

Assessing Communication Effectiveness between Patient-Inmates and Healthcare Providers in Enhancing Health Services Delivery: Perspectives of Patient-Inmates in Three Prisons

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Abstract

Effective communication between patients and healthcare providers is of a primary concern in today's healthcare delivery as it helps in the therapeutic understanding of diseases, diagnosis and eventual cure as both parties are aided and encouraged to talk openly to each other to unravel and understand the mystery of the health condition(s) before them. Research on communication effectiveness between patients and providers have often been done in hospitals but not in prison health facilities which in effect prompted this project. The study which was cross-sectional, was centred at three prisons in—Enugu, Oji River and Ibite-Olo facilities all in Enugu State of Nigeria and was directed at ascertaining the effectiveness of communication between prison patient-inmates and healthcare providers in the facilities to enhancing health services delivery. In all, one hundred and fifty (150) prison inmates as patients took part in the survey. Both descriptive and inferential statistics were used in the analysis of the work. The descriptive statistics--frequency and percentage were used to summarize the items on demography of the prison patient inmates and items on assessment of effective communication between patients and providers respectively. The overall assessment of effectiveness in communication between patients and providers for the different prisons and all prisons put together shows that in Enugu prison and Oji River prison, effectiveness of communication was assessed to be significantly above average while in Ibite-Olo prison, it was assessed not significant. The overall assessment of effectiveness in communication using predictive variables like age, education, sex and length of jail service showed no significant assessment difference within and between all the prisons meaning they were same.

Key words: *Communication effectiveness, prisons, patient-inmates, healthcare providers, healthcare delivery, Enugu State, Nigeria*

Background

Effective communication between patients and healthcare providers is of a primary concern in today's healthcare as it has the ability of enhancing the therapeutic understanding of both the patient and the provider for their ultimate benefits especially for the patient. It also holds the key to proper disease diagnosis and possible cure for patients. However, to remain effective, communication between both parties must remain a two-way exchange (Klein, 2005). The manner in which the nurse, physician or therapist communicates with his patient has an effect on how care is perceived. The relationship between the healthcare provider and the patient is influenced by how they interact with each other (Siedel, 2004; Klein, 2005). This interaction is affected by many factors including the volume of pertinent information exchanged, the clarity of the information, the interest displayed by both parties and the tone of the exchange to mention but a few (Klein, 2005). Studies based on information exchange and communication between patients and providers have often taken place in hospitals especially in African context not in prison settings which in essence justified the reason for this study. Appropriate communication skills can help the nurse, physician or the therapist to identify patient's health problems more accurately paving the way for proper diagnosis. Ineffective communication has become such a major concern in today's healthcare as it may lead to suboptimal patient health outcomes (Walter et al; 2005; Klein, 2005). According to World Health Organisation (WHO, 2014), Regional office for Europe, healthcare providers in prison must work and communicate to engage prisoner patients in regards to ensuring that the patient understands the state has a special duty of care for those in places of detention, services provided must be the same standard as those available in the community (principle of equivalence), the duty of care placed on professional staff is the same whether the patient is at liberty or in prison, the prisoner as patient has the right to confidentiality and to treatment and care that is subject to informed consent and that the prisoner should be made aware of the importance of initial health screening and evaluation which must be recognized and that the best possible service should be provided (WHO, 2014). Others are that continuity of care is a crucial element of a sustainable prison health service and services should be continued upon release to the community and finally prison health services should not be isolated but should be integrated into regional and national health systems (WHO, 2014). Prison medical care requires access to fully trained doctors and nurses with supply of modern medicines and appropriate facilities, such as consultation rooms, treatment rooms and short-stay beds with some nursing supervision (WHO, 2014). The initial health screening is recognized as an extremely important phase in prison health. It ensures that a good assessment of the health status of the prisoner and other needs are noted so that a personalized treatment and care programme can be established with the health team and others and also prison health must provide prompt access to an appropriate level of care as at when needed (WHO, 2014). The prison health services must also have good access to specialist and diagnostic health services, including hospitals, since prison hospitals are often unable to meet the standards of hospitals serving the population outside and finally health care staff must deal with prisoners primarily as patients and not prisoners (WHO, 2014). Continuing, (WHO, 2014) recommends that the results of medical examinations and tests undertaken in prison with the patient's consent as part of clinical care must be treated with the same respect for confidentiality as in the general medical practice. Results of researched studies on effective communication between providers and patients provided the following results.

