

## PRISON PATIENT INMATES AND HEALTHCARE ACCESSIBILITY IN NIGERIA

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### **Abstract**

*The prison population is on the increase and the spectrum of health problems which prisoners bring to the prison and get infected with while incarcerated is wide. Therefore, prisoners need wide range of healthcare services. But there remain questions as to how accessible healthcare services are to the prison patient population in Nigeria. This project assesses the accessibility and also makes a comparative analysis of healthcare services to prison patient in-mates in Nigeria. This was a cross-sectional study conducted through questionnaire interview at three prisons in Enugu, Oji River and Ibite-Olo all in Enugu State of Nigeria. Included in the study, were all the prisoners (One hundred and fifty) who had used or presently using prison healthcare services as patients in the three facilities. Ethical approval for the study was gotten from University of Nigeria ethical and review committee. Patients consented verbally to questionnaire interviewed. There were significant accessibility differences amongst the prisons; high accessibility of healthcare services was associated most to Oji-River prison followed by Enugu and the least to Ibite-Olo prison. In general, most of the patients combined in all the prisons assessed healthcare service accessibility to be high. In conclusion, healthcare services accessibility was considered high in two prisons and very low in one. These differences on the accessibility of healthcare services reported amongst the prisons are of major concern especially when directives and coordination of prison healthcare services are provided from the same source---headquarters in Abuja. These problems could be reduced to the barest minimum if powers on availability of healthcare services and management are devolved to local prison authorities. More so, more budgetary allocations to prison healthcare services will be a good idea.*

**Keywords:** Healthcare services accessibility, Prison facility, patient in-mates, Enugu state, Nigeria.

## **Background**

Healthcare services to the general population in Sub-Saharan African is of a major concern and many countries in the region are grappling with the stark reality of improving services especially to the vulnerable populations due low health budgetary allocation by the governments and the unwillingness on their part to make available requisite personnel to carry out healthcare services. This reality is more among the prison populations who are most vulnerable with no choice to decide on who provides them with healthcare services and are left to the least the government could do. The prison health population is also more problematic given their general low income status and vulnerability to high drug use and infections compared to the general population. Healthcare service accessibility is defined in terms of individual person's ability to obtain requisite healthcare when needed with least hindrance in terms of finance and geographic distance.

The number of prisons globally is on the increase so is the number of health problems prisoners bring along with them [Watson *et al.*, 2004]. The very purpose for which the prisons are designed: punishment, correction and rehabilitation of prisoners to the community may run in conflict with the aims of health care [Watson *et al.*, 2004]. The number of health problems prisoners bring to prison is huge and usually surpasses the prevalence in the general population [Watson *et al.*, 2004; Her Majesty's Prison Service, 2001]. Take for example, the number of prisoners in the United States (US) with mental health problems is 90% with many also having a substance abuse problem, 80% of prisoners smoke and hepatitis B and C rates of infection are higher than in the general population. Problems of HIV positive and self-harming are also high [Watson *et al.*, 2004; Her Majesty's Prison Service, 2001]. High number of prisoners also suffers from chronic diseases like asthma and heart disease. A study conducted on New York City adults, has it that asthma rates were twice as high for people with a history of incarceration--12.7 percent as opposed to 6.2 percent for those without a history of incarceration [Emily *et al.*, 2010]. Those who had been imprisoned with history of asthma were more likely to suffer an asthma attack or go to the emergency department not considering if the patient had access to primary care or health insurance [Emily *et al.*, 2010]. This shows that persons with history of imprisonment would either develop more severe asthma or were less able to manage the problems associated with the disease while in prison [Emily *et al.*, 2010]. It was also shown that being imprisoned is associated to increased risk for hypertension and left ventricular hypertrophy [Emily *et al.*, 2010; Emily, 2009]. When Coronary Artery Risk Development in Young Adults study was reviewed, it was found that 12 percent of those who had history of imprisonment developed the condition as opposed to 7 percent of the sample without imprisonment history [Emily, 2009]. Also Inmates have high rates of chronic medical conditions, especially viral infections according to records unveiled in the United States [Andrew, 2009; Freudenberg, 2001]. Prison is built with many functions to fulfil including inmates' separation from society and confinement for the safety of society, punishment for crime, correction and rehabilitation to the community. The primary concern for the prisons may not necessarily be the health of the inmates but the need for security and discipline do take precedence [Watson *et al.*, 2004; Her

Majesty's Inspectorate for Prison for England and Wales, 1996]. The aims and objectives of prison healthcare are sometimes made unclear [Watson *et al.*, 2004]. Even though, certain directives do point to the fact that prisoners should have the same access to health care as the general population and that the healthcare provided in the prison should be equivalent to that provided to the general population, disparity still exists in prisoners disfavour [Watson *et al.*, 2004; Council of Europe, Recommendation R (98), 1989].

This project aims at assessing how accessible prison health care services are to the prison patient inmates including a comparative analysis of the same (accessibility of healthcare services) amongst three prison facilities in Southeast, Nigeria.

### **Principles and laws guiding the accessibility of prison health care services to prison inmates**

There are quality variations in inmates' medical care from place to place. Overall, resources are not enough to provide required healthcare services during the period of incarceration especially for the high-risk and vulnerable groups [Robert, 2006]. There is a global understanding that the jailor is indebted to prisoners a duty of ordinary and reasonable care for their health [Zalman, 1963]. Sometimes this duty to care has been interpreted to mean prisoners must receive the equivalence of medical care that a reasonable person would acquire for himself if he were free to do so [Zalman, 1963]. The court has always interpreted that duty to mean that prison physicians should show the same level of duty of care to prisoners as private physicians show to patients who are free to choose [Zalman, vol.63/issue 2 articles 3]. Investigativeresults from the United Kingdom (UK) carried out by National Health Service (NHS) for people in secure and detained settings to inform future health interventions and prioritization in England was of the view that the prison healthcare system should have the following attributes: increased accessibility to effective health and social care, improved continuity of care for people as they transition between prison and the community, greater emphasis on meeting mental health needs and improved quality of data and greater information sharing to enable performance management and more efficient and effective healthcare services [Leaman *et al.*, 2016].

