

Patient Satisfaction with Pharmaceutical Services in a Tertiary Health Facility in Ogun State, Nigeria

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Abstract

Introduction: Pharmaceutical services are vital components of the healthcare system that serve to improve the health outcomes of patients. These services have moved beyond mere medicine supply to provide more patient-centred services. Patients who are happy with pharmacy services are less likely to switch healthcare providers and are more likely to take their prescriptions as prescribed. Such patients are more likely to be retained in care with improved health outcomes. This study aims to assess patients' satisfaction with pharmaceutical services and associated factors in a tertiary health facility in Ogun State.

Methods: A cross-sectional study design was used for the study. Adult patients attending the outpatient pharmacy in Babcock University Teaching Hospital, Ilishan-Remo, Ogun State, Nigeria, were recruited for the study. A multistage sampling technique was used, and data collection was done using a validated questionnaire, adapted from previous studies.

Results: Approximately 96.7% of the patients expressed satisfaction with the pharmacists' ability to clearly and concisely label prescriptions. Patients reported the highest levels of dissatisfaction with the courtesy and respect shown by pharmacists (40%), followed by inadequate explanation of medication side effects (30.8%), prolonged waiting times (21.7%), and limited availability of medications (19.2%).

Conclusion: The hospital management should employ additional pharmacists, ensure a consistent supply of medications, and integrate counselling on medication side effects into the pharmacists' dispensing process, treating counselling as a core responsibility rather than an optional task for pharmacists.

Keywords: Patients, Satisfaction, Pharmaceutical services, Health facility

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Introduction

Patient satisfaction is an important indicator of the quality of health services. It is the extent to which patients feel that their expectations are met by the services that are provided in health facilities (1, 2, 3, 4). Pharmacy departments in hospitals offer services such as compounding, dispensing, distributing pharmaceuticals, reviewing instructions, and monitoring adverse drug reactions (5, 6, 7). The conventional task of dispensing pharmaceuticals has given way to the more expansive patient-centred practice, which is far more intense and personal than that of pharmacy dispensing alone. The World Health Organisation (WHO) emphasised the need to shift pharmacists' traditional role

from product-oriented to patient-centred practice, considering the high prevalence of a wide range of chronic diseases and poor medication adherence. The transition from pharmaceutical delivery to patient-centred care is a crucial component in improving clinical and therapeutic health outcomes (8, 9). The professionalism of pharmacy employees, interactions with patients (including their communication style and method), pharmacists' concern for patients' health, and pharmacists' ability to adequately describe the uses, side effects, and storage of medications are some of the factors that have been shown to affect patients' satisfaction with pharmaceutical services (10, 11).

Numerous studies have demonstrated the importance of patient satisfaction in assessing pharmaceutical services, clinical results, and the effectiveness of patient treatment in health facilities (10). Myriads of challenges affecting optimal pharmaceutical service deliveries in Nigeria include poor patient satisfaction with pharmaceutical care services, supply chain inefficiencies, inadequate distribution networks, procurement challenges, poor logistic support, medication shortages and stockouts, inadequate healthcare infrastructure, and inadequate manpower (12, 13). These problems have an impact on patient satisfaction and quality of care. There is a paucity of data on patients' satisfaction with pharmaceutical services in Ogun State, particularly in tertiary health facilities in Ogun State. This study addresses a gap by evaluating patient satisfaction in a tertiary healthcare facility in Ogun State, where existing data is limited. This study evaluates patients' satisfaction with pharmaceutical services and their associated factors in a tertiary health facility in Ogun State.

Methods

Study Area

Ogun State is one of the thirty-six states in Nigeria. It was created on February 3rd, 1976, from the old Western State by the military regime of General Murtala Mohammed. It is in the southwestern part of Nigeria. It has a population of 3.75 million (2006 census) and a projected population of 5.2 million as of 2016. The main ethnic groups in the State are: Ijebus, Remos, Yewas, Egun, and Aworis. The State has twenty (20) Local Government Areas divided into 4 geopolitical zones, 3 senatorial districts, 9 federal and 26 state constituencies. There are 837 public and private health facilities comprising tertiary, secondary and primary. Ogun State has four tertiary health facilities: two in Ogun East and Ogun Central Senatorial Districts, respectively. The tertiary health facilities are: one State University Teaching Hospital, a Federal Psychiatric Hospital, one Private University Teaching Hospital and one Federal Medical Centre.

Study Design

A cross-sectional study design was used for the study. Patient satisfaction with pharmaceutical services was assessed using semi-structured questionnaires.

Study Population

The study population consisted of adult patients attending an outpatient pharmacy in a tertiary health facility in Ogun State.

