

## Original Research

## Factors Determining Satisfaction with Service Delivery at Family Medicine Clinics of a Tertiary Hospital in North Central Nigeria.

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### Abstract

**Background:** Patients' satisfaction with service delivered at the healthcare facility is a critical index of quality of care in the health industry. Hence, it is paramount to ascertain patients' satisfaction to improve service delivery.

**Methodology:** The study was a cross-sectional design conducted among 104 patients aged 18 to 65 years who were on follow-up for chronic diseases at the Family Medicine Clinics. Data was collected from the participants via interviewer administered questionnaire. Statistical significance was determined using paired samples t-test, Chi-square, and logistic regression was set at a p-value of  $\leq 0.05$ .

**Results:** The study used 104 patients with chronic diseases. The mean age of the study population (N = 104) was  $51.83 \pm 9.37$  years. The ages ranged from 21-69 years. 65 (62.5%) were females; male to female ratio was 1:1.7. The majority of them had formal education 59 (56.7%). There were no statistically significant differences in the socio-demographic characteristics. Waiting time was found to be the most significant predictor of patient satisfaction in this study ( $P=0.003$ ; O. R=3.17, CI=1.03-1.15). The overall satisfaction score with service delivery in the study area was 71.4%.

**Conclusion:** Patients recorded a high level of satisfaction with service delivery 71.4% for the care received at the study site, particularly during their experiences with the physicians, pharmacists, lab scientists, nurses, and record officers, and the neatness of the clinic's environment. The results indicate that good communication has a positive effect on patients' level of satisfaction. Henceforth, service providers should employ patient-centered communication to improve quality of care.

**Keywords:** Patient's Satisfaction, Service Delivery, Patient-Provider, Family Medicine.

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**How to Cite:** AkafaTA, Iseko KI. Factors Determining Satisfaction with Service Delivery at Family Medicine Clinics of a Tertiary Hospital in North Central Nigeria. Niger Med J 2024; 65 (2):132-141. <https://doi.org/10.60787/nmj-v65i2-393>.

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## Introduction:

Patient's expectations and experience with service delivery have to match in order to achieve an excellent satisfaction score. Satisfaction of a patient with the care received is a major determinant of the clinical outcome.<sup>[1, 2]</sup> Patient retention in a facility can be aided or marred by the kind of service she/he has experienced especially in the management of chronic diseases.<sup>[2]</sup>

Patient satisfaction is the extent to which the patients feel that their needs and expectations are being met by the service provided.<sup>[3,4]</sup> Also, it is the measure of patients' experience or assessment of the care that has been rendered.<sup>[5,6]</sup> Involvement in assessing patient satisfaction with health services arose with the consumer movement of the 1960s.<sup>[7,8]</sup> Health service researchers recorded that satisfied and dissatisfied patients act differently; satisfied patients are more likely to comply with treatment regimens, keep follow-up appointments, and utilize health services.<sup>[9,10]</sup> Such behavioral consequences related to satisfaction could affect the outcome of care and people's health-seeking behaviour.<sup>[11, 12]</sup>

Patient satisfaction is a multifactorial health concept that is affected by many variables like socio-demographic factors and quality of health care services.<sup>[9,13]</sup> The common patient demographic factors that may influence satisfaction include age, ethnicity, marital status, and socioeconomic status (income and educational status). The health care provider factors can include communication styles, consultation and waiting times, and the facility-related factors include quality of facilities, neatness of environment, parking spaces, etc.<sup>[10, 14]</sup>

The level of patients' satisfaction in most Nigerian studies ranges from 30 to 83 % depending on the study sites and themes.<sup>[6, 12]</sup> The studies by Udonwa et al in Calabar had a satisfaction rate of 59.3% in the patient-doctor consultation while Onwujekwe et al in Makurdi reported a patient satisfaction level of 56.4% with the hospital services.<sup>[9]</sup> Iliyasu and colleagues got patients' satisfaction level of 83% in their study while Iloh et al had a 66.8% level of patients satisfaction.<sup>[6]</sup>