### **Assessing the accessibility of health care services to prison patient inmates**

Persons in prison facilities have a constitutional right to necessary and adequate healthcare according to reports coming from the United States and this right is upheld whether they have been convicted of crime or not [Tamburello *et al.*, 2017; Bell v. Wolfish, 1979; Estelle v. Gamble, 1976], including those with mental health problem [Tamburello *et al.*, 2017; Bowring v. Godwin, 1977]. It is generally believed that inmates have a legally protected right to care for their "serious medical needs" and beyond. Also quoting from the Civil Rights of Institutionalized Person Act reports (CRIPA; 42 U.S.C. § 1997 *et seq.*), most jurisdictions in the US are required to hire both medical and mental health professionals to determine the health needs of inmates (jails with less than 100 detainees are exempt in the US). However, some reports also indicate that nonmedical correctional staff often performs screening during prisoner intake which in essence is a negation of the constitutionally protected rights of inmates to health care and the

Civil Rights of Institutionalized Person to mental care because of the potential inability of nonmedical staff to medically screen the intakes [Nowotny, 2017; *Patterson et al., 2006*]. This shows that some patient inmates who may have demonstrated a need for medical attention during intake may be excluded from such treatment at the discretion of the nonmedical correctional staff because of his deficiency in ascertaining medical conditions. This only goes to show that even though medical care which is constitutionally protected may not be accessible as at when due and needed by patient inmates. It also demonstrates that healthcare infrastructures whether staff or institutional practices within correctional facilities can create barriers limiting access to medical care for patient inmates [Nowotny, 2017; *Magee et al., 2005*]. Other than the above, some other conditions like Mandatory requirement of co-pays in the US, hygiene issues, administration of wrong medications, medications stopped by mistake, delay in obtaining needed medications, allergic reactions to medications, and other errors on the part of the facility also contribute negatively to the accessibility of care and the health of inmates [Nowotny, 2017; *Hatton et al., 2006*]. Also, variations in patients' perceived need for care account for the majority of the explained variability in health service use by them [Nowotny, 2017]. Put differently, if health service use is equitably distributed and equally perceived by individual patients within and between prisons, individuals who are most at need will be the most likely to use services [Nowotny, 2017]. Information on the use and availability of healthcare services should be provided to patients. Prison health service authorities are responsible for ensuring sufficient access and required levels of quality of care services to meet prisoners' health needs. Failure in this direction will always constitute barrier to patients accessing their required health care needs. Patient health needs are seen to be rising as the prison population grows worldwide [Moschetti *et al.*, 2017; *Fazel et al., 2017*; *Walmsley et al., 2015*] especially amongst the elderly inmates [Moschetti *et al.*, 2017; *Williams et al., 2015*; *Prison Reform Trust, 2016*]. The inmates' characteristics and the prison environment partly explain why Health Care Utilisation [HCU] is greater than in the general population [Moschetti *et al.*, 2017; *Twaddle, 1976*; *Marshall et al., 2001*; *Feron et al., 2005*; *Sheps et al., 1987*]. Inmates have lots of socioeconomic vulnerability factors such as chaotic life experiences, unemployment, low educational backgrounds, or lack of health insurance and these things contribute to increased demand for health care compared to the general population. Prisoners do suffer from higher disease prevalence as shown by epidemiological evidence than the general population [Moschetti *et al.*, 2017; *Fazel et al., 2011*; *Binswanger et al., 2009*; *Moschetti et al., 2015*; *Fazel et al., 2001*; *Wilper et al., 2009*], with psychiatric disorders, substance abuse and infectious diseases being particularly prominent [Moschetti *et al.*, 2017; *Twaddle, 1976*; *Wilper et al., 2009*; *Rutherford, 2009*; *Fazel et al., 2012*; *Wolff et al., 2011*].

Reports coming from Sub-Saharan Africa (SSA) have it that in spite of widespread recognition that prisons are a high-risk environment for ill-health [Topp *et al.*, 2016; *Seifman et al., 2008*; *Johnstone-Robertson et al., 2011*; *Jürgens et al., 2011*], concerted efforts still lag in most of these countries' response to providing required and adequate care to prison inmates [Topp *et al.*, 2016; *Directorate of Social & Human Development & Special Programs SADC, 2009*]. Plans to

adequately improve health in prisons in these countries have tended to be inadequately organized and fragmented and if such plans should exist, it has remained simply disease-specific and non-encompassing. Also, there is often the lack of national health strategic plans in reference to prison-specific healthcare interventions in these countries [UNODC, 2010]. There is low overall priority given to prisoner health by national and local policy makers in these countries and this remains a key contributing factor to poor prison healthcare in these countries [Topp *et al.*, 2016; Fazel *et al.*, 2011]. Recent research coming from SSA demonstrates high rates of infectious disease in a range of prison settings [Topp *et al.*, 2016; Noeske *et al.*, 2006; Noeske *et al.*, 2013; Schwitters *et al.*, 2014; Telisinghe *et al.*, 2014]. However, the lack of willingness on the part of policy makers and programme developers to evolve sound and sustainable interventions on prison healthcare has been constrained by (among other things) the paucity of research focused on institutional and social dynamics influencing prisoner health and access to health care in these countries. South Africa seems an exception as it has a small but growing number of studies addressing such issues [Topp *et al.*, 2016; Sifunda *et al.*, 2006; Sifunda *et al.*, 2007; Stephens *et al.*, 2009; Stephens *et al.*, 2016].