Results on effective patient-physician communications and its effects report that the quality of communication in the history-taking influenced patient outcomes in the positive in emotional health; symptom resolution; function; pain control; and physiologic measures, such as blood pressure level or blood sugar level (Stewart, 1995). It was found that patient anxiety was reduced in patients whose physicians encouraged questions and also encouraged them to share in the decision-making process. Effective communication skills was found correlated to such positive outcomes as adherence to therapy (Travaline et al., 2005; Bull et al., 2001; Ciechanowski et al., 2001) understanding of treatment risks (Travaline et al., 2005; Bogardus et al., 1999) and in some settings even to reduced risks of medical mishaps or malpractice claims (Travaline et al., 2005; Sutcliffe et al., 2004; Levinson et al., 1997). Healthcare literature reveals that ineffective or insufficient communication among team members and with patients is a significant contributing factor to adverse events in healthcare. In the acute care setting, communication failures lead to increases in patient harm, length of stay, and resource use, as well as more intense caregiver dissatisfaction and more rapid turnover (Zwarenstein et al., 2002; Fagin, 1997; Fisher et al., 1993; Kendrick, 1995). Studies have found that the level of effective communication in healthcare settings has direct impact on the quality of patient's health recovery process and care satisfaction in the health care settings. They also show that there is possibility that nurse's poor communication skills have been a leading factor in wrong administration of medications to patients which have in some cases lead to death (Opeyemi Bello, 2017). Further evidence was gotten that, the recurrence revisit of patient to the hospital can be linked to lack of effective communication of health care providers and effective communication was found to enhance patient's medication adherence, safety, care satisfaction and nurses' job satisfaction. (Opeyemi Bello, 2017).

We have reviewed the literature with limited success on communication effectiveness between patients and providers in enhancing and promoting healthcare delivery in the prisons especially in the African context. This lack of researched information on this subject matter has therefore prompted this project.

Materials and Methods

Study area

The study area for this research is Enugu state located in South-east Nigeria. Enugu state is among the 36 states in the Federal Republic of Nigeria. The population of the state is about 3.3 million people (2006 census) 95% of who are of the Igbo tribe/extraction. Approximately 59% of the population is of rural dwellers (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 (SMOH, Enugu State, 2001).

Study population and protocol

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 effectiveness of communication between prison patient-inmates and healthcare providers in the prison. Application requesting for approval to conduct the research was made through the comptroller of prisons here in Enugu State to the national comptroller of prisons Abuja, Nigeria. The approval cleared the way for the commencement of work. All the partaking prisoners/patients consented to the study verbally which was carried out in the middle part of 2016. The prisons' staff contacted all the affected

prisoners/patients and central areas within the prisons were organized for the questionnaire administration. The prisoners were released in batches to the central areas at the three sites for easy control and handling. In all, one hundred and fifty (150) prison inmates as patients took part in the survey with about ten percent of them (15 prisoners) who qualified as respondents refusing to partake in the study. The prison healthcare services are organized and operated by the Nigerian prisons authority and the professional healthcare personnel as managers and healthcare providers respectively. Patients will at times consult with non-prison employed healthcare providers within and outside the prison walls when so needed and referred. Patients requiring serious medical attention were admitted to the general population hospitals and those with psychotic disorders are treated in psychiatric hospitals.

Data collection procedure

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.

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.

Method of Data Analysis

Both descriptive and inferential statistics were used in the analysis of the work. The descriptive statistics--frequency and percentage were used to summarize the items on demography of the prison patients and items on assessment of effective communication between patients and providers respectively. The inferential statistics- One Sample Sign Test, Mann-Whitney U Test and Kruskal-Wallis H Test were used. These statistics were used due normality assumption violation of data. The assessment score used for these tests were generated by summing the responses on the items on assessment accordingly. The expected average (47.5) for the One Sample Sign Test is sum of midpoints (2.5) for 19 items. A logistic regression was also performed on the data. The demographic data and the prison served as the predictors while the assessment score categorized into binary variable served a predicted variable. Statistical decisions were made at 5% level of significance while the statistics were done using the IBM SPSS version 20 and Minitab 11.12.