Healthcare recipients; that is patients and their caregivers in developing countries are sensitive to the quality of healthcare delivery compared with those in advanced countries.<sup>[10,13]</sup> Even healthcare providers have been dissatisfied with the quality of care and have for many years used their professional unions to demand increased government funding of the health sector.<sup>[11,14]</sup> Some of the challenges that contribute heavily to patients' dissatisfaction in most Nigerian clinics include overcrowding, delay in consultation, and lack of proper guidance.<sup>[6,9]</sup> Hence patients and health workers are migrating abroad. The public tertiary hospitals in Nigeria have received the utmost level of negative comments, both by the patients and society.<sup>[11,12]</sup> These negative comments range from poor quality of service delivery to service delay, discontinuity of care, indifferent staff attitude, and bureaucratic procedures.<sup>[8,9]</sup> These negative comments have caused poor public confidence in healthcare and made these hospitals unattractive to the users of medical services particularly among individuals with chronic diseases.<sup>[11]</sup>

Chronic disease is defined as a medical condition that lasts at least three months and usually may not be cured completely but can often be managed through lifestyle and continual medical care. Some chronic diseases are terminal in nature and more often a life sentence.<sup>[10-12]</sup> The following chronic diseases that are commonly encountered in the study site include hypertension, heart failure, diabetes mellitus, bronchial asthma, peptic ulcer disease, epilepsy, obesity, sickle cell disease, chronic liver diseases, chronic arthritis, chronic obstructive pulmonary diseases, anxiety-related disorders, depression, somatoform disorders, stroke, chronic low back pains, and chronic kidney diseases.<sup>[13]</sup>

Health service researchers noted that satisfied and dissatisfied patients behaved differently; satisfied patients were more likely to comply with treatment, keep follow-up appointments, and utilize health services.<sup>[6, 17]</sup> Such behavioral consequences related to satisfaction could affect the outcome of care and health-seeking behaviour. Patient expectations refer to what patients think they will receive, what they desire, what they feel to be important, or what they feel entitled to when seeking care as an outcome of healthcare.<sup>[14,16]</sup> This satisfaction is related to how service delivery benefits the user and the extent to which these meet his/her expectations. Patients' experiences are their direct, personal encounters with the health services as a composite system. Therefore, patients' expectations and their actual experiences, are potentially important in influencing patients' evaluations of their care and 'satisfaction' level.<sup>[15,17]</sup>

Patients who experienced a shorter physician's consult had lower satisfaction scores. Adequate consultation time is positively associated with patient satisfaction but Thompson et al noted that patients were least satisfied when waiting times were longer.<sup>[17,18]</sup> A better appreciation of the factors determining patient satisfaction would result in the implementation of services that are tailored to patient needs.

This study aimed to evaluate the factors that determine the satisfaction level of patients with service delivery at the Family Medicine Clinics of a tertiary hospital in North Central Nigeria in order to improve the quality of healthcare services. The study specific objectives were to determine socio-demographic and patient clinical factors at the study site; determine service provider factors influencing patient's satisfaction with care; determine the effect of time and medication pill burdens on patient satisfaction and determine the overall level of satisfaction with service delivery in the study area

## Material and Methods

It was a facility-based cross-sectional study conducted in the Family Medicine Clinics of Federal Medical Centre FMC, located in Keffi Local Government Area of Nasarawa State, Nigeria. Keffi is a semi-urban town with a land mass of 138 km<sup>2</sup> and an estimated population of 92,664 according to the 2006 census by the National Population Commission.<sup>13</sup> The Family Medicine Clinics consist of the general outpatient patient clinic, GOPC, geriatric clinics, NHIA Clinic, Staff clinic, and Emergency services. On average, 40,000 patients are seen in these clinics annually. It has a viable two-way referral system. About 1,122 chronic disease cases were seen in these clinics monthly in 2015. The study consisted of adult patients aged 18 to 65 years having chronic diseases on follow-up visits at the study site. It was conducted between March to June 2017. The estimated sample size needed for the study was calculated using Cochran formula  $n = Z^2 PQ/D^2$ .  $Z$  = the value of standard normal variables at 95% confidence interval 1.96;  $P$  = Expected prevalence or proportion of chronic illness 90% (0.05).  $Q = 1 - P = 0.2$ .  $D$  = marginal error at 5% (standard value of 0.05). The required sample size ( $n$ ) =  $Z^2 PQ/D^2 = 1.96 \times 1.96 \times 0.9 (0.1) / 0.05 \times 0.05 = 139$ . Assuming an attrition of 10%,  $139 + 14 = 153$ . The minimum sample size was 153. However, only 104 participants provided complete data and were analyzed.