Many years since the inception of the new millennium, health for all in Nigeria and many African nations has not taken hold. Recent evaluation of African Health systems paints a gloomy picture of weakness in performance [Agunbiade, 2013; African Regional Health Report, 2006]. Prisoners in these countries are most times from the poorest segment of the society, and inadvertently suffer more from inequitable access to health care services. These experiences in these countries also negatively increase existing health problems of prison inmates [Agunbiade, 2013; De viggiani, 2007]. Going by the aforementioned, achieving both qualitative and quantitative health among special groups like prison inmates may be far from realisation due to the slow attitude of prison administrators and the governments in particular in addressing the health needs of prisoners [Agunbiade, 2013]. The general poor condition of health care delivery in Nigeria is a condition that has negatively placed prisoners' health in jeopardy'. It is generally believed that many of the mental health problems in Nigeria may be under diagnosed due to the poor state of healthcare delivery [Agunbiade, 2013; Hilton *et al.*, 2001; Hoptman *et al.*, 2007]. Some studies have confirmed the increasing incidence of prisoners with mental health posing problems to correctional staff and this in essence do reduce access to healthcare services because of the associated violence posed by such inmates [Agunbiade, 2013; Hilton *et al.*, 2001; Hoptman *et al.*, 2007]. Prisoners are not charged for healthcare services offered them in Nigerian prisons. In Nigeria, even though it is constitutionally enshrined that the prisoner has a right to medical services, but these services are not always available as reflected in a write up in the "Guardian Newspaper" which says that; there should be a right to medical services in the prisons [See the sad description in Behind the wall at pp. 37 – 41, 1991]. Incarceration according to the paper should not be a route to the death chamber. Prisoners should have a right not to be assaulted by either fellow inmates or prison officers continued the paper [See the sad description in Behind the Wall at pp. 37 – 41, 1991]. How far the right to access of healthcare services is

guaranteed to prison patient inmates in Nigeria remains undetermined as that constitutes the basis for this study.

The search of the literature has revealed little or no information on prison healthcare services in Nigeria, let alone information on accessibility of healthcare services to patient prison inmates. Therefore this project was organised to assess how accessible healthcare services are to prison patient inmates in Nigeria. At the same time, the study equally made a comparative analysis of inmates' access to healthcare amongst the three prisons studied to understand if differences do exist dependent on the prison an inmate is serving time.

## **Materials and Methods**

### **Study area**

The study area for this research is Enugu state located in South-east Nigeria. The State has 17 Local Government Areas (LGAs) with 3 senatorial zones for administrative purposes comprising Enugu North, Enugu East and Enugu West Senatorial zones [Ezuma, 2012]. The urban population dwellers are mainly civil servants, traders, transporters or artisans while those that reside in the rural areas are mainly subsistence farmers or petty traders [Okoli *et al.*, 2011]. A minor portion of the population is engaged in manufacturing activities and the state also has well-developed commercial and financial centre [Onwujekwe *et al.*, 2010].

### **Ethics approval and consent to participate**

Ethical approval for the research was applied for and gotten from a local ethical clearance committee (University of Nigeria ethical and review committee) to conduct the research. The research was conducted in complete compliance with the Helsinki Declaration and local legislations. Patients consented orally to be interviewed. This method of consent was interviewer-preferred. Included in the study were all the prisoners who at one time or the other had used or presently using prison healthcare services as patients during the time of our study. The study was centred at three prisons in—Enugu, Oji River and Ibite-Olo all in Enugu State of Nigeria and was directed at ascertaining the accessibility of health care services to prison patient inmates.

### **Questionnaire administration**

Using originally validated questionnaires [Reed *et al.*, 1997; Tanguay *et al.*, 2014; Prison Health Research Net Work; WEBSTER *et al.*, 2011; Marshal *et al.*, 1994; Grogan *et al.*, 2000] measuring patients' accessibility to healthcare services, the authors were able to put together an instrument that measured accessibility of healthcare services with particular reference to the prison patient population in the Nigerian prisons. Data was collected from the patients on their perceptions of and how prison health services were accessible to them.

## Method of Analysis

The analysis of the data was done both with descriptive and inferential statistics. For descriptive statistics: frequency and percentage were employed to summarize the data. For inferential statistics: Chi-Square Test of Association and Fishers Exact Test were employed to test for difference between proportions. Statistical conclusions were made at 5% level of significance. A binary logistic regression was also performed on the data to predict the logit of assessing service accessibility in the prison to be high. The dependent variable (service accessibility assessment) used for both the inferential statistics and the logistic regression was generated by computing each participant's overall accessibility assessment score from items. This overall score was categorized into a dichotomous variable (low and high). Those classified as high had total assessment score of 4-7 while those classified as low had total score of 0-3. These statistical analyses were performed using the Statistical Package for Social Sciences (SPSS) version 20.