Eligibility Criteria

Adult patients (at least 18 years old) attending an outpatient pharmacy in a tertiary health facility in the last six months were recruited for the study. Such patients were in a very good position to assess satisfaction with pharmaceutical services from their personal experiences. Adult patients attending an outpatient pharmacy in a tertiary health facility

in the last six months who were too sick to answer questions were excluded from the study.

Sample size determination

The Cochran formula was used to calculate the sample size (14)

$$\frac{z^2 p(1-p)}{e^2}$$

Z is the critical value of the normal distribution, which is 1.96

P is the proportion of satisfied patients from the previous study = 0.946 (14)

e is the margin of error = 0.05

$$\frac{(1.96)^2 (0.946) (0.054)}{(0.05)^2}$$

$$= 0.196 / 0.0025 = 78.4$$

Considering a 10% non-response rate, the calculated sample size = 88. This was increased to 120 (higher sample sizes increase statistical power).

Sampling Technique

A multistage sampling technique was used for the study.

Stage 1 was the selection of a tertiary health facility from the 4 tertiary health facilities in Ogun State by simple random sampling. The selected tertiary health facility was Babcock University Teaching Hospital in Ilisan-Remo in Ogun State.

Stage 2 was the selection of patients attending the outpatient pharmacy at Babcock University Teaching Hospital in Ilisan-Remo in Ogun State by a systematic random sampling technique. The sampling interval was calculated by dividing the number of patients attending the outpatient pharmacy at Babcock University Teaching Hospital in a month (1500) by the required sample size (120). The calculated sampling interval was 12.5. Every 13th patient who fulfilled the inclusion criteria was selected for the study.

Data Collection Tool

Data collection was done using a validated questionnaire, adapted by Ofili et al from the study by Surur et al, Aziz et al and Chijioke et al (6). The questionnaire was designed to assess patients' satisfaction with pharmaceutical services in hospitals. Each questionnaire assesses 13 domains of satisfaction with pharmaceutical services. Each domain of satisfaction has a 5-point Likert scale response (very low=1, low=2, moderate=3, high=4, very high=5) (1, 14). The maximum score for each domain is 5, while the minimum score is 1. A satisfaction score of ≥ 3 was considered as satisfied with pharmaceutical services, while a satisfaction score of < 3 was considered not satisfied with the pharmaceutical services (6). The composite mean for each domain was calculated by adding all the satisfaction scores in that domain for all the patients and dividing the obtained value by the total number of patients.

Pretesting of the Data Collection Tool

The questionnaire was pre-tested among 10% of the sample size of patients accessing pharmaceutical services in a tertiary health facility in Lagos State. This is since Lagos State and Ogun State are in the same geographic location (Southwestern Nigeria). Pretesting of the data collection tool was done with 4 research assistants.

Data Collection Method

The method of data collection was interviewer-based and was conducted by trained research assistants as exit interviews. Confidentiality was guaranteed, and verbal consents were obtained from patients.

Statistical Analysis

Data analysis was done using the IBM Statistical Package for the Social Sciences (SPSS) Statistics version 25. Descriptive statistics were calculated and presented as

frequencies, proportions, and standard deviations. The chi-square test was used to test for association between categorical variables. Binary logistic regression analysis was used to identify predictors of satisfaction with pharmaceutical services. The level of significance was set at 5% (0.05).

Results

Table 1 presents the socio-demographic characteristics of the patients. The mean age of the respondents was 44.68 ± 14.36 years, about 53% were females and traders (52%), 34% of the participants were more than 50 years old, the majority were married (80%), had tertiary education (83%), and were Yoruba (80%). About 52% of the participants were traders, 29% earned more than 150,000 Naira in a month, and 65% of the participants were not on health insurance.

Table 1. Patients' socio-demographic characteristics

Variable	Frequency (n=120)	Percentage (%)
Age (years)		
≤20	5	4.1
21-30	20	16.7
31-40	18	15.0
41-50	36	30.0
>50	41	34.2
Mean= 44.68 ± 14.36 years		
Sex		
Male	57	47.5
Female	63	52.5
Marital status		
Single	24	20.0
Married	96	80.0
Education		
Primary	1	0.8
Secondary	19	15.9
Tertiary	100	83.3
Occupation		
Civil servants	28	23.3
Health workers	15	12.5
Teachers	15	12.5
Traders	62	51.7
Ethnicity		
Yoruba	96	80.0
Igbo	17	14.2
Hausa	2	1.7
Others	5	4.1
Monthly income (Naira)		
Less than 50,000	25	20.8
50,000-99,000	34	28.3
100,000-150,000	26	21.7
>150,000	35	29.2
Health insurance		
Yes	42	35.0
No	78	65.0

Table 2 shows the distribution of satisfaction scores of respondents. The highest mean satisfaction score was 3.82 ± 0.82 , reflecting how clearly pharmacists labelled

medications using simple language, while the lowest mean score was 3.16 ± 1.33 , relating to how well pharmacists explained the possible side effects of medications.