**Inclusion criteria.** Patients aged 18-65 years with chronic diseases (diseases lasting  $\geq$  three months) attending the clinics in the study area. 2. Patients who gave informed consent to participate. 3. Patients who understood Hausa language and/or English. **Exclusion criteria.** Patient with acute exacerbation of a chronic disease. 2. Patient with severe psychiatric illnesses with impaired judgment.

Consecutive patients aged 18 to 65 years who were on follow-up visits for chronic diseases attending these clinics were approached for consent. After obtaining written informed consent, eligible participants were voluntarily and conveniently recruited into the study and those excluded were referred to their primary physicians.

Socio-demographic data questionnaire and interpersonal patient evaluation forms were used as data collection tools. The interpersonal evaluation form was used to assess participant's satisfaction experiences with the different healthcare service providers, and their perception of study area infrastructures and environment culminated in the overall satisfaction score. Littmann Quality Lightweight II SE Stethoscope (Made in the USA by 3M Health Care) and Mercury Sphygmomanometer for blood pressure measurement. Data collected were analyzed using Statistical Package for Social Sciences (SPSS) 22.00 software and presented using tables, frequencies, percentages, and means. The associations between categorical variables were tested using the Chi-square. The logistic regression analysis was carried out to demonstrate the independent effect of some selected factors that influenced patient satisfaction. A p-value of less than 0.05 was considered significant for all analyses. Ethical approval was obtained from the Ethical and Research Committee of FMC Keffi (HREC/21/12/2012). In addition, informed consent was obtained, and confidentiality of the information obtained was coded and safeguarded. Participants were given the right to withdraw from the study without prejudice to their treatment.

## Results

The mean age of the study population (N = 104) was 51.83± 9.37years. Their ages ranged from 21-69 years.65 (62.5%) were females with female to male ratio of 1.7:1. Majority of them had formal education 59 (56.7%). There were no statistically significant differences in the socio-demographic characteristics, but the clinical profile revealed otherwise on disease type among participants as demonstrated in Table 1 below. Table 2 displayed the service provider's factors that affect patient satisfaction with care and only the medical record officer, facility infrastructure and waiting time were significant. Their consultation time with the physician was 14.93 (±3.17) and 13.64 (±2.29) for the satisfied and dissatisfied group respectively. The medication pill burden was 3.29 (±1.57) and 4.12(±1.15) for the satisfied and dissatisfied group. This is detailed in Table 3.

Table 4 shows the logistic regression of selected factors that affected patients' satisfaction with waiting time and facility infrastructure has an odds ratio of 3.174 and 2.061 respectively. The overall satisfaction score of the study area was 71.4 % as charted in Figure 1.