## Results

**Table 1: Socio-demographic Characteristics of the Prison Patients**

		Prisons			Total
		Enugu	Ibite-Olo	Oji River	
Age	≤ 20 years	6(6.5)	3(14.3)	2(5.4)	11(7.3)
	21-30 years	44(47.8)	14(66.7)	17(45.9)	75(50.0)
	31-40 years	23(25.0)	4(19.0)	14(37.8)	41(27.3)
	41-50 years	11(12.0)	0(0.0)	2(5.4)	13(8.7)
	51+ years	8(8.7)	0(0.0)	2(5.4)	10(6.7)
	Total	92(100.0)	21(100.0)	37(100.0)	150(100.0)
Sex	Male	77(84.6)	21(100.0)	36(100.0)	134(90.5)
	Female	14(15.4)	0(0.0)	0(0.0)	14(9.5)
	Total	91(100.0)	21(100.0)	36(100.0)	148(100.0)
Length of jail service	≤ 6 mths	27(29.3)	3(15.8)	10(27.0)	40(27.0)
	7 mths - 2 yrs	33(35.9)	10(52.6)	8(21.6)	51(34.5)
	3-7 yrs	23(25.0)	5(26.3)*	19(51.4)	47(31.8)
	8+ yrs	9(9.8)	1(5.3)*	0(0.0)	10(6.8)
	Total	92(100.0)	19(100.0)	37(100.0)	148(100.0)
Highest educational qualification	No school	0(0.0)	4(19.0)	0(0.0)	4(2.7)
	Primary	4(4.5)	5(23.8)	4(10.8)	13(8.9)
	Secondary	47(53.4)	11(52.4)	14(37.8)	72(49.3)
	Tertiary	37(42.0)	1(4.8)	19(51.4)	57(39.0)
	Total	88(100.0)	21(100.0)	37(100.0)	146(100.0)

\* categories summed up due to small frequency

Table 1 displays the demographic characteristics of the prison patients. Majority of the patients was between 21-30 years (Enugu prison (47.8%), Ibite-Olo prison (66.7%) and Oji River prison

(45.9%)). Males were predominant in Enugu prison (84.6%) while Ibite-Olo prison (100.0%) and Oji River prison (100.0%) had only males. In length of jail service, Enugu prison (35.9%) and Ibite-Olo prison (52.6%) had more patients that have served 7 months – 2 years while Oji River prison had more of those that have served 3-7 years (51.4%). Patients with secondary education were predominant in Enugu prison (53.4%) and Ibite-Olo prison (52.4%) while those with tertiary education were predominant in Oji River (51.4%).

**Table 2: Assessment of Service Accessibility in Prison Health Facility by Prisoner Patients**

	Services	Frequency	Percent
<b>Enugu Prison (n = 95)</b>	Emergency 24 hours clinic	47	49.5
	In-patient clinic with bed facility	82	86.3
	Referral services	55	57.9
	Pharmacy	43	45.3
	Getting adequate amount of drugs	40	42.1
	Contacting provider when absent	46	48.4
	Laboratory services	50	52.6
	<b>Overall accessibility</b>		
	Low	40	42.1
	High	55	57.9
<b>Ibite-olo Prison (n =21)</b>	Emergency 24 hours clinic	0	0.0
	In-patient clinic with bed facility	1	4.8
	Referral services	10	47.6
	Pharmacy	1	4.8
	Getting adequate amount of drugs	4	19.0
	Contacting provider when absent	15	71.4
	Laboratory services	3	14.3
	<b>Overall accessibility</b>		
	Low	19	90.5
	High	2	9.5
<b>Oji-River Prison (n = 37)</b>	Emergency 24 hours clinic	25	67.6
	In-patient clinic with bed facility	25	67.6
	Referral services	32	86.5
	Pharmacy	11	29.7
	Getting adequate amount of drugs	31	83.8
	Contacting provider when absent	32	86.5
	Laboratory services	14	37.8
	<b>Overall accessibility</b>		
	Low	10	27.0
	High	27	73.0

Overall accessibility = Low (if  $\leq 3$  services were accessible) or High (if  $> 3$  services were accessible)

Table 2 displays the assessment of services accessible in prison health facility to prison patient inmates. In Enugu prison, the most accessible service was that of in-patient clinic with bed facility (86.3%). Accessibility of referral services (57.9%) and laboratory services (52.6%) were



slightly above average while that of emergency 24 hours clinic (49.5%), contacting provider when absent (48.4%) and pharmacy (45.3%) were slightly below average. Getting adequate amount of drugs was the least accessible service (42.1%). In general, greater part of the patients assessed service accessibility in the prison to be high (57.9%)

In Ibite-olo prison, the most accessible service was that of contacting provider when absent (71.4%). Referral services were also accessible though slightly below average (47.6%). Services such as getting adequate amount of drugs (19.0%), laboratory services (14.3%), pharmacy (4.8%) and in-patient clinic with bed facility (4.8%) were rarely accessible while emergency 24 hours clinic was not accessible (0.0%). In general, quite a few patients assessed service accessibility in the prison to be high (9.5%); majority assessed it to be low (90.5%).

In Oji-River prison, the most accessible services were that of referral services (86.5%), contacting provider when absent (86.5%) and getting adequate amount of drugs (83.8%). Accessibility of emergency 24 hours (67.6%) and in-patient clinic with bed facility (67.6%) was also relatively high while that of laboratory services (37.8%) and pharmacy (29.7%) was low. In general, most of the patients assessed service accessibility in the prison to be high (73.0%).

**Table 3: Health Service Accessibility Assessment in Prisons' Health Facilities: Between Prisons Comparison**

		Enugu	Prison		Chi-Square	df	p-value
			Ibite-Olo	Oji River			
Emergency 24 hours clinic services	Yes	47(51.6)	0(0.0)	25(71.4)	27.478	2	< .001
	No	44(48.4)	21(100.0)	10(28.6)			
In-patient clinic with bed facility	Yes	82(89.1)	1(4.8)	25(67.6)	60.846	2	< .001
	No	10(10.9)	20(95.2)	12(32.4)			
Referral services	Yes	55(61.8)	10(47.6)	32(86.5)	10.780	2	.005
	No	34(38.2)	11(52.4)	5(13.5)			
Pharmacy	Yes	43(48.3)	1(5.0)	11(29.7)	14.380	2	.001
	No	46(51.7)	19(95.0)	26(70.3)			
Getting adequate amount of drugs	Yes	40(44.4)	4(20.0)	31(83.8)	25.152	2	< .001
	No	50(55.6)	16(80.0)	6(16.2)			
Contacting provider when absent	Yes	46(51.1)	15(71.4)	32(86.5)	14.825	2	.001
	No	44(48.9)	6(28.6)	5(13.5)			
Laboratory services	Yes	50(55.6)	3(15.8)	14(37.8)	11.285	2	.004
	No	40(44.4)	16(84.2)	23(62.2)			
Overall accessibility	High	55(57.9)	2(9.5)	27(73.0)	22.689	2	< .001
	Low	40(42.1)	19(90.5)	10(27.0)			