Table 2. Distribution of satisfaction scores of respondents

Variable	Very low (%)	Low (%)	Moderate (%)	High (%)	Very High (%)	Mean $\pm$ SD
Convenience of pharmacy location	0	16 (13.3)	41 (34.2)	38 (31.7)	25 (20.8)	3.60 $\pm$ 0.97
Distribution of dispensing windows	1 (0.8)	14 (11.7)	55 (45.8)	35 (29.2)	15 (12.5)	3.41 $\pm$ 0.88
Convenience and suitability of the waiting area	1 (0.8)	11 (9.2)	56 (46.7)	25 (20.8)	27 (22.5)	3.54 $\pm$ 0.96
Waiting time before seeing the pharmacist	2 (1.7)	24 (20.0)	45 (37.5)	36 (30.0)	13 (10.8)	3.28 $\pm$ 0.96
Enough time taken with pharmacists	1 (0.8)	16 (13.3)	55 (45.8)	30 (25.0)	18 (15.1)	3.40 $\pm$ 0.93
Status of drug availability	7(5.8)	16 (13.3)	58 (48.3)	17 (14.2)	22 (18.4)	3.26 $\pm$ 1.09
How well the pharmacists explain instructions	5 (4.2)	4 (3.3)	39 (32.5)	42 (35.0)	30 (25.0)	3.73 $\pm$ 1.01
How well the pharmacists label your medications in easy language	0	4 (3.3)	41 (34.2)	48 (40.0)	27 (22.5)	3.82 $\pm$ 0.82
The pharmacist's interest in your health	6 (5.0)	16 (13.3)	38 (31.7)	34 (28.3)	26 (21.7)	3.48 $\pm$ 1.12
The courtesy and respect shown to you by the pharmacy staff	6 (5.0)	9 (7.5)	33 (27.5)	39 (32.5)	33 (27.5)	3.70 $\pm$ 1.10
How well the pharmacists explain the possible side effects of medication	19 (15.8)	18 (15.0)	31 (25.8)	29 (24.2)	23 (19.2)	3.16 $\pm$ 1.33
Privacy of your conversations with the pharmacists	8 (6.7)	12 (10.0)	46 (38.3)	28 (23.3)	26 (21.7)	3.43 $\pm$ 1.13
Overall satisfaction with pharmacy services	0	14 (11.7)	38 (31.7)	43 (35.8)	25 (20.8)	3.66 $\pm$ 0.94

Table 3 summarises the responses regarding satisfaction with pharmaceutical services. About 96.7% of the patients were satisfied with how well the pharmacists label medications in easy language, 40% were not satisfied

with the courtesy and respect shown by pharmacists, 30.8% were not satisfied with how well the pharmacists explain possible side effects of medications, 21.7% were not satisfied with waiting time before seeing the pharmacists, 19.2% were not satisfied with the status of drug availability.

Table 3. Patients' satisfaction with pharmaceutical services

Variable	Not Satisfied (%)	Satisfied (%)
Convenience of pharmacy location	16 (13.3)	104 (86.7)
Distribution of dispensing windows	15 (12.5)	105 (87.5)
Convenience and suitability of the waiting area	12 (10)	108 (90)
Waiting time before seeing the pharmacist	26 (21.7)	94 (78.3)
Enough time taken with pharmacists	17 (14.2)	103 (85.8)
Status of drug availability	23 (19.2)	97 (80.8)
How well the pharmacists explain instructions	9 (7.5)	111 (92.5)
How well the pharmacists label your medications in easy language	4 (3.3)	116 (96.7)
The pharmacist's interest in your health	22 (18.3)	98 (81.7)
The courtesy and respect shown to you by the pharmacy staff	48 (40)	72 (60)
How well the pharmacists explain the possible side effects of medication	37 (30.8)	83 (69.2)
Privacy of your conversations with the pharmacists	20 (16.7)	100 (83.3)
Overall satisfaction with pharmacy services	14 (11.7)	106 (88.3)

Table 4 shows the association between socio-demographic characteristics and patients' satisfaction with pharmaceutical services. There is no statistically

significant correlation between the socio-demographic variables and satisfaction with pharmaceutical services.

