Interpersonal Communication Training of Anti-Retroviral Therapy Providers Promotes Patients' Satisfaction: A Case Study of Public Hospitals in Gombe State, Nigeria

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Abstract

Interpersonal Communication (IPC) between healthcare practitioners and patients enhances client satisfaction, adherence, and health outcomes. In developed countries, effective IPC improves health, but little is known about Nigeria. Using a quasi-experimental approach, this study investigated the influence of interpersonal communication training for ART practitioners on patient satisfaction in Gombe state public ART hospitals. The study looked at clients' satisfaction before and after IPC training for ART providers. Six public ART hospitals were chosen at random; three were assigned to intervention and control groups, respectively, and 250 HIV patients receiving treatment at these facilities were chosen at random; 125 from each of the three intervention and control facilities. At both the intervention and control locations, levels of satisfaction were evaluated both before and six weeks after IPC training. The data were obtained using a Patient Satisfaction Questionnaire (PSQ), and the reliability of the questionnaire was determined using the Cronbach Alpha test (0.76). For data analysis, SPSS 22 was used. Findings revealed that, 42.4% of the clients had been living with HIV for 1-5 years and the mean client satisfaction score with their providers' IPC training was 87.5 in the intervention group and 76.45 in the control group (P = 0.05) while, the mean difference before and after training in the intervention and control groups were 0.46 and 11.05, respectively and a p-value 0.000 was obtained. Therefore, there was a positive association between higher client satisfaction with ART services and training of ART providers on IPC. It is recommended that ART facilities should receive IPC training on a regular basis.

Keywords: *Anti-retroviral, Client-satisfaction, HIV/AIDS, Health-Personnel, Therapy.*

Introduction

The realization that client satisfaction is as important to the clinical outcome as the technical content of care (adherence to treatment protocols and guidelines) has led to a growing interest in the Clients Satisfaction Survey (CSS) not only for HIV/AIDS, but for all health conditions, particularly chronic illness with public health significance [1]. Patient satisfaction is an important part of the success of any healthcare service, but it is especially important in the ART programme, which helps thousands of HIV patients live longer and healthier lives [2]. If patients are dissatisfied with the quality of care they receive, adherence is significantly impacted, and attrition is frequently rather high, rendering the technical quality of the service almost useless [3].

This has extensive implications for the public's health. Successful treatment of

HIV/AIDS depends largely on patients' adherence to the treatment regimen, avoidance of risky behaviours that drive the HIV/AIDS epidemic and participation of People Living with HIV and AIDS (PLWHAs) in the planning and implementation of the programme [4]. Poor adherence is associated with poorer clinical outcomes and the risk of developing drug resistance. A few studies have sought to understand the determinants of ART adherence and retention by identifying associated factors, one of which is poor patient-physician relationships [3-5].

Interpersonal communication (IPC) skill is one aspect of the patient-physician relationship, which is effective in establishing an effective relationship between doctor and patient and plays a very important role in ensuring the satisfaction and trustfulness of patients to their doctors [6].

Thus, health-care administrators emphasize training and promoting the communication skills of physicians. In fact, the communication skills of physicians are considered core skills of health-caring service [5-6]. IPC in healthcare delivery points, denotes a one-on-one approach to information and feelings sharing between healthcare providers and clients. Each time a healthcare service provider meets with a client, interpersonal communication occurs [6]. IPC skill of a healthcare provider is an essential component of healthcare delivery and has proved to be crucial to successful treatment because it reveals the healthcare providers' understanding of the patient's diagnostic and treatment procedures, and hence guides patients' enlightenment, understanding the level of disease, treatment choice, and winning their trust and confidence in the health services [7-8]. The impact of IPC on healthcare delivery, particularly on the interaction between healthcare personnel and patients, is of the utmost importance and has not been thoroughly researched, particularly in developing countries such as Nigeria [9]. High-income country research indicated that IPC provider training could increase Interpersonal communication skills, which are associated with patient satisfaction and medication adherence. Despite the potential improvements in patient retention and adherence, few systematic Studies have been done to increase IPC among chronic care practitioners in Sub-Saharan Africa [9]. HIV treatment programs focus mainly on increasing access to services, with less emphasis on guaranteeing the quality of those services particularly client satisfaction surveys [10].