Table 3 displays a between prisons comparison on service accessibility assessment in the prison health facility. There was significant difference between prisons on accessibility of all the listed services. For emergency 24 hours clinic ( $p < .001$ ), referral services ( $p = .005$ ) and getting adequate amount of drugs ( $p < .001$ ), there was significant accessibility difference between prisons; accessibility was highest in Oji River prison and least in Ibite-Olo prison {emergency: Oji-River (71.4%), Enugu (51.6%) and Ibite-Olo (0.0%); referral: Oji-River (86.5%), Enugu (61.8%) and Ibite-Olo (47.6%); and drugs: Oji-River (83.8%), Enugu (44.4%) and Ibite-Olo (20.0%)}.

For contacting of provider when absent ( $p = .001$ ), there was likewise a significant accessibility difference between prisons; accessibility was highest in Oji-River prison and least in Enugu prison {Oji River (86.5%), Ibite-Olo (71.4%) and Enugu (51.1%)}.

For in-patient clinic with bed facility ( $p < .001$ ), pharmacy ( $p = .001$ ) and laboratory services, there was also significant accessibility difference between prisons; however, accessibility was highest in Enugu prison and least in Ibite-Olo prison {in-patient clinic: Enugu (89.1%), Oji-River (67.6%) and Ibite-Olo (4.8%); pharmacy: Enugu (48.3%), Oji-River (29.7%) and Ibite-Olo (5.0%); and laboratory service: Enugu (55.6%), Oji-River (37.8%) and Ibite-Olo (15.8%)}.

For overall accessibility, there was significant difference between prisons; high accessibility of the services was associated most to Oji-River prison and least to Ibite-Olo prison {Oji-River (73.0%), Enugu (57.9%) and Ibite-Olo (9.5%)}.

**Table 4: Service Accessibility Assessment of the Prison Health Facilities: amongst Age Group Comparison**

	Accessibility Assessment			Chi-Square	df	p-value	
	Low	High	Total				
<b>Enugu prison</b>							
Age	≤ 30 years	21(42.0)	29(58.0)	50(100.0)	7.325	2	.026
	31-40 years	13(56.5)	10(43.5)	23(100.0)			
	41+ years	3(15.8)	16(84.2)	19(100.0)			
<b>Ibite-Olo prison</b>							
Age	≤ 30 years	15(88.2)	2(11.8)	17(100.0)	-	-	1.000 <sup>+</sup>
	31-40 years	4(100.0)	0(0.0)	4(100.0)			
<b>Oji-River prison</b>							
Age	≤ 30 years	3(15.8)	16(84.2)	19(100.0)	5.901	2	.050 <sup>+</sup>
	31-40 years	4(28.6)	10(71.4)	14(100.0)			
	41+ years	3(75.0)	1(25.0)	4(100.0)			

Oji-River prison p-value = .04995; + Chi-Square test exact p-value; \* Fishers Exact test p-value

Table 4 displays comparison between age groups on service accessibility assessment of prison health facility. In Enugu prison ( $p = .026$ ) and Oji-River prison ( $p = .050$ ), there was significant assessment difference between age groups. In Enugu prison, more of the elderly patients (41+ years), than the younger ones ( $\leq 30$  years and 31-40 years) assessed accessibility to be high ( $\leq$

30 years {(58.0%), 31-40 years (43.5%) and 41+ years (84.2%)}. In Oji-River prison, it was vice versa; increase in age consistently decreased the assessment; thus the elderly least assessed it high {≤ 30 years (84.2%), 31-40 years (71.4%) and 41+ years (25.0%)}. In Ibite-Olo, there was no significant assessment difference between age groups.

**Table 5: Service accessibility assessment of the Prison Health Facilities: Between Sex Comparisons**

		Accessibility Assessment			Chi-Square	df	p-value
		Low	High	Total			
<b>Enugu Prison</b>							
Sex	Male	35(45.5)	42(54.5)	77(100.0)	4.770	1	.029
	Female	2(14.3)	12(85.7)	14(100.0)			
<b>Ibite-Olo prison</b>							
Sex	Male	19(90.5)	2(9.5)	21(100.0)	-	-	-
	Female	-	-	-			
<b>Oji-River prison</b>							
Sex	Male	9(25.0)	27(75.0)	36(100.0)	-	-	-
	Female	-	-	-			

Table 5 displays comparison between male and female patients on service accessibility assessment of prison health facility. In Enugu prison ( $p = .029$ ), there was a significant assessment difference between males and females; more females (85.7%) than males (54.5%) assessed service accessibility to be high. In Ibite-Olo prison and Oji-River prison, there were no female respondent.