Table 4. Association between socio-demographic characteristics and patients' satisfaction with pharmaceutical services

Variable	χ^2	P value	df
Age	0.558	0.906	3
sex	0.137	0.711	1
Education	0.167	0.920	2
Occupation	5.511	0.138	3
Monthly income	6.619	0.085	3
Health insurance	0.288	0.592	1
Ethnicity	0.989	0.804	3

Table 5 presents the results of the logistic regression analysis. The dependent variable is overall patient satisfaction with pharmaceutical services. The dependent variable is overall patient satisfaction with pharmaceutical services. Independent variables are age,

education, monthly income, and health insurance status. The socio-demographic variables in this study are not statistically significant predictors of satisfaction. No significant predictors were identified, as all odd ratios included 1 in their 95% CI (confidence interval).

Table 5: Results of logistic regression analysis

Variable	B	S. E	Wald	p-value	df	Exp (B)	95% CI
Age	0.342	0.628	0.296	0.586	1	1.408	0.411-4.823
Education							
Primary	-19.145	40.192	0.000	1.000	1	0.000	0.000
Secondary	0.493	1.157	0.182	0.670	1	1.638	0.170-15.822
Tertiary (reference)							
Monthly Income (Naira)							
Less than 50,000	-0.908	1.185	0.588	0.433	1	0.403	0.040-4.111
50,000-99,000	0.583	0.897	0.423	0.515	1	1.782	0.309-10.394
100-150,000	-19.720	70.88	0.000	0.998	1	0.000	0.000
150,000 (reference)							
Health insurance	-0.246	0.801	0.094	0.759	1	0.782	0.163-3.758
Ref-No insurance							

Discussion

In this study, the mean age of the respondents was 44.68±14.36years, about half (53%) were females and traders (52%), 34% of the participants were more than 50 years old, the majority were married (80%), had tertiary education (83%), and were Yoruba (80%). About 52% of the participants were traders, 29% earned more than 150,000 Naira in a month, and 65% of the participants were not on health insurance. This contrasts with the results of research conducted in Ilorin, Nigeria, which found that most respondents (99.2%) were married, had a university education (87.7%), were from the Yoruba tribe (86.9%), and that more than half (53.8%) of the respondents were male. About 36.2% of the respondents were between the ages of 30 and 39 years, and 27% of the respondents earned between 30,000 Naira to 59,000 Naira (14). Similar results were found in a study conducted in Ethiopia; participants' mean age was 35.93 years ± 12.56 years, and there were more men than women (52.1%). However, three-quarters of the

participants were unmarried (64.4%), 37.4% lacked formal education, and their mean monthly income was 3391.67 Ethiopian Birr (10).

In this study, the overall mean satisfaction score was 3.66±0.94. The highest mean score was 3.82±0.812 (how well the pharmacists label your medications in easy language), while the lowest mean score was 3.16±1.33 (how well the pharmacists explain possible side effects of medications). Although the mean score on the pharmacists' ability to label patients' medications in easy language is quite commendable, the mean score on the pharmacists' explanations of possible side effects of medications could be due to the pharmacists' heavy workload and time constraints. Writing a label is quicker than having a lengthy discussion about potential adverse effects, especially when servicing many patients. This is an area that the hospital management needs to address. Studies with higher overall mean scores were Onavbavba et al (3.72±0.88) and Odili et al (4.00±0.82), while Osarenmwinda and Agu reported lower

overall satisfaction scores of 3.31 and 3.11, respectively (14, 15, 16, 17). The high overall mean satisfaction score in this study aligns with the study by Onavbavba et al (3.72±0.88) and Odili et al (4.00±0.82). Onavbavba reported a high satisfaction rating of 4.11 regarding how well pharmacists instruct patients on medication usage, while Odili recorded an even higher score of 4.44 for the explanatory skills of pharmacists (15, 16). According to Osarenmwinda, the highest mean score (3.61) was attributed to the clarity of pharmacists' instructions on medication use, whereas the adequacy of pharmacy space received the lowest score (2.98) (14). Odili also identified the lowest satisfaction ratings for the adequacy of the waiting area (3.15) and the length of time patients wait to receive medications (3.43) (16).