Table 1: Socio-demographic Data of the Inmates

		Individual Prisons			All Prisons
		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)
Occupation	Student	33(36.7)	2(10.5)	12(33.3)	47(32.4)
	Govt. employee	13(14.4)	2(10.5)	2(5.6)	17(11.7)
	Trading	18(20.0)	4(21.1)	9(25.0)	31(21.4)
	Self employed	22(24.4)	5(26.3)	9(25.0)	36(24.8)
	Unemployed	2(2.2)	6(31.6)	3(8.3)	11(7.6)
	Others	2(2.2)	0(0.0)	1(2.8)	3(2.1)
	Total	90(100.0)	19(100.0)	36(100.0)	145(100.0)

Table 1 displays the demographic data of the prison inmates. In age, majority of the inmates was between 21-30 years: Enugu prison (47.8%), Ibite-Olo prison (66.7%) and Oji River prison (45.9%) and all the prisons put together (50.0%). Males were predominant in Enugu prison (84.6%), Ibite-Olo prison (100.0%) and Oji River prison (100.0%), and in all the prisons put together (90.5%). In length of jail service, Enugu prison (35.9%) and Ibite-Olo prison (52.6%), and all the prisons put together (34.5%) had more inmates that have served 7 months – 2 years while Oji River prison had more of those that have served 3-7 years (51.4%). Inmates with secondary education were predominant in Enugu prison (53.4%) and Ibite-Olo prison (52.4%), and all the prisons put together (49.3%) while those with tertiary education were predominant in Oji River (51.4%). In Enugu prison (36.7%) and Oji River prison (33.3%) and all the prisons put together (32.4%), students were most while in Ibite-Olo prison, the unemployed were most (31.6%).

Table 2: Assessment of Effective Communication between Patients and Providers

Areas of communication assessed	Individual prisons			All prison
	Enugu	Ibite-Olo	Oji River	
Provider properly identified, addressed users by their names	3.20±0.95	2.95±1.32	3.32±0.91	3.20±1.00

Provider identified him/her self-including his/her credentials that prepares him/her for the service to be performed	2.45±1.10*	1.70±1.17*	3.17±0.97	2.53±1.16
Provider was able to communicate to users understanding some of users' expectations before the procedure	3.03±1.03	2.70±1.30	3.00±0.91	2.98±1.04
Provider was able to effectively pass information, advice, instruction and professional opinion to service users	3.15±0.95	2.43±1.33*	3.22±0.92	3.06±1.03
Provider was able together with the user to assess the users' needs through interrogation of health history in order to determine the precise nature of service to be provided	2.95±1.09	2.19±1.21*	3.03±1.07	2.86±1.13
Provider was able to communicate with user on the likely error(s) that may result from the care process	2.92±1.11	2.19±1.21*	2.76±1.01	2.77±1.12
Users were encouraged by the provider to ask necessary questions regarding his/her care	3.18±1.03	2.62±1.32	3.11±1.07	3.08±1.09
Users were provided with the right instruction(s) before care, during care and post care meant to enable proper and adequate benefits from the care process	2.94±1.13	2.33±1.28*	3.00±0.97	2.87±1.13
Users were given adequate information on post treatment care	2.84±1.05	2.38±1.16*	2.61±1.05	2.72±1.07
Provider answered users' questions on the care process promptly	3.05±0.99	2.76±1.37	3.14±1.00	3.03±1.06
Proper history on users' medical and health conditions were taken prior to the care session(s)	2.80±1.16	2.10±1.25*	2.54±1.07	2.63±1.17
Users were communicated with appropriate level of respect and civility before, during and after care experiences	2.80±1.12	2.90±1.26	2.59±1.07	2.76±1.12
Users were communicated compassionately and with empathy before, during and after care experiences	2.76±1.07	2.90±1.33	3.05±0.97	2.86±1.08
Users were educated on the possible outcomes and consequences of the care process before undergoing procedure	3.08±0.91	2.80±1.15	2.73±0.90	2.95±0.95

Users were carried along in an open and passionate manner in the discussions to, during and after care experience	2.84±1.08	2.32±1.29*	2.73±1.10	2.74±1.12
Users were provided with all the information on the procedure(s) and all the instructions on how to complete care successfully	2.92±1.09	2.75±1.29	2.95±1.08	2.91±1.11
Provider was attentive and listened to users carefully before, during and after care experience	3.05±1.02	3.24±1.09	3.14±0.82	3.10±0.98
Users non-verbal cues like facial expression were explored by the provider in the process of the care	2.74±1.13	2.38±1.12*	2.72±1.11	2.68±1.12
Provider was pleasant and well spoken with soft skills like calling users by name, using please and thank you in care process	2.69±1.20	3.20±1.15	2.97±1.14	2.83±1.19

* implies communication areas assessed below average, 2.5 (not effective)