Because HIV care is a lifetime interaction, it is critical to acquire clients' trust as early as possible. A relationship built on trust leads to long-term and better outcomes, while the repercussions of failing to do so are severe. Furthermore, trust and rapport-based connections contribute to better care experiences and reduce anxiety and suffering and increase patients' engagement in care decisions [9-10]. In the healthcare system, IPC is a significant therapeutic technique that establishes fundamental connections that benefit those involved in healthcare delivery activities [11]. The importance of IPC skills in healthcare delivery has grown over the past decade and a half years [9]. One of the aspects highlighted as strongly contributing to effective healthcare delivery is the IPC dynamic of the provider-client interaction. The contribution of skilled IPC by healthcare personnel to the success of treatment regimes, and current best practices [11]. However, certain areas of IPC inadequacy have been recognized and theorized, including, among others, a lack of capacity development, stigma, insufficient information, a lack of experienced professionals, and a lack of relational work coordination Issues concerning IPC effectiveness in healthcare delivery [4, 8], especially on the relationship between healthcare providers and clients is of utmost importance and was not investigated broadly, especially in Nigeria [9].

The issues of HIV care retention and adherence are growing more concerning in Gombe State, Nigeria, as clients drop out of

treatment, with up to 35% of clients who started on ART dropping out within a year [12]. This was in addition to poor treatment adherence and rising client default rates, which the Gombe State Agency for AIDS Control reported at 7% in 2021 [12]. These could be linked to a deterioration in the provider-client relationship due to inefficient interpersonal communication. Furthermore, some data show that ART providers' poor interpersonal communication is a crucial factor associated with client unhappiness and eventual treatment drop-out [11]. As a result, examining clients' perceptions of the quality of interpersonal communication provided in ART clinics in Gombe state will aid in determining the IPC's effectiveness. Assessing the impact of IPC on ART clients has not been conducted in Gombe state. To boost and enhance clients' satisfaction with the provision of ART services by the state, providers need to develop their interpersonal contact and skills. This study aims to evaluate the impact of ART practitioners' IPC skills on patient satisfaction in Nigeria's Gombe State Nigeria.

Materials and Methods

A quasi-experimental study was conducted between July to November 2022. The study conducted a baseline assessment of clients' satisfaction with ART treatments at six selected sites (three from the control and three from the intervening facilities). It was immediately followed by training on IPC for providers at the three intervening facilities, and then a 6-week reassessment of client satisfaction was done to measure the impact of the training.

Study Area, Participants, Sample and Sampling Technique

Gombe State is one of Nigeria's 36 states, with a predicted population of 3.9 million people in 2022 and a land area of 20,265 km219 [13]. There are 615 public and private health facilities in the state, with 18 public institutions providing full ART treatments, 53 HIV counselling and testing (HCT) services, and 27 PMTCT services [13-14]. The study employed a multi-stage sampling technique. First, the state was divided into three zones based on the senatorial district. Two ART public health facilities were randomly selected from each zone in the second stage. In the third stage, one hospital was randomly assigned as the experimental hospital and the other as the control hospital for the study, yielding a total of three intervention groups (one from each region) and three control groups (one from each region). Clients who had visited the clinic at least three times and received at least three doses of anti-retroviral medication and counselling and patients who were not critically ill met the inclusion criteria. While inpatients receiving ward care, clients under 18 years of age, and patients who were very ill were excluded from the study. We estimated a minimum sample size (N) of 125 from 3 interventions LGAs and an equal size from 3 control LGAs. The estimate is based on a 95% confidence level, 80% power of detecting differences in proportions of patient's satisfaction with IPC skills of their ART providers before and after training. We applied a formula for comparison between two proportions [16].

$$N = (Z\alpha + Z\beta)2 \times \frac{P1(1 - P1) + P2(1 - P2)}{(P1 - P2)2}$$

In which Zα corresponds to the critical value of the normal distribution for a 95% confidence level (1.96), Zβ is the critical value of the normal distribution at 80% power of the study to detect the difference between the two proportions (0.84), p1 is the estimated proportion (22%) of patient's satisfaction with interpersonal communication of ART providers from a similar study [[17]]. The second proportion, p2 was used based on the hypothesis of 30% increase after the training on IPC. We further adjusted for a possible non-participation rate of 20%, yielding

the final minimum sample of 125 adults per group. The sample size was then proportionally dispersed based on the number of ART clients in each of the six sites chosen.