In this study 88.3% were satisfied with overall pharmaceutical services, 96.7% were satisfied with how well pharmacists label instructions, 92.5% with how well pharmacists explain instructions to patients, 90% were satisfied with convenience and suitability of waiting area, 69.2% with explanation on possible side effect of medications to patients, 60% expressed satisfaction with courtesy and respect. This study found that pharmacists not only label prescriptions but also follow up with explanations, although they frequently fail to describe the negative effects of medications. Alotaibi et al. reported that the provision of instructions on medication side effects received the lowest mean score (3.08 ± 1.64). This finding is consistent with the results of studies by Sur and Aziz (18, 19). The high proportion of patients who were satisfied with the convenience and the waiting area may be attributed to factors such as easy accessibility of pharmacy services and an organised, clean, and adequately equipped waiting environment (the pharmacy department is located within the Outpatient Department building). Also, possible reasons for moderate (60%) satisfaction with courtesy and respect may be high patient volumes and limited staff. This can lead to fatigue, irritability, and impatience, which patients perceive as disrespect or rudeness. Also, 21.7% were not satisfied with the waiting time before seeing the pharmacists, and 19.2% were not satisfied with the status of drug availability. Possible reasons were high patient load, inadequate staff, high inflation rate, high cost of drugs, and a surge in patients' need for medications. Reported satisfaction levels in the literature were 71.4%, 58.1%, 85.96%, and 64%, respectively. However, Tarigan reported a low overall satisfaction level of 40.2% (20). This study found no significant statistical correlation between the socio-demographic factors and overall satisfaction with pharmaceutical services. This may be attributed to the consistent delivery of high-quality healthcare services, leading patients from diverse sociodemographic backgrounds to report similarly high levels of satisfaction. Such uniformity reduces the variation necessary to identify significant differences. This is consistent with findings from Amad et al, Uchenna et al and Baribefe et al, although

studies have shown a significant statistical association between age, educational status, waiting time, payment modality, medication availability and satisfaction with pharmaceutical services (21, 22). There is contrasting evidence on the association between age and patients' satisfaction with pharmaceutical services. According to Ayele et al, patients within the age range of 26–35 years (AOR = 0.5, 95% CI: 0.3, 0.9) and 36–50 years (AOR = 0.4, 95% CI: 0.2, 0.8) were less likely to be satisfied compared with patients within the age range of 18–25 years. This contrasts with findings that correlate higher satisfaction with older age (10). The relationship between education level and patient satisfaction is inconsistent across the literature. Some studies have found that patients with higher education levels report lower satisfaction compared to those with no formal education, potentially due to their higher expectations and greater ability to recognise shortcomings in service delivery. In contrast, other studies have found no significant association between education level and satisfaction (23, 24). Assessing patient satisfaction with pharmacy services is inherently subjective as perceptions vary based on individual experiences and expectations (10, 11, 20). Evaluations are influenced by local service quality and patient demographics; therefore, findings are facility-specific and cannot be generalised across different settings. Discrepancies in diverse satisfaction results arise from the use of different evaluation tools, lack of a universally standardised measurement tool, and differences in sample size (11, 20, 21, 22).

Limitations of the study

The Findings from a single facility may not apply to other settings, especially when healthcare systems, patient demographics, and service quality differ. Cross-sectional studies do not capture how patient satisfaction evolves or how it is affected by repeated interactions with the healthcare system. There is a need for multicentre and longitudinal studies to provide a more comprehensive understanding of patient satisfaction across different healthcare settings and over time. Such studies can enhance the generalizability of findings and offer deeper insights into the factors that influence satisfaction in the long term.

Conclusion

Areas of concern identified in this study are courtesy and respect shown by pharmacists, how well the pharmacists explain possible side effects of medications, waiting time before seeing the pharmacists, and the status of drug availability. The facility manager needs to employ more pharmacists, implement appointment systems, and ensure that medications are always available in the hospital. An adequate number of pharmacists could help handle the large patient load and shorten hospital waiting times. Policymakers should incorporate counselling on the side effects of medications into the dispensing workflow of pharmacists in the hospital. Counselling on the side effects

of medications should be viewed as a fundamental responsibility rather than an elective responsibility of pharmacists. These are areas of focus for the hospital management on quality-of-care improvement.

Abbreviations

IBM: International Business Machines Corporation

SPSS Statistical Package for the Social Sciences

LGAs: Local Government Areas

OGHREC: Ogun State Health Research Ethics Committee

Declarations

Ethics Approval and Consent to Participate: Ethical clearance was obtained from the Ogun State Health Research Ethics Committee (OGHREC), Department of Planning, Research and Statistics, Abeokuta, Ogun State. Written informed consents were obtained from the patients. Incentives were not given to participants in the study.

Data Availability: Data for this work is available from the authors and may be presented on request.

Competing Interests: None.

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Author contributions: Authors contributions: OsA conceived and designed the study, OmA and OO participated in the design of the study. AN and OV participated in data analysis and interpretation. ON drafted the manuscript. All authors approved the final draft.

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