Table 2 displays the prison patients' assessment of the effectiveness of communication between the healthcare providers and themselves as users of healthcare services. In Enugu prison, there was effectiveness in all the listed communication areas except that providers did not fare well in identifying themselves including their credentials that prepare them for the service(s) to be performed (2.45±1.10). Areas of communication assessed to be highly effective include: provider properly identifying and addressing users by their names (3.20±0.95), users being encouraged by the provider to ask necessary questions regarding his/her care (3.18±1.03), provider being able to effectively pass information, advice, instruction and professional opinion to service users (3.15±0.95), users being educated on the possible outcomes and consequences of the care process before undergoing procedure (3.08±0.91), provider being attentive and listening to users carefully before, during and after care experience (3.05±1.02), provider answering users' questions on the care process promptly (3.05±0.99) and provider being able to communicate to users understanding some of the users expectations before the procedure (3.03±1.03).

In Ibite-Olo prison, there was no effective communication in the following areas: provider being able to effectively pass information, advice, instruction and professional opinion to service users (2.43±1.33), users being given adequate information on post treatment care (2.38±1.16), users non-verbal cues like facial expression being explored by the provider in the process of the care (2.38±1.12), users being provided with the right instruction(s) before care, during care and post care meant to enable proper and adequate benefits from the care process (2.33±1.28), users being carried along in an open and passionate manner in the discussions to, during and after care experience (2.32±1.29), provider being able together with the user to assess the users' needs through interrogation of health history in order to determine the precise nature of service to be provided (2.19±1.21), provider being able to communicate with user on the likely error(s) that may result from the care process (2.19±1.21), proper history on users' medical and health conditions taken prior to the care session(s) (2.10±1.25) and provider identifying him/her self-including his/her credentials that prepares him/her for the service to be performed (1.70±1.17). There was

effectiveness in the other areas of communication of which provider being attentive and listening to users carefully before, during and after care experience (3.24±1.09) and provider being pleasant and well-spoken with soft skills like calling users by name, using “please” and “thank you” in care process (3.20±1.15) were most highly.

In Oji River prison, there was effectiveness in all the listed areas of communication. However, the areas that were more highly include: provider properly identifying and addressing users by their names (3.32±0.91), provider being able to effectively pass information, advice, instruction and professional opinion to service users (3.22±0.92), provider identifying him/her self including his/her credentials that prepares him/her for the service to be performed (3.17±0.97), provider answering users’ questions on the care process promptly (3.14±1.00), provider being attentive and listening to users carefully before, during and after care experience (3.14±0.82), users being encouraged by the provider to ask necessary questions regarding his/her care (3.11±1.07), users being communicated compassionately and with empathy before, during and after care experiences (3.05±0.97), provider being able together with the user to assess the users’ needs through interrogation of health history in order to determine the precise nature of service to be provided (3.03±1.07), users being provided with the right instruction(s) before care, during care and post care meant to enable proper and adequate benefits from the care process (3.00±0.97) and provider being able to communicate to users understanding some of users’ expectations before the procedure (3.00±0.91).

In general, for the three prisons put together, there was effective communication in all the listed areas; although communication areas such as: provider properly identifying and addressing users by their names (3.20±1.00), provider being attentive and listening to users carefully before, during and after care experience (3.10±0.98), users being encouraged by the provider to ask necessary questions regarding his/her care (3.08±1.09), provider being able to effectively pass information, advice, instruction and professional opinion to service users (3.06±1.03) and provider answering users’ questions on the care process promptly (3.03±1.06) were more highly.

Table 3: Overall Assessment of Effective Communication between Patients and Providers

Prison	n	M±SD	Median	No. below average	No. above average	p-value
Enugu	72	55.60±15.05	57.50	23	49	.003
Ibite-Olo	17	50.00±15.43	53.00	6	11	.332
Oji River	35	56.34±10.88	55.00	7	28	.001
All prisons	124	55.04±14.10	56.50	36	88	< .001

Single Signed Test computed; Expected average (midpoint) = 47.5; the sum midpoint for 19 items

Table 3 displays the overall assessment of effective communication between patients and provider for the different prisons and all prisons put together. In Enugu prison (p = .003) and Oji River prison (p = .001), effectiveness of communication was assessed to be significantly above average while in Ibite-Olo prison, it was assessed not significant (p = .332). For all prisons, the effectiveness was also significantly above average (p < .001). This implies that the effective communication between patients and provider in Enugu and Oji-River prison was significantly above average while that of Ibite-Olo was average.