**Table 6: Service Accessibility Assessment of the Prison Health Facilities: Comparison between Prison Patients Grouped by Length of Jail Service**

		Accessibility Assessment			Chi-Square	df	p-value
		Low	High	Total			
<b>Enugu Prison</b>							
Length of jail service	< 6 mths	12(44.4)	15(55.6)	27(100.0)	1.415	3	.702
	7 mths - 2 yrs	11(33.3)	22(66.7)	33(100.0)			
	3-7 yrs	11(47.8)	12(52.2)	23(100.0)			
	8+ yrs	4(44.4)	5(55.6)	9(100.0)			
<b>Ibite-Olo Prison</b>							
Length of jail service	< 6 mths	2(66.7)	1(33.3)	3(100.0)	5.630	2	.158*
	7 mths - 2 yrs	10(100.0)	0(0.0)	10(100.0)			
	3+ yrs	6(100.0)	0(0.0)	6(100.0)			
<b>Oji-River Prison</b>							
Length of jail service	< 6 mths	3(30.0)	7(70.0)	10(100.0)	.834	2	.706*
	7 mths - 2 yrs	3(37.5)	5(62.5)	8(100.0)			
	3-7 yrs	4(21.1)	15(78.9)	19(100.0)			

\* Exact p-value computed

Table 6 displays comparison between prison patients grouped by their length of jail service on service accessibility assessment of prison health facility. In all the prisons, there was no significant assessment difference between the groups {Enugu prison ( $p = .702$ ), Ibite-Olo prison ( $p = .158$ ) and Oji-River ( $p = .706$ )}. This implies that the patients grouped by their length of jail service had the same assessment on service accessibility in prison health facility.

**Table 7: Service Accessibility Assessment of Prison Health Facilities: Comparison between Prison Patients Grouped by Educational Qualification**

	Accessibility Assessment			Chi-Square	df	p-value
	Low	High	Total			
<b>Enugu Prison</b>						
Highest educational qualification	Primary	3(75.0)	4(100.0)	.593	2	.759
	Secondary	18(38.3)	47(100.0)			
	Tertiary	16(43.2)	37(100.0)			
<b>Ibite-Olo Prison</b>						
Highest educational qualification	No formal	2(50.0)	4(100.0)	9.395	2	.029
	Primary	5(100.0)	5(100.0)			
	Secondary	12(100.0)	12(100.0)			
<b>Oji-River Prison</b>						
Highest educational qualification	Primary	2(50.0)	4(100.0)	5.472	2	.071
	Secondary	6(42.9)	14(100.0)			
	Tertiary	2(10.5)	19(100.0)			

Exact p-value computed

Table 7 displays comparison between prison patients grouped by their educational qualification on service accessibility assessment of prison health facility. In Ibite-Olo prison ( $p = .029$ ), there was a significant assessment difference between the groups; assessing accessibility high was more among those with no formal education (50.0%) than those with primary (0.0%) or secondary education (0.0%). In Enugu prison ( $p = .759$ ) and Oji-River prison ( $p = .071$ ), there was no significant difference between the educational groups.

**Table 8a: Logistic Regression Classification Table, Model Summary and Omnibus Test of Model Coefficients on Patients' Assessment of Service Accessibility in Prison Health Facility**

Classification Table (cut value = .500)		Service Accessibility Assessment			Statistic
		Low	High	% Correct	
Service Accessibility Assessment	Low	30	30	50.0	
	High	9	71	88.8	
	Overall %			72.1	
<b>Model Summary</b>					
-2 Log likelihood					151.319
Cox & Snell R <sup>2</sup>					.248
Nagelkerke R <sup>2</sup>					.333
<b>Omnibus Test of Model Coefficients</b>					
Chi-Square					39.895
df					10
p-value					< .001

**Table 8b: Logistic Regression Model Coefficients on Patients' Assessment of Service Accessibility in Prison Health Facility**

	B	S.E.	Wald	df	p-value	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
<b>Constant</b>	2.947	1.212	5.906	1	.015	19.041		
<b>Prison</b>			12.961	2	.002*			
Ibite-Olo	-3.182	1.119	8.081	1	.004*	.041 <sup>+</sup>	.005 <sup>+</sup>	.372 <sup>+</sup>
Oji-River	.905	.488	3.445	1	.063	2.473	.951	6.433
<b>Age</b>			4.630	2	.099			
≤ 30 years	-.079	.609	.017	1	.897	.924	.280	3.047
31-40 years	-1.069	.623	2.948	1	.086	.343	.101	1.163
Sex (Male)	-1.456	.817	3.180	1	.075	.233	.047	1.155
<b>Length of jail service</b>			.528	3	.913			
≤ 6 months	-.615	.904	.463	1	.496	.541	.092	3.179
7 months - 2 yrs	-.598	.889	.453	1	.501	.550	.096	3.138
3-7 yrs	-.441	.865	.260	1	.610	.643	.118	3.506
<b>Educational qual.</b>			2.023	2	.364			
Primary or less	-.312	.838	.139	1	.709	.732	.142	3.783
Secondary	-.643	.454	2.011	1	.156	.525	.216	1.279

Predictors: Prison, Age, Sex, Length of jail service & Educational level; Dependent variable: Service Accessibility Assessment

Reference category: Prison (Enugu), Age (41+ years), Gender (female), Length of jail service (8+ years), Educational level (tertiary)

\* = Significant predictor; + = [OR = .041499, 95% C.I. of .004626 – .372292]

The logistic regression model [logit (of assessing service accessibility of prison health facility high) = 2.947 – 3.182 (Ibite-Olo) + 0.905 (Oji-River) – 0.079\*(≤ 30 years) – 1.069\*(31-40 years) – 1.456\*gender – 0.615\*(≤ 6 months) – 0.598\*(7 months–2 years) – 0.441\*(3-7 years) – 0.312\*(≤ primary education) – 0.643\*(secondary education)] explained 33.3% (Nagelkerke R<sup>2</sup>) of the variation in the service accessibility assessment status of the prison patients (that is, whether a patient assessed it low or high). The model correctly predicted 50.0% of the patients to assess it low; correctly predicted 88.8% of the patients to assess it high and in general, correctly predicted the assessment status of 72.1% of the patients. The omnibus test of the model coefficients using the Chi-Square revealed that the model coefficients were significant,  $p < .001$ . The Wald statistic further indicated that only the model coefficient of prison was significant,  $p = .002$ . Holding other predictors constant, in predicting a patient who will assess service accessibility to be high, Ibite-Olo prison patients had odds approximately .041 times the odds of Enugu prison patients [95% C.I. of 0.005-0.372]. In other words, patients in Enugu prison had odds approximately 24 times the odds of patients in Ibite-Olo prison [95% C.I. of 2.69-216.18]. Oji-River prison patients had the same odds with Enugu prison [OR = 2.473, 95% C.I. of 0.951-6.433,  $p = .063$ ].