**Table 1: Sociodemographic and patient's clinical predictors affecting satisfaction**

	Satisfied F (%)	Dissatisfied F (%)	Total (%)	X <sup>2</sup>	P-value
<b>Age(in years)</b>				1.23	0.05 *
Mean ± SD (Yrs)*	51.26 ±8.98	52.41 + 9.21	51.83 ± 9.37		
<30	1(100)	0(0.0)	1(0.96)		
30-39	7(58.3)	5(41.7)	12(11.5)		
40-49	16(61.5)	13(38.5)	29(27.9)		
50-59	20(58.8)	14(41.2)	34(32.7)		
60 & above	19(67.9)	9(32.1)	28(27.0)		
<b>Gender</b>				0.10	0.75*
Male	24(61.5)	15(38.5)	39(37.5)		
Female	42(64.6)	23(35.4)	65(62.5)		
<b>Education</b>				0.49	0.96 *
No formal education	29(64.4)	16(35.6)	45(43.3)		
Primary	9(69.2)	4(30.8)	13(12.5)		
Secondary	9(64.3)	5(35.7)	14(13.5)		
Tertiary	19(59.4)	13(40.6)	32(30.8)		
<b>Occupation Status</b>				0.69	0.75 *
Unemployed	33(67.6)	16(32.7)	49(47.1)		
Employed	27(60.0)	18(40.0)	45(43.3)		
Retired	6(60.0)	4(40.0)	10(9.6)		
<b>Income (Naira)</b>				4.74	0.19*
<20,000	25(67.6)	12(32.4)	37(35.6)		
20,000-40,000	13(72.2)	5(27.8)	18(17.3)		
41,000-60,000	20(66.7)	10(33.3)	30(28.8)		
Above 60,000	8(42.1)	11(57.9)	19(18.3)		
<b>Disease status</b>	75(72.1)	29(27.9)	104(100)	35.04	<b>0.00*</b>
<b>Follow-up frequency</b>				4.73	0.12*
Every month or less	52(59.1)	36(40.0)	88(84.6)		
8 weeks	12(85.7)	2(14.3)	14(13.5)		
Twelve weeks	1(100)	0(0.0)	1(0.96)		
6 months or more	1(100)	0(0.0)	1(0.96)		

Medical funding 1.48 0.51 \*

Self	42(60.0)	28(40.0)	70(67.3)
Family member	22(68.8)	10(31.2)	32(30.8)
Retainership	2(100)	0(0.0)	2(1.9)

\* Fisher’s exact test was interpreted. \* Chi-square, X<sup>2</sup> test was interpreted

Table 2: Service Provider’s factors determining patient’s satisfaction with care

Service Providers	Satisfied F (%)	Dissatisfied F (%)	Total (%)	X <sup>2</sup>	P-value
<b>Billing officer</b>				0.96	0.32
Yes	54(65.9)	28(34.1)	82(78.8)		
No	12(54.5)	10(45.5)	22(21.2)		
<b>Nurses</b>				0.61	0.43
Yes	53(65.4)	28(34.6)	81(77.9)		
No	13(56.5)	10(43.5)	23(22.1)		
<b>Pharmacists</b>				0.98	0.35
Yes	51(66.2)	26(33.8)	77(74.0)		
No	15(55.6)	12(44.4)	27(26.0)		
<b>Medical record officer</b>				7.02	<b>0.00</b>
Yes	54(71.1)	22(28.9)	76(73.9)		
No	12(42.9)	16(57.1)	28(26.1)		
<b>Medical Lab Scientist</b>				3.40	0.06
Yes	54(68.4)	25(31.6)	79(76.0)		
No	12(48.0)	13(52.0)	35(24.0)		
<b>Medical attendants</b>				0.09	0.80
Yes	52(64.2)	29(35.8)	81(77.9)		
No	14(60.9)	9(39.1)	23(22.1)		
<b>Facility Infrastructure</b>				8.60	<b>0.00</b>
Yes	59(70.2)	25(29.8)	84(80.8)		
No	7(35.0)	13(65.0)	20(19.2)		
<b>Service Charge</b>				2.00	0.16
Yes	39(69.6)	17(30.4)	56(53.8)		
No	27(56.2)	21(43.8)	48(46.2)		
<b>Physician</b>				0.60	0.44
Yes	59(64.8)	32(35.2)	91(87.5)		
No	7(53.8)	6(46.2)	13(12.5)		
<b>Waiting Time</b>				2.60	<b>0.01</b>
Yes	17(68.0)	8(32.0)	25(24.0)		
No	49(62.0)	30(38.0)	79(76.0)		

Table 3: Consultation time and Medication Pill Burden on Patients’ satisfaction

Consultation time	Mean SD	Mean SD	‡ F-test statistics	
Satisfied	14.93 (±3.17)	12.37 (±2.39)	F=7.91	<b>0.01‡</b>
Dissatisfied	13.64 (±2.29)	11.16 (±2.04)	F=8.72	<b>0.01‡</b>

