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Impact of Covid-19 Pandemic Lockdown on Delivery of Antiretroviral Therapy to Persons Living with HIV Infection

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Author for Correspondence *: +234-803-677-7296/ ecakwiwu@gmail.com**Abstract**

This study looked into the impact of COVID-19 pandemic on persons living with HIV infection in Calabar, Southern Nigeria. The objective was to understand the challenges faced by persons living with HIV infection in this region during this period of global health crisis. This cross-sectional study enrolled 100 persons living with HIV infection in Calabar, Southern Nigeria as respondents. The study participants were interviewed by two trained interviewers to fill up a pre-tested structured questionnaire on the impact of COVID-19 outbreak on persons living with HIV infection residing in Calabar, Southern Nigeria. Statistical tool applied was Chi-square analysis, while the level of significance was set at $p \leq 0.05$. All the study participants were aware of the need to adopt preventive measures against COVID-19 infection, while none had been tested for COVID-19 infection as at the time of the study. The younger subjects favored the use of nose masks while older persons appeared to engage more in regular hand washing. Respect for lockdown varied disproportionately across both gender and age groups. Adequate feeding, ease of movement and drug supply through hospital visitation were significantly influenced by both gender and age. Different frequencies of adherence to preventive measures were observed across gender and age. Ease of movement to access the clinics for antiretroviral drugs was a major challenge for persons living with HIV infection during the current COVID-19 pandemic.

Key words: COVID-19, Pandemic, HIV infection, Antiretroviral Therapy

Introduction

The ending of 2019 saw the emergence of an infectious outbreak with enormous public health impact. A novel infection, caused by Corona virus (SARS COV-2), that quickly turned into a global pandemic leaving parts of Asia, Europe and America ravaged (Sohrabi *et al.*, 2020; WHO, 2019a). Mostly affected are the elderly populations and persons with underlying clinical conditions (WHO, 2019b). It is also of interest that in the US, poor minority populations especially African Americans have been disproportionately affected owing to socio-economic challenges such as residential segregation that has led to minority groups living in densely populated areas and multi-generational households that left the elderly in minority groups less cared for. More importantly, many of the minority groups do not have health insurance (CDC, 2020). Despite having these factors that have made African Americans vulnerable to COVID -19 infection as the prevailing situation in Africa, the African continent appears to be largely spared from this global health challenge. A situation that has left much speculations in its trail. Aside from the appealing hypothetical projection that the tropical weather conditions with persistent high temperatures may be inimical to the survival of the virus in Africa, health experts continue to warn of a possible impending wave of infection. It is also possible that immense community infection may be ongoing but with minimal fatalities. The likelihood of this assumption is supported by the lack of adequate population testing present across African nations including Nigeria, although efforts are being made towards

scaling up COVID -19 testing (NCDC, 2020a). Thus, underdiagnosis and underreporting of cases are likely present in this part of the world.

Among the several measures adopted globally for controlling the spread of COVID-19, are maintenance of personal hygiene with particular reference to regular hand washing, alongside the use of nose mask (NCDC, 2020b; NCDC, 2020c). At the level of community involvement is the advocacy for social distancing and in places with potential intense transmission, the insistence for lockdown. To achieve the later, governments of various countries at different periods ensured compliance through policies and monitoring agents. African nations including Nigeria also adopted this measure. Recently though, lockdown is being eased across the globe with some form of monitoring to check subsequent surge in infections. As these attempts to return to normalcy continue to unfold, vulnerable groups in the population are warned to be cautious. So far, there is no evidence that persons living with HIV infection are at increased risk of being infected with COVID-19 (AVERT, 2020). There are however concerns about the possible impact of the COVID-19 pandemic on service disruption capable of reversing the gains of previous years that has brought prevalence of HIV infection in Nigeria to 1.4% (UNAIDS, 2020; WHO, 2020c). Some specific areas of interest comprise the understanding of current structures for healthcare delivery to persons living with HIV infection as well as identifying existing gaps for possible intervention. It is therefore necessary to look into the challenges being experienced by persons living with HIV infection in different regions of the world during this period of COVID-19 pandemic.

Materials and Methods

This cross-sectional study enrolled 100 persons living with HIV infection in Calabar, Southern

Nigeria as respondents. The study participants were interviewed by two trained interviewers to fill up a pre-tested structured questionnaire on the challenges faced by respondents during the lockdown period of the current COVID-19 pandemic. The study took place between April and July, 2020. Respondents were residents of Calabar and its environs in Southern Nigeria who have been accessing antiretroviral therapy at University of Calabar Teaching Hospital, Calabar Nigeria.

Ethical approval was obtained from the Health Research and Ethics Committee of University of Calabar Teaching Hospital. Informed consent was obtained from each participant enrolled in the research and confidentiality was maintained. Statistical analysis was performed on Microsoft Excel (MS office 2010) for windows and SPSS version 20.0. The Chi-squared analysis was used in this study. Results are expressed as percentages and the level of significance was set at $p \leq 0.05$.

Results

The persons living with HIV infection who were recruited for this study were aged 21-50 years of age. Female participants were more compared to the males. There were more married persons and good level of literacy among the study participants (Table 1). All the study participants were aware of the need to adopt preventive measures against COVID-19 infection. None of the participants had been tested for COVID-19 infection as at the time of the study. The younger subjects favored the use of nose masks while older persons engaged more in regular hand washing. Respect for 'stay at home' order varied disproportionately across gender and age groups (Table 2). While more of older subjects could sustain adequate feeding, ease of movement and drug supply through hospital visitation were significantly influenced by both gender and age (Table 3).

