby increasing adherence to medication through regular check-up and replenishment of  
256 exhausted stock of drugs. The overall benefits would be enhanced mechanism of HIV prevention,  
257 treatment and control in the study area.

## 258 **5.0 Conclusion**

259 Evidence available suggests that PLWH suffer stigma and discrimination in the study area,  
260 even though, they (PLWH) would like to be loved and cared for. In reaction, some PLWH  
261 avoid public places, if possible, they travel long distances away from their immediate  
262 community to collect drugs, to avoid been noticed around the centers. Thus, they sometimes  
263 miss taking drugs regularly as prescribed, suffer depression and die. If stigma is eradicated,  
264 PLWH would disclose their sero-positive status and also feel free to patronise Drugs Centers  
265 closer to their place of residence. Relatively, PLWH would need lesser amount of money to  
266 access treatment centres, thereby increasing adherence to medication. The overall benefits would  
267 be enhanced mechanism of HIV prevention, treatment and control in the study area.

## 268 **Competing interest**

269 The authors declares no conflict of interest.

## 270 **Consent to Publish**

271 Both the consent to participate in the study and for the publication of the findings was  
272 obtained from the participants using ACU (Australian Catholic University) consent form  
273 before data collection activities.

## 274 **Availability of data and material**

275 The datasets during and /or analysed during the current study are not publicly available due to  
276 ethical issues but are from the corresponding author on reasonable

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