**No. of pills prescribed per day**

Satisfied	2.64 (±1.28)	3.29(±1.57)	F=1.71	0.20‡
Dissatisfied	3.43(±1.28)	4.12(±1.15)	F=1.32	0.17‡

**Logistic regression of selected factors determining patients’ satisfaction**

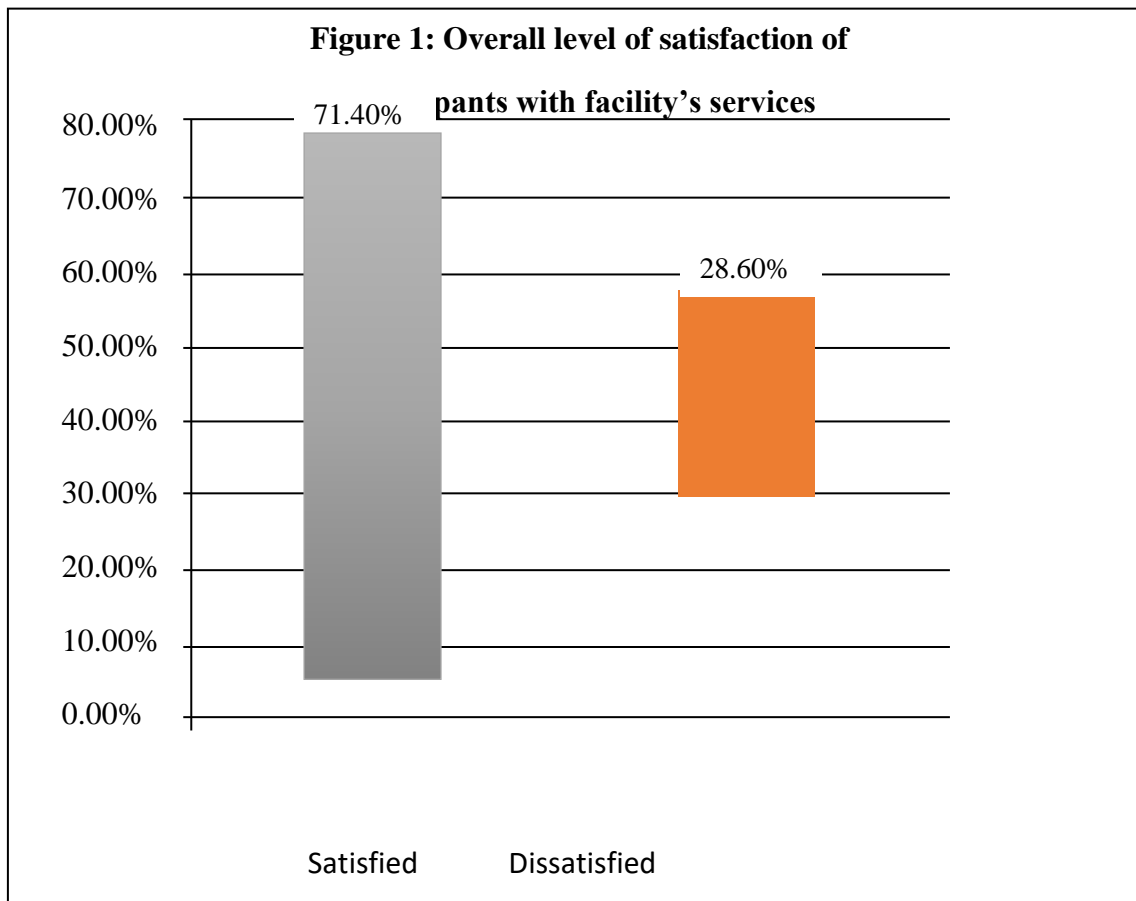
The bivariate analysis of patient's waiting time and their level of satisfaction showed a statistically significant association ( $\chi^2 = 2.60$ , **P = 0.01**). Also, the results produced a statistically significant association among medical record officer attitudes ( $\chi^2 = 7.02$ , **P = 0.00**) and facility infrastructure ( $\chi^2 = 8.60$ , **P = 0.00**) respectively with the patient’s satisfaction level. The disease type was found to have an influence on the satisfaction level of the patient ( $\chi^2 = 35.04$ , **P=0.00**). Table 4 below shows that logistic regression analysis with waiting time, medical record officer attitudes and facility infrastructure were significant independent factors in determining patient satisfaction.