Table 1. Demographic parameters of studied subjects

Parameter	HIV-infected persons n=100
Age (years)	
21-30	42
31-40	34
41-50	24
Gender	
Females	68
Males	32
Marital Status	
Single	26
Married	64
Widowed	10
Educational Level	
Secondary	28
Tertiary	72
Duration of Treatment (years)	
<5	46
5 - 10	28
>10	26

Table 2. Adherence to COVID-19 preventive measures among persons living with HIV infection

Variables	Age Groups n=100	Males n=32	Females n=68	Age Distribution	p-value
Knowledge of COVID-19 preventive measures	21-30 (42)	100%	100%	100%	1.000
	31-40 (34)	100%	100%	100%	
	41-50 (24)	100%	100%	100%	
	Gender Distribution	100%	100%		
Testing for COVID-19	21-30 (42)	0%	0%	0%	1.000
	31-40 (34)	0%	0%	0%	
	41-50 (24)	0%	0%	0%	
	Gender Distribution	0%	0%		
Nose mask	21-30 (42)	100%	100%	100%	0.002
	31-40 (34)	60%	75%	71%	
	41-50 (24)	0%	70%	58%	
	Gender Distribution	75%	82%		
Sanitizers	21-30 (42)	22%	42%	33%	0.278
	31-40 (34)	40%	25%	29%	
	41-50 (24)	0%	50%	42%	
	Gender Distribution	25%	38%		
Regular hand washing	21-30 (42)	67%	50%	57%	0.081
	31-40 (34)	60%	83%	76%	
	41-50 (24)	100%	80%	83%	
	Gender Distribution	69%	71%		
Staying at home	21-30 (42)	33%	42%	38%	0.000
	31-40 (34)	20%	58%	47%	
	41-50 (24)	0%	100%	83%	
	Gender Distribution	25%	65%		

Table 3. Challenges associated with COVID-19 pandemic faced by persons living with HIV infection

Variables	Age Groups n=100	Males n=32	Females n=68	Age Distribution	p-value
Adequate feeding	21-30 (42) 31-40 (34) 41-50 (24)	22% 60% 100%	17% 50% 70%	19% 53% 75%	0.000
	Gender Distribution	44%	44%		1.000
Ease of movement for routine check	21-30 (42) 31-40 (34) 41-50 (24)	79% 80% 50%	33% 50% 20%	52% 59% 25%	0.001
	Gender Distribution	75%	35%		0.000
Challenge with drug supply	21-30 (42) 31-40 (34) 41-50 (24)	21% 20% 50%	67% 50% 80%	48% 41% 75%	0.003
	Gender Distribution	25%	65%		0.000

Discussion and Conclusion

The impact of HIV infection on reproductive health among populations in developing countries cannot be overemphasized. Female preponderance among persons living with HIV infection who access antiretroviral therapy at conventional health facilities in Southern Nigeria has been an observation in previous reports. Also noted with regards to age groups among adults is the fact that these persons are mainly of child-bearing age (Akwiwu *et al.*, 2019; Okafor *et al.*, 2019). This trend has remained a concern in the management of HIV infection because of the implications for mother to child transmission as well as the impact on family and national economy (FMoH, 2010; WHO, 2010). Nigeria is a developing nation with struggling health infrastructure and insurance schemes. Fortunately, COVID-19 fatalities at present are still minimal compared to some countries in the developed world where the pandemic has left immense mortality tolls in its wake. Aggressive national population testing for COVID-19 does not appear to be feasible at present, thus leaving the option of effective prevention as the sole

alternative in the fight against the pandemic. Sustained mass media campaign to comply with government regulations on COVID-19 preventive measures has kept members of the public knowledgeable (NCDC, 2020d). Beyond the awareness though, adherence remains an issue requiring of individual responsibility. This study observed different frequencies of adherence to preventive measures across both gender and age. While use of nose mask was more popular among younger subjects, more of older persons engaged in regular hand washing.

None of the study participants had received any palliative within the period of study. They were rather dependent on earned income and family support for survival. During the strict lockdown period, the 'stay at home' order appeared not to have been strictly respected with more males as well as younger persons finding ways to go about their needs. The current practice at centers providing healthcare for persons living with HIV infection in most resource-poor settings lack emergency responsiveness. It

simply requires patients to access the facility physically in order to receive medical attention in the form of review assessment, laboratory testing for monitoring parameters and prescription of antiretroviral drugs. Prior to this global pandemic that led to instituting of stringent rules against free movement, the system of having patients physically present at the health facilities appeared to be sufficient. The emergence of the current global health crisis has undoubtedly revealed a gap in the structure of care for an already existing vulnerable group. Apart from the effect of imposed lockdown that limited movement and cut many off their supply of antiretroviral drugs, there is also the risk of exposure within the hospital environment if these persons must access the centers physically to receive their prescriptions. There is need to improve on the current system and introduce a structure for safely reaching persons living with HIV infection during this pandemic for as many times as a lockdown may be necessary. This is important beyond the immediate outbreak considering the possibility of new waves of outbreak and the likelihood for seasonal patterns. In conclusion, different frequencies of adherence to preventive measures were observed across both gender and age. Ease of movement to access the clinics for antiretroviral drugs was a major challenge for persons living with HIV infection during the current COVID-19 pandemic.

Conflict of interest

All Authors declare no conflict of interest

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