Intervention

The study utilized an IPC training module for training ART personnel on IPC skills in the three selected health facilities. All consenting ART providers (n =60) providing care to HIV patients within the facilities were enrolled in the study. The training intervention consisted of two 4-h sessions given over two days. The first day of the course included a presentation on the meaning, principles, concepts, components, and importance of interpersonal communication, with an emphasis on emotional responsiveness, such as statements of concern, empathy, and reassurance, as well as positive exchanges, while the second day was devoted to role play and practise of specific communication skills.

Data Collection

The exit interview questionnaires were administered to consented ART patients shortly after their medical appointment. The sociodemographics and general satisfaction of HIV-treatment-eligible individuals were collected. The patient satisfaction section of the instrument was adapted from the Patient Satisfaction Questionnaire (PSQ)-18 [[17]]. The PSQ-18 had a section for client demographic information and another section with 20 questions to assess client satisfaction with interpersonal interactions with ART providers. On a 5-point Likert scale, satisfaction questions were scored as "strongly agree = 5", "agree = 4", "don't know = 3", "disagree = 2", or "strongly disagree = 1".

The mean score was determined for all responders. Data was dichotomized into "not satisfied" and "satisfied" using the Cutoffs for the mean scores where <60% = "not satisfied" >60% as "satisfied" [We collected data on Android smartphones using the Open Data Kit (ODK) Collect application.

Data Analysis

The collected data was analyzed using SPSS version (21). Descriptive analysis such as frequencies and percentages had been used to describe different variables. The demographic data were analyzed using the Chi-square test while client satisfaction before and after the training were compared to measure the effectiveness of the IPC training on client satisfaction using Paired Sample T-test and Mc Nemar's test. at 0.05 level of statistical significance.

Instrument and Training Module Pre-test

Before actual data collection, 30 ART providers and 30 clients in three (3) health facilities in Bauchi State pre-tested the training module and quantitative questionnaire. Bauchi State was selected because it has a similar HIV/AIDS indices to Gombe State. After collecting the data, Cronbach Alpha was used to analyze the PSQ-18's internal consistency. The Cronbach Alpha reliability coefficients of .865 was found indicating good reliability. Another set of ART providers from different facilities received a pretest, brief training, and a post-test. Pretest and posttest data were collected using a 10-item subset of the main questionnaire. T-tests were used to determine the training module's effectiveness.

The result showed a significant difference between ART providers' pre-test and post-test scores (p = 0.000, less than 0.05). So, the training module can be used to improve providers' IPC skills.

Data Quality Control

The PSQ-18 questionnaire, which had previously been validated in a comparable study, was slightly modified to fit the setting. Data collectors were given training.

The questionnaire was also subjected to pre-testing. Before entering data, the collected data was reviewed for completeness.

Ethical Consideration

Ethical clearance was sought and obtained from the Gombe State Ministry of Health Research Review and Ethical Committee (HRREC) before the commencement of this study. Written inform consent of all recruited participants was obtained. Consent forms were translated and read to the non-English speakers among the respondents to aid their understanding of the study. Participants were educated on the purpose of the study and were informed of their freedom to withdraw at any time if they so desired, after which they gave signed informed consent or left thumb impressions. Throughout the study, subject confidentiality was maintained. No confidential information was shared outside the study team during project reporting. Only study team members could access the database.

Results

Demographic Characteristics of the Clients

The demographic characteristics of the clients in the 6 selected health facility which formed both the control and training group of the study is presented in Table 1 below.