**Table 4: Logistic regression of selected factors affecting patients’ satisfaction**

Variables	Degree of freedom	p-value	Odds Ratio	Confidence Interval
Waiting time	1	0.003	<b>3.174</b>	1.030-1.151
Consultation time	1	0.021	1.005	0.962-1.051
Medical record officers	1	0.000	1.026	1.348-36.625
Facility infrastructure	1	0.001	<b>2.061</b>	0.824-.995
Disease type	8	0.000	<b>1.615</b>	0.000-2.041

**The overall level of satisfaction of participants with services at the study facility**

Figure 1 below shows the satisfaction level of participants based on their experience following an encounter with the facility’s neatness and the various attitudes of service providers at the study site regardless of the type of communication styles. The satisfaction score of FMC Keffi services and facility environment rated by the participants was 71.4%. Details are displayed in Figure 1 below:



**Figure 1: The satisfaction rating of the facility by participants using the interpersonal evaluation form.**

### Discussion:

In this study, patient satisfaction was scored from the patients' perspectives and was based on the encounters between them and the healthcare system. Bridging communication and time gaps is sacrosanct to improving patient satisfaction with care.<sup>[21,23]</sup> The present study had a 71.4% satisfaction score with the services obtained at the study facility while the remaining were dissatisfied. This may be explained by the fact that the majority of the patients could have been impressed by the neatness of the facility environment, the well-painted consulting rooms, and the politeness of the staff. The result of this study is similar to Iliyasu et al study in Kano which had an 83% satisfaction score while the remaining 17% were dissatisfied.<sup>[6]</sup> This similarity may be accounted for by the similar socio-cultural values and levels of literacy captured in both studies. Also, the siting and proximity of the residence of the patients to the hospital could have contributed. In contrast, however, a study in Kampala, Uganda by Kabatooro et al found the overall satisfaction with medical consultations to be as low as 53.9%.<sup>[31]</sup> This finding was attributed to the fact that over 60% of the Kampala study population were younger patients ( $\leq 40$  years) who demanded more from their service providers hence lowering the satisfaction score. This was not the case in the present study where 87.5% of its study population was over 40 years.

Considering the demographic variables in this study, the middle age group, 40-59 years was found to be the most satisfied but the relationship between age and satisfaction was not found to be statistically significant. Furthermore, participants with no formal education had the highest satisfaction grading but the relationships were not statistically significant. This is similar to a study by Udonwa et al on patient-



related factors influencing patient satisfaction in the patient-doctor encounters at the General Outpatient Clinic of the University of Calabar Teaching Hospital. [2] Though the study participants emanated from different cultures, however, their illness perception might be identical.

The patient's frequency of follow-up visits in the study area was not found to statistically influence the patients' satisfaction with the consultation. Those who visited every eight weeks or less in the present study were more satisfied in 61.5% of cases. Kabatooro et al in Kampala reported that frequenting the healthcare system was well associated with higher satisfaction because these patients felt comfortable enough to share their personal feelings about their illness with the service providers.<sup>22</sup> The patients who frequented the facility reported higher satisfaction scores than those who were coming for the first time. [22,28] However, our findings suggested otherwise.

Yet, logistic regression was necessary when this study revealed a statistically significant difference in the level of patient's satisfaction on the following predictors namely, the type of disease ( $\chi^2=35.04$ ,  $P=0.002$ ), waiting time ( $\chi^2=2.596$ ,  $P=0.012$ ), facility infrastructure ( $\chi^2=8.65$ ,  $p=0.003$ ) and medical record officer attitude ( $\chi^2=7.015$ ,  $p=0.008$ ) respectively with patients' satisfaction. The interpersonal satisfaction of the participants with the remaining service providers like nurses, medical attendants, pharmacists, etc. yielded no statistical effect.