Table 4: Effective Communication Assessment Comparison between Prisons

Prisons	n	M±SD	Mean Rank	df	H	p-value
Enugu	74	55.60±15.05	63.75	2	1.328	.515
Ibite-Olo	17	50.00±15.43	53.21			
Oji River	35	56.34±10.88	64.44			

Kruskal-Wallis (H) Test computed

Table 4 displays the comparison between prisons on effective communication assessment. Oji-River prison had highest mean rank assessment score (64.44), followed by Enugu prison (63.75) while that of Ibite-Olo prison was least (53.21). The comparison, however revealed no significant difference between the prisons, $p = .515$. This implies that effective communication level in the three prisons was the same.

Table 5: Effective Communication Assessment Comparison between Age Groups

		n	Mean	Mean Rank	df	H	p-value
Enugu	≤ 20 years	5	57.20±18.62	36.30	4	4.016	.404
	21-30 years	34	57.79±14.61	38.90			
	31-40 years	19	52.00±13.31	30.16			
	41-50 years	8	58.00±16.45	39.38			
	51+ years	4	46.50±19.33	23.25			
Ibite-Olo	≤ 20 years	3	53.33±30.24	11.33	2	1.903	.386
	21-30 years	12	47.50±12.30	7.92			
	31-40 years	2	60.00±2.83	12.00			
Oji River	≤ 20 years	2	59.50±4.95	23.00	4	2.225	.695
	21-30 years	16	56.25±9.20	18.03			
	31-40 years	13	58.08±13.83	19.08			
	41-50 years	2	46.50±12.02	9.75			
	51+ years	2	52.50±3.54	14.00			
All prisons	≤ 20 years	10	56.50±19.12	68.90	4	2.241	.692
	21-30 years	62	55.40±13.39	62.48			
	31-40 years	34	54.79±13.30	60.54			
	41-50 years	10	55.70±15.81	62.60			
	51+ years	6	48.50±15.37	42.58			

Kruskal-Wallis (H) Test computed

Table 5 displays the comparison between age groups on effective communication assessment. In Enugu prison ($p = .404$), Ibite-Olo prison ($p = .386$) and Oji River prison ($p = .695$), there was no significant assessment difference between groups, and likewise for all prisons ($p = .692$). This implies that the assessment on effective communication between patients and provider was the same for the different age groups.

Table 6: Effective Communication Assessment Comparison between Sex Groups

		n	Mean	Mean Rank	U	Z	p-value
Enugu	Male	57	53.67±14.51	32.43	195.5	-2.647	.008
	Female	13	66.08±13.80	48.96			
Ibite-Olo	Male	17	50.00±15.43	-	-	-	-
	Female	0	-	-	-	-	-
Oji River	Male	35	56.34±10.88	-	-	-	-
	Female	0	-	-	-	-	-
All prisons	Male	109	53.95±13.64	58.50	381.0	-2.719	.007
	Female	13	66.08±13.80	86.69			

Mann-Whitney (U) Test computed

Table 6 displays the comparison between sex groups on effective communication assessment. Ibite-Olo and Oji River had no female patient participant. In Enugu prison, there was significant assessment difference between males and females ($p = .008$), and likewise for all prisons ($p = .007$). This implies that the assessment on effective communication between patients and provider was not the same for male and female patients. The mean rank indicated that females assessed the communication to be more effective than males.

Table 7: Effective Communication Assessment Comparison between Patients Grouped by Length of Jail Service

		n	Mean	Mean Rank	df	H	p-value
Enugu	≤ 6 mths	23	57.17±16.54	38.43	3	2.821	.420
	7 mths - 2 yrs	25	57.40±11.03	38.40			
	3-7 yrs	19	49.68±17.49	29.21			
	8+ yrs	4	58.50±12.01	39.25			
Ibite-Olo	≤ 6 mths	3	53.67±22.01	9.50	2	.189	.910
	7 mths - 2 yrs	8	48.00±14.26	8.44			
	3-7 yrs	5	48.60±17.24	8.00			
Oji River	≤ 6 mths	10	58.80±11.25	19.35	2	.406	.816
	7 mths - 2 yrs	7	56.86±12.01	18.79			
	3-7 yrs	18	54.78±10.62	16.94			
All prisons	≤ 6 mths	36	57.33±15.30	66.85	3	2.738	.434
	7 mths - 2 yrs	40	55.43±12.15	63.34			
	3-7 yrs	42	51.74±14.74	54.50			
	8+ yrs	4	58.50±12.01	68.50			

Kruskal-Wallis (H) Test computed

Table 7 displays the effective communication assessment comparison between patients grouped by the length of jail service. In Enugu ($p = .420$), Ibite-Olo ($p = .910$) and Oji River ($p = .816$) prison, there was no significant assessment difference between groups, and likewise for all prisons ($p = .434$). This implies that the assessment on effective communication between patients and provider by the patients grouped by their length of jail service was the same.