Table 1. Demographic Information of ART Clients

Demography	Study Groups		Total (N=250) n (%)	P-value
	Control Group (N=125) n (%)	Intervention Group N=125) n (%)		
Gender				
Male	57(45.6)	66(52.8)	123(49.2)	0.693
Female	68(54.9)	59(47.3)	127(50.8)	
Education Level				
Informal Education	11(8.8)	8(6.4)	19(7.6)	0.809
Adult and non-formal	4(3.2)	5(4.0)	9(3.6)	
Primary School	13(10.4)	11(8.8)	24(9.6)	
Secondary School	38(30.4)	39(31.2)	77(30.8)	
Tertiary Education	59 (47.2)	62(49.6)	121(48.4)	
Age				
Less than 20 Years	2(2.4)	3(2.4)	6(1.2)	0.981
21-30 Years	21(16.8)	32(25.6)	53(21.2)	
31-40 Years	36(44.8)	53(42.4)	109(43.6)	
41-50 Years	29(23.2)	22(17.6)	51(20.4)	
51-60 Years	15(12)	14(11.2)	29(11.6)	
60 years and above	1(0.8)	1(o.8)	2(0.8)	
Marital Status				
Single	32(25.6)	40(32.0)	73(29.2)	0.270
Married	69(55.2)	63(25.6)	143(56.8)	
Widowed	8(6.4)	9(7.2)	17(6.8)	
Divorced	16(12.8)	13(10.4)	29(11.6)	
Years with HIV				
Less than 1 year	6(4.8)	13(10.4)	19(7.6)	0.200
1-5 years	50(40)	56(44.8)	106(42.4)	
6-10 years	22(17.6)	18(14.4)	40(16.0)	
11-15 years	31(24.8)	28(22.4)	59(23.6)	
Above 16 years	16(12.8)	10(8.0)	26(10.4)	
Years on ART service				

Less than 1 year	5(4.0)	12(9.6)	17(6.8)	0.437
1-5 years	52(4.6)	58(46.4)	110(44)	
6-10 years	21(16.8)	19(15.2)	40(16)	
11-15 years	40(32)	32(25.6)	72(28.8)	
Above 16 years	7(5.6)	4(3.2)	11(4.4)	

Chi square test (X2), Significance at p<0.05

Most clients were female and were between ages 31 to 40 years; 127(50.8%) and 109 (43.6%) respectively. Majority: 121 (48.4%) of clients in both groups had attained tertiary level of education.

No statistical difference was seen in the sociodemographic variables (gender, age, education and marital status) at baseline between the intervention and control group. Most clients 106 (42.4%) had lived with HIV for less than 5 years. Similarly, majority 110 (44.0%) of clients had utilized ART services for less than 5 years.

Baseline Assessment of Client Satisfaction

The baseline assessment of the client's satisfaction is presented in the table below.

At baseline no significant statistical difference was seen in satisfaction levels between clients of the intervention and control groups.

Table 2. Baseline Comparison of Client's Satisfaction between the Intervention Group and Control Group

Test	Groups	N	Mean	SD	Mean Difference	P-value
Pre-intervention	**Intervention Group**	125	75.92	17.38	0.46	833
	Control Group	125	76.38	16.38	-	

Effectiveness of IPC on Client Satisfaction

The post intervention of the clients in intervention and control group on satisfaction were compared and are presented in the table below.

The mean satisfactions score of ART clients in the intervention group increased significantly after the training (p=0.000, p<.000).

Table 3. Comparison of Mean Score of Intervention and Control Groups on Client Satisfaction

Test	Groups	N	Mean	Mean Difference	P-value
Post-intervention	**Intervention Group**	125	87.50	11.05	.000
	Control Group	125	76.45	-	

Mc Nemar's test was conducted on the dichotomized data to ascertain the effect of the training as shown in Table 4 below: A statistically significant (p=0.007) increase in self-reported satisfaction of clients was seen among those clients whose providers had received IPC training.