This study found that of the two time-based measures (consultation time and waiting time), time spent waiting to see the doctor during the consultation is the most potent determinant of overall patient satisfaction while the second predictor is the facility infrastructure. These are system-related factors. This is unlike Onwujekwe et al study in Makurdi where the single most important factor is the consultation time.<sup>9</sup> The longer the consultation time the higher the level of satisfaction. [18,26]

The present study revealed that the higher the consultation time the higher satisfaction with care which concurs with the Onwujekwe et al study in Makurdi which noted the consultation time to be a significant predictor of satisfaction. The reason for this can be due to the fact that both study participants were from the same geo-political zone of Nigeria and so may have similar cultural practices. On the contrary, Osiya et al in Port Harcourt reported that there was no statistically significant difference in the time spent consulting with the doctors ( $P = 0.58$ ).<sup>[3]</sup> This is because the doctors attending to this category of patients were general practitioners and community health physicians who lacked the skill of patient-centered clinical care. Consultation time has been positively associated with patient satisfaction.<sup>[17]</sup> Measures to reduce the patient's waiting time and increase consultation time and a proper appointment system will improve the health system's performance. [14,23,28]

The type of patients' illness appears to influence patients' satisfaction as already demonstrated in this study which is also similar to Onwujekwe et al study in Makurdi.<sup>[9]</sup> The logistic regression showed that waiting time, record officers' attitude, and neatness of facility infrastructure were significant independent predictors of patient satisfaction. This is consistent with Iliyasu et al in Kano but at variance with two previous Nigerian-based studies that noted lower levels of satisfaction with the general appearance of the facility. [6,17,24] This can be explained that the longer the patients' waiting time the lower the level of satisfaction with care. The cultural background of the study participants could be responsible for the similarity or disparity in the satisfaction outcome.

Furthermore, regarding the waiting time, facility infrastructure, and medical records officer's attitude, Iloh et al noted 48.7%, 67.6%, and 68% respectively as average satisfaction scores among participants.<sup>7</sup> Patient's waiting time are generally prolonged in sub-Saharan Africa because of shortage of manpower and working equipment but facility infrastructure satisfaction rating probably depends on patient's civilization. Waiting time is one of the common sources of patient dissatisfaction. Long waiting times can result in anxiety, frustration, and even a negative perception of the quality of care. Patients are likely to report satisfaction when waiting times are shorter. [17,19,28,29]



Medical record officers are the first point of contact of incoming patients in the current study site hence the first impression about the facility and service is built from here. Also in the present study, medical record officers were sometimes used to double up in medical billing services. This may account for their higher interpersonal satisfaction score as compared to other service providers

As noted in the present study, Udonwa et al study in Calabar reported a statistical significance between patient's perception of time spent in consultation and their satisfaction score.<sup>[2]</sup> Patients are more satisfied when they spend more time consulting with their physicians than those who use less consultation time.<sup>[9, 22]</sup> It was found that satisfaction with the consultation is best predicted by meeting the patients' expectations.<sup>[20,26]</sup> Some studies reported that patients were of the opinion that the doctor should be communicative, and compassionate and should attend to psychological and contextual determinants of illness in addition to biomedical aspects.<sup>[7, 22, 28]</sup>

**Conclusion:** Patient satisfaction is a great asset to health service managers. It is a measure of the patients' experience following a clinical encounter, especially among chronic disease patients who have to be on follow-up care for a long time. The healthcare providers are the key players in the patient-centered care. These stakeholders are positioned to adopt better approaches to the care of patients. Thus, their attitudes, skills, communications, or other therapeutic relationships can contribute greatly to the overall satisfaction of the patient.

**Limitations of the study:** 1. Unlike most studies on patient satisfaction, this study was based on a single center with few providers 2. The short duration of the study.

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