Table 8: Effective Communication Assessment Comparison between Educational Levels

		n	Mean	Mean Rank	df	H	p-value
Enugu	Primary	4	53.00±15.19	31.38	2	.167	.920
	Secondary	36	55.06±15.87	34.85			
	Tertiary	29	55.66±14.74	35.69			
Ibite-Olo	No school	3	52.33±29.70	10.67	2	.402	.818
	Primary	4	50.00±14.09	8.50			
	Secondary	10	49.30±12.59	8.70			
Oji River	Primary	4	47.25±6.40	8.88	2	3.748	.153
	Secondary	13	57.00±11.47	18.31			
	Tertiary	18	57.89±10.70	19.81			
All prisons	No school	3	52.33±29.70	67.50	3	2.627	.453
	Primary	12	50.08±11.59	47.13			
	Secondary	59	54.51±14.49	60.29			
	Tertiary	47	56.51±13.26	65.02			

Kruskal-Wallis (H) Test computed

Table 8 displays the comparison made by patients grouped by their educational levels on effective communication assessment. In Enugu ($p = .920$), Ibite-Olo ($p = .818$) and Oji River ($p = .153$) prison, no significant assessment difference existed between levels. For all prisons put together, there was likewise no significant assessment difference between levels, ($p = .453$). This implies that the patients of different educational levels had the same assessment on effective communication between patients and provider.

Table 9: Effective Communication Assessment Comparison between Occupational Groups

		n	Mean	Mean Rank	df	H	p-value
Enugu	Student	26	59.54±14.28	39.21	3	3.092	.378
	Govt. employee	10	51.90±17.18	30.35			
	Trading	14	56.36±14.75	35.14			
	Self employed	18	51.50±15.53	29.50			
Ibite-Olo	Student	2	64.00±16.97	12.00	4	7.824	.098
	Govt. employee	2	61.50±2.12	13.25			
	Trading	3	52.00±12.17	9.17			
	Self employed	5	49.60±13.78	8.90			
	Unemployed	4	33.25±13.23	3.38			

Oji River	Student	12	57.92±9.27	18.33	4	.363	.985
	Govt. employee	2	58.00±24.04	16.50			
	Trading	8	55.63±11.01	16.31			
	Self employed	8	56.38±12.48	16.19			
	Unemployed	3	55.00±5.00	16.00			
All prisons	Student	40	59.28±12.81	68.86	4	8.516	.074
	Govt. employee	14	54.14±16.23	58.93			
	Trading	25	55.60±12.94	60.96			
	Self employed	31	52.45±14.29	53.00			
	Unemployed	8	43.75±14.46	34.31			

Kruskal-Wallis (H) Test computed

Table 9 displays the comparison made by patients grouped by their occupational groups on effective communication assessment. In Enugu ($p = .378$), Ibite-Olo ($p = .098$), Oji River ($p = .985$) prison, no significant assessment difference existed between groups, and likewise for all prisons ($p = .074$). This implies that patients by their different occupational groups had the same assessment on effective communication between patients and provider.

Table 10a: Logistic Regression Classification Table, Model Summary and Omnibus Test of Model Coefficients on Assessment of Effective Communication between Patients and Providers

		Classification Table			Model Summary			Omnibus Test of Model Coefficients		
		Communication assessment		% Correct	-2 Log likelihood	Cox & Snell R ²	Nagelkerke R ²	χ^2	df	p
		Not effective	Effective							
Communication assessment	Not effective	9	30	23.1	141.352	.140	.200	20.275	17	.260
	Effective	8	87	91.6						
Overall %				71.6						

The cut value is .500

Table 10b: Logistic Regression Model Coefficients on Assessment of Effective Communication between Patients and Providers

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Prison			3.515	2	.172			
Ibite-Olo	.293	.696	.177	1	.674	1.341	.342	5.249
Oji River	1.072	.572	3.513	1	.061	2.922	.952	8.965