Table 4. Mc Nemar's Comparison on Self-reported Level of Satisfaction Expressed between Participants in Intervention Group and Those of Control Groups Receiving Regular Clinic Services

Client Satisfaction	Study Groups		Difference (%)	P-value
	Control Group (N=125) n (%)	**Intervention Group N=125) n (%)**		
Not Satisfied	53(42.4)	33(26.4)	16	.007
Satisfied	72(57.6)	92(73.6)	16	

p value was calculated using McNamar's Test, *significant at <0.05

Discussion

Patient satisfaction has always been a concern in health care [10]. Previous research has established and used patient satisfaction as a tool for quality improvement in health care providers [3, 9]. Patient satisfaction has emerged as a key metric for assessing healthcare performance [19]. Almost 51% of the patients interviewed were women, which is consistent with previous studies showing that more women than men are receiving ART [20-22]. Biologically, women are twice more likely to become infected with HIV through unprotected heterosexual intercourse than men and therefore more women are present at treatment centres [23]. Furthermore, literature review revealed that men visit ART clinics less frequently than women and are usually started on ART later in the course of their infection. However, the primary causes of this gender difference have yet to be fully elucidated [24]. Most patients were between the ages of 31 and 40 years, representing a large percentage of the active Nigerian workforce [25]. This highlights how important it is to have proper coverage of antiretroviral therapy (ART) in this demographic to preserve Nigeria's economic integrity. The educational level of patients revealed that the majority (78%) had between secondary school and tertiary educational level and so the majority of our respondents could read and write. This is higher than 35% reported by a previous study carried out in Sokoto [26] and higher than 45% State literacy rate [27].

The overall mean score of client satisfaction with antiretroviral therapy services of this study at baseline for both intervention (75.9) and control (76.3) groups is like the findings in studies conducted in Ethiopia, Hosanna (70.1) [28] and Tigray (75.2) [29] and higher than studies in South Africa (52) [21] and in Ethiopia, Wollega (57.6) [11]. Possible reasons for why this study's results are higher than those of other studies include the presence of a greater variety of support-giving stakeholders in the study area, an improved level of health care coverage in the study area, or differences in sample size and the ease with which participants can access various forms of transportation. While our findings is slightly lower than the studies conducted in Cameron (91.2) [30] Nigeria (99.6) [26] and Ethiopia in Tigray Region (89.6) [31]. This may result from help from various non-governmental groups, which contribute significantly to advances in both the quality of services provided and the level of client satisfaction with ART services.

Because training in patient/provider communication skills could enhance the knowledge and abilities of healthcare providers, allowing them to communicate with clients more successfully. Other research [9, 6, 28] has demonstrated that training in interpersonal communication skills can increase client satisfaction. The findings from this study indicate that most clients are satisfied with the ART service they receive from the ART providers with IPC training. These findings validate the findings of the Honduras, Egyptian, and Trinidad and Tobago studies, demonstrating that minimal training in IPC skills can significantly affect patient satisfaction. [9, 34, 35].

Building on an already established relationship, we can infer that improvements in patient satisfaction will lead to improved patient compliance with treatment and related improvements in health outcomes. Several studies support the claim [7-9]. Furthermore, the study found that majority of the clients from the intervening facilities have expressed satisfaction with the ART services they received after the ART providers were trained on IPC skills. This indicates IPC training can improve ART providers' IPC skills, which increases client satisfaction.

Improvements could lead to better rapport, treatment, and follow-up appointments. Furthermore, the finding agrees with authors who found/believed that interpersonal communication skills in healthcare make clients feel at home and at ease, help clients feel more in control of their management, reduce clients'

nervousness and anxiety about being neglected by providers, and improve clients' satisfaction. [36,37]. Compared to other studies, the drawback of our studies is the short follow-up period (6 weeks after training) and the impossibility of using audiotape recordings in clinical situations. This is due to a lack of time and resources.

Conclusion

In conclusion interpersonal communication can be used to solve most problems related to ART deployment, monitoring, and judging the quality of ART provision in our settings. IPC training for ART practitioners has effect on making ART treatment more satisfying for clients. Capacity building through seminars and workshops on successful IPC should take place regularly.

Conflict of Interest

The authors wish to declare no conflict of interest in this manuscript.

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