For the coefficients of age ( $p = .099$ ), length of jail service ( $p = .913$ ) and educational qualification ( $p = .364$ ), the Wald statistic revealed no significance. This implies that holding other variables constant, the patients grouped by their different age groups had the same odds of assessing service accessibility to be high; likewise when grouped by length of jail service and educational level.

## Discussion

Majority of the patient inmates was young (between 21-30 years) and differed in gender composition amongst the prisons in favour of men. In length of jail service, Enugu prison and Ibite-Olo prison had more patients that have served 7 months – 2 years while Oji River prison had more of those that have served 3-7 years. Inmates differed in their educational qualifications amongst the three prisons with Enugu and Ibite-Olo remaining almost at par at the secondary school level, while Oji River had more patient inmates with tertiary education.

In assessing the accessibility of prison health care services, patient inmates at the Enugu prison indicated that the most accessible services were that of in-patient clinic with bed facility followed by referral services and laboratory services which were slightly above average. Emergency 24 hours clinic, contacting provider when absent and pharmacy were slightly below average. Getting adequate amount of drugs was the least accessible service. In general, greater part of the patients at the Enugu prison assessed service accessibility in the prison to be high. In Ibite-Olo prison, the most accessible service was that of contacting provider when absent. Referral services were also accessible though slightly below average. Services such as getting adequate amount of drugs, laboratory services, pharmacy and in-patient clinic with bed facility were rarely accessible while emergency 24 hours clinic was not accessible. In general, quite a few patients assessed service accessibility in the prison to be high; majority assessed it to be low. At the Oji-River prison, the most accessible services were that of referral services, contacting provider when absent and getting adequate amount of drugs. Accessibility of emergency 24 hours and in-patient clinic with bed facility were also relatively high while that of laboratory services and pharmacy was low. In general, most of the patients assessed healthcare service accessibility in the prison to be high. These results do indicate that just Enugu and Orji-River prisons showed high accessibility of prison healthcare services to patient inmates unlike Ibite-Olo where accessibility of healthcare services was rather rated low. On our visits to the prisons, one thing that remained common was the absence of pharmaceutical products especially drugs for patient inmates. On closer examination and on interaction with the prisons' authorities, we could design a non-coordinated effort on the part of the authorities to make available pharmaceutical products mostly drugs for patient inmates' benefits. This case of non-availability of drugs was more manifest and difficult at Ibite-Olo, where there was a complete absence of a functioning pharmacy as drugs were supplied to the prison on a request basis alone. Patients also recalled that at most times the drug supply took longer time than necessary and may also be unavailable at last either because of high cost or non-prioritization on the part of the prison authority to make the drugs available. The inaccessibility of drugs to prison patient inmates reflects the general out-of-drug syndrome witnessed within the Nigerian healthcare system where patients are often advised to obtain their prescribed drugs from facilities outside the ones that prescribed them hindering access to healthcare services. This result reflects [Topp et al., 2016; Noeske *et al.*, 2006; Noeske *et al.*, 2013; Schwitters *et al.*, 2014; Telisinghe *et al.*, 2014] where it was documented that reports coming from the Sub-Saharan Africa (SSA) have it that despite

widespread recognition that prisons are a high-risk environment for ill-health, deficiencies remain in most SSA countries' response due to low priority. Beefing up government's response to prison healthcare services delivery in Nigeria through investigative undertakings amongst the prisons and eventual policy response to address identified problems should get the government's attention as soon as possible.

Comparisons on health services accessibility amongst the prisons showed that there were significant differences amongst them. In emergency 24 hours clinic, referral services and getting adequate amount of drugs, significant accessibility differences amongst the prisons exist and was highest in Oji River and least in Ibite-Olo. For contacting of provider when absent, there was likewise a significant accessibility difference amongst the prisons; accessibility was highest in Oji-River prison and least in Enugu prison. For in-patient clinic with bed facility, pharmacy and laboratory services there were also significant accessibility differences amongst the prisons; however, accessibility was highest in Enugu prison and least in Ibite-Olo prison. For overall accessibility, there were significant differences amongst the prisons; high accessibility of the services was associated most to Oji-River prison and least to Ibite-Olo prison. These differences on the accessibility of healthcare services reported amongst the prisons are of concerns especially when directives and coordination of prison healthcare services are provided from the same source---headquarters in Abuja. These problems could be narrowed down to the ability and inability of the local prison officials to implement directives as directed, thus the variances. Improved monitoring and evaluation of the implementation processes of the healthcare services for the overall benefit of the prison inmates should be encouraged from the headquarters in Abuja. These results reflect the findings in [Topp *et al.*, 2016; Noeske *et al.*, 2006; Noeske *et al.*, 2013; Schwitters *et al.*, 2014; Telisinghe *et al.*, 2014] that state that reports coming from the Sub-Saharan Africa (SSA) have it that despite widespread recognition that prisons are a high-risk environment for ill-health, deficiencies remain in most SSA countries' response. Strategies to improve health in prisons have tended to be isolated and disease-specific and national health strategic plans often lack substantive reference to prison-specific interventions.