Age			.925	4	.921			
≤ 20 years	-.197	1.661	.014	1	.905	.821	.032	21.274
21-30 years	-.723	1.084	.445	1	.505	.485	.058	4.058
31-40 years	-.742	1.013	.536	1	.464	.476	.065	3.467
41-50 years	-.353	1.172	.091	1	.763	.703	.071	6.991
Sex	1.765	1.117	2.499	1	.114	5.843	.655	52.125
Length of jail service			1.863	3	.601			
7mths – 2 years	-.622	.598	1.080	1	.299	.537	.166	1.735
3 – 7 years	-.775	.629	1.519	1	.218	.461	.134	1.580
8+ years	-.111	1.078	.011	1	.918	.895	.108	7.397
Education level			.761	3	.859			
Primary	1.624	2.072	.614	1	.433	5.072	.087	294.379
Secondary	1.529	2.085	.537	1	.464	4.612	.077	274.809
Tertiary	1.770	2.168	.666	1	.414	5.868	.084	411.021
Occupation			7.577	4	.108			
Govt. employee	-1.496	.748	3.998	1	.046	.224	.052	.971
Trader	-.630	.741	.721	1	.396	.533	.125	2.278
Self employed	-1.519	.631	5.798	1	.016	.219	.064	.754
Unemployed	-1.145	.961	1.420	1	.233	.318	.048	2.092
Constant	.864	2.446	.125	1	.724	2.372		

Assessment Score > 47.5 (expected average) implies communication was assessed effective; otherwise was assessed not effective Predictors: Prison, Age, Sex, Length of jail service, Educational level & Occupation.

Reference category: Prison (Enugu), Age (51+ years), Sex (Male), Length of jail service (≤ 6months), Education (No school), Occupation (Student)

Table 10a & b displays a logistic regression on the assessment of effective communication between patients and provider. The logistic regression model (logit (assessing the communication level to be effective) = $0.864 + 0.293*(\text{Ibite-Olo prison}) + 1.072*(\text{Oji River prison}) - 0.197*(\leq 20 \text{ years}) - 0.723*(21-30 \text{ years}) - 0.742*(31-40 \text{ years}) - 0.353*(41-50 \text{ years}) + 1.765*(\text{gender}) - 0.622*(7\text{months}-2\text{years}) - 0.775*(3-7 \text{ years}) - 0.111*(8+ \text{ years}) + 1.624*(\text{primary}) + 1.529*(\text{secondary}) + 1.770*(\text{tertiary}) - 1.496*(\text{government employee}) - 0.630*(\text{trading}) - 1.519*(\text{self employed}) - 1.145*(\text{unemployed})$) explained 20.0% (Nagelkerke R^2) of the variation in assessment of effective communication (that is, whether effective or not effective). It also correctly predicted the assessment of 71.6% of the patients. The omnibus test of model coefficients using the Chi-Square, however revealed that the model coefficients were not significant, $\chi^2(17) = 20.275$, $p = .260$. To this effect, the Wald statistic further indicated that the coefficients of all the predictors were not significant: prison ($p = .172$), age ($p = .921$), sex ($p = .114$), length of jail service ($p = .601$), educational level ($p = .859$) and occupation ($p = .108$). This implies that holding other predictors constant, patients classified by their different prisons had the same odds of assessing the communication between patients and provider to be effective; likewise, when classified by their age, sex, length of jail service, educational level and occupation.

Discussion

The prison patients' assessment of the effectiveness of communication between healthcare providers and themselves as users of healthcare services in enhancing health outcome shows that in Enugu prison, there was effectiveness in all the listed communication areas except that providers did not fare well in identifying themselves including their credentials that prepare them for the service(s) to be performed. Areas of communication assessed to be highly effective include: provider properly identifying and addressing users by their names, users being encouraged by the provider to ask necessary questions regarding his/her care, provider being able to effectively pass information, advice, instruction and professional opinion to service users, users being educated on the possible outcomes and consequences of the care process before undergoing procedure, provider being attentive and listening to users carefully before, during and after care experience, provider answering users' questions on the care process promptly and provider being able to communicate to users understanding some of the users expectations before the procedure. Part of the above results reflect the policy statements of the (WHO, 2014) where it was said that prison medical care requires access to fully trained doctors and nurses with supply of modern medicines and appropriate facilities, such as consultation rooms, treatment rooms and short-stay beds with some nursing supervision (WHO, 2014). This is because only fully trained health professionals could be able to effectuate the conditions as shown above.