Comparisons amongst age groups on health care services accessibility show that at Enugu prison and Oji-River prison, there were significant accessibility assessment differences amongst the age groups. In Enugu prison, more of the elderly patients, than the younger ones ( $\leq 30$  years and 31-40 years) assessed accessibility of prison health care services to be high. In Oji-River prison, it was vice versa; increase in age consistently decreased the accessibility assessment of prison health care services; thus the elderly least assessed it high. In Ibite-Olo, there was no significant accessibility assessment difference amongst the age groups. These reported differences could be accounted for by the likely differentials in the individual prison's authority attitude towards the prison patient inmates in regard to age-related healthcare services delivery. This is because all the existing policies regarding healthcare services delivery in the prisons remain the same and in the hands of the federal government of Nigeria who controls them. The differences we have witnessed may have come from local prison authorities in the way they enforce and implement

policies regarding age-related healthcare services delivery. Monitoring and enforcement of rules and regulations in regard to these healthcare policies in all the prisons in Nigeria could be the right step in the right direction to ensure uniformity of purpose and results. Information in regard to healthcare consumption sensitive to the various patients' age brackets within and amongst the prisons should be developed to improve on the observed differences amongst the different age groups' accessibility to healthcare. These results equally show that there exist differences in attitude in regard to healthcare consumption as the elderly population is more likely to seek and require more healthcare unlike the younger population that may have a less concern attitude to healthcare consumption. This result also reflects [Topp *et al.*, 2016; Noeske *et al.*, 2006; Noeske *et al.*, 2013; Schwitters *et al.*, 2014; Telisinghe *et al.*, 2014] where it was documented that reports coming from the Sub-Saharan Africa (SSA) have it that despite widespread recognition that prisons are a high-risk environment for ill-health, deficiencies remain in most SSA countries' response due to low priority.

Comparisons between male and female patients on accessibility of prison healthcare facilities have it that in Enugu prison, there was a significant assessment difference on the accessibility of healthcare between males and females; more females than males assessed service accessibility to be high. In Ibite-Olo prison and Oji-River prison, there were no female respondents. This difference basically is accounted for by individual gender attitude towards healthcare accessibility and consumption as females are more likely to pay particular attention to healthcare consumption compared to their male counterparts. Gender sensitive policies to encourage the male patient inmates' attitude towards better personal/healthcare should be encouraged. This result also reflects the almost general policy failure to address gender differences on consumption of healthcare. This result above is supported by the following statement as in publications [Topp *et al.*, 2016; Sifunda *et al.*, 2006; Sifunda *et al.*, 2007; Stephens *et al.*, 2009; Stephens *et al.*, 2016] which say in effect that policies guiding the provision of care in prisons have been constrained by the inability of policy makers and programme developers to develop sophisticated and sustainable interventions to improve access to healthcare in SSA. This constraint has been due to (among other things) the paucity of research focused on the institutional and social dynamics influencing prisoner health and access to health care.

The logistic regression model assessing service accessibility of prison healthcare facilities by inmates was high which confirms the results as above. The omnibus test of the model coefficients using the Chi-Square revealed that the model coefficients were significant. The Wald statistic further indicated that only the model coefficient of prison healthcare was significant. Holding other predictors constant, in predicting a patient who will assess service accessibility to be high, Ibite-Olo prison patient inmates had odds approximately .041 times the odds of Enugu prison patient inmates. In other words, patients in Enugu prison had odds approximately 24 times the odds of patients in Ibite-Olo prison. Oji-River prison patient inmates had the same odds with Enugu prison. For the coefficients of age, length of jail service and educational qualification, the Wald statistic revealed no significance. This implies that holding other variables constant, the



patients grouped by their different age groups had the same odds of assessing service accessibility to be high; likewise when grouped by length of jail service and educational level.

### **Conclusion**

In conclusion, healthcare services accessibility was considered high though with individual prison's differences. In general, greater part of the patients at the Enugu prison assessed service accessibility in the prison to be high. In Ibite-Olo, quite a few patients assessed service accessibility in the prison to be high; majority assessed it to be low. In Oji-River, most of the patients assessed healthcare service accessibility in the prison to be high. For overall accessibility, there were significant differences amongst the prisons; high accessibility of the services was associated most to Oji-River prison and least to Ibite-Olo prison. For the coefficients of age, length of jail service and educational qualification, the Wald statistic revealed no significance. This implies that holding other variables constant, the patients grouped by their different age groups had the same odds of assessing service accessibility to be high; likewise when grouped by length of jail service and educational level.

### **Recommendations**

Comparisons on health services accessibility amongst the prisons showed that there were significant differences amongst them. In emergency 24 hours clinic, referral services and getting adequate amount of drugs, significant accessibility differences amongst the prisons exists and was highest in Oji River and least in Ibite-Olo. For contacting of provider when absent, there was likewise a significant accessibility difference amongst the prisons; accessibility was highest in Oji-River prison and least in Enugu prison. For in-patient clinic with bed facility, pharmacy and laboratory services, there were also significant accessibility differences amongst the prisons; however, accessibility was highest in Enugu prison and least in Ibite-Olo prison. For overall accessibility, there were significant differences amongst the prisons; high accessibility of the services was associated most to Oji-River prison and least to Ibite-Olo prison. These differences on the accessibility of healthcare services reported amongst the prisons are of major concern especially when directives and coordination of prison healthcare services are provided from the same source---headquarters in Abuja. These problems could be reduced to the barest minimum if powers on availability of healthcare services and management are devolved to local prison authorities. More so, more budgetary allocations to prison healthcare services will be a good idea.

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