In Ibite-Olo prison, there was no effective communication in the following areas: provider being able to effectively pass information, advice, instruction and professional opinion to service users, users being given adequate information on post treatment care, users non-verbal cues like facial expression being explored by the provider in the process of the care, users being provided with the right instruction(s) before care, during care and post care meant to enable proper and adequate benefits from the care process, users being carried along in an open and passionate manner in the discussions to, during and after care experience, provider being able together with the user to assess the users' needs through interrogation of health history in order to determine the precise nature of service to be provided, provider being able to communicate with user on the likely error(s) that may result from the care process, proper history on users' medical and health conditions taken prior to the care session(s) and provider identifying him/her self-including his/her credentials that prepares him/her for the service to be performed. There was effectiveness in the other areas of communication of which provider being attentive and listening to users carefully before, during and after care experience and provider being pleasant and well-spoken with soft skills like calling users by name, using "please" and "thank you" in care process were most highly. Care givers in Ibite-Olo prison were very much irresponsive to the health caring needs of the prison patient-inmates that made health services unbearable to them and would require series of reforms according to the (WHO, 2014) to be made bearable. Especially, is the issue of the health services being integrated into regional and national health systems (WHO, 2014)

In Oji River prison, there was effectiveness in all the listed areas of communication. However, the areas that were more highly include: provider properly identifying and addressing users by their names, provider being able to effectively pass information, advice, instruction and professional opinion to service users, provider identifying him/her self-including his/her credentials that prepares him/her for the service to be performed, provider answering users' questions on the care process promptly, provider being attentive and listening to users carefully before, during and after care experience, users being encouraged by the provider to ask necessary questions regarding

his/her care, users being communicated compassionately and with empathy before, during and after care experiences, provider being able together with the user to assess the users' needs through interrogation of health history in order to determine the precise nature of service to be provided, users being provided with the right instruction(s) before care, during care and post care meant to enable proper and adequate benefits from the care process and provider being able to communicate to users understanding some of users' expectations before the procedure. Part of the above results reflect the policy statements of the (WHO, 2014) as in Enugu prison where it was said that prison medical care requires access to fully trained doctors and nurses with supply of modern medicines and appropriate facilities to effectuate the type of results a above.

In general, for the three prisons put together, there was effective communication in all the listed areas; although communication areas such as: provider properly identifying and addressing users by their names, provider being attentive and listening to users carefully before, during and after care experience, users being encouraged by the provider to ask necessary questions regarding his/her care, provider being able to effectively pass information, advice, instruction and professional opinion to service users and provider answering users' questions on the care process promptly were more highly.

The overall assessment of effective communication between patients and providers for the different prisons and all prisons put together shows that in Enugu prison and Oji River prison, effectiveness in communication was assessed to be significantly above average while in Ibite-Olo prison, it was assessed not significant. The comparison between prisons on effective communication assessment shows that Oji-River prison had highest mean rank assessment score followed by Enugu prison while that of Ibite-Olo prison was least. The comparison between age groups on effective communication assessment shows that in Enugu prison, Ibite-Olo prison and Oji River prison, there was no significant assessment difference between age groups, and likewise for all prisons. This implies that the assessment on effective communication between patients and provider was the same for the different age groups. The comparison between sex groups on effective communication assessment shows that Ibite-Olo and Oji River had no female patient participant. In Enugu prison, there was significant assessment difference between males and females, and likewise for all prisons. This implies that the assessment on effective communication between patients and provider was not the same for male and female patients. The effective communication assessment comparison between patients grouped by the length of jail service shows that in Enugu, Ibite-Olo and Oji River prisons, there was no significant assessment difference between groups, and likewise for all prisons. This implies that the assessment on effective communication between patients and provider by the patients grouped by their length of jail service was the same. The comparison made by patients grouped by their educational levels on effective communication assessment shows that in Enugu, Ibite-Olo and Oji River prisons, no significant assessment difference existed between levels. For all prisons put together, there was likewise no significant assessment difference between levels. The comparison made by patients grouped by their occupational groups on effective communication assessment shows that in Enugu, Ibite-Olo, Oji River prisons, no significant assessment difference existed between groups, and likewise for all prisons put together. Further, various predictor models showed no significant relationship between effective communication and the predictor variables used. The omnibus test of model coefficients using the Chi-Square revealed that the model coefficients were not significant. To this effect, the Wald statistic further indicated that the coefficients of all the

predictors were not significant using prison, age, sex, length of jail service, educational level and occupation. These results especially on the predictive values do confirm earlier results.

Conclusion

Communication effectiveness was highly assessed and significantly also in both Orji River and Enugu facilities but not in Ibite-Olo facility. Though with this impressive result, there remain few areas within all the facilities that were poorly assessed and would require some efforts to improve. The overall assessment of effectiveness in communication using predictive variables like age, education, sex and length of jail service showed no significant communication assessment difference amongst all the prisons meaning all the prisons equally assessed communication effectiveness between patients and providers the same.

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