Original

# Satisfaction with Orthopaedic Services at the University of Port Harcourt Teaching Hospital

**[1]Diamond TE, [2]Ogaji DS**

*[1]Department of Surgery, Faculty of Clinical Sciences, University of Port Harcourt, Port-Harcourt*
*[2]Department of Preventive and Social Medicine, Faculty of Clinical Sciences, University of Port Harcourt, Port-Harcourt*

**Corresponding author: Tamunokuro Ezekiel Diamond,** *Department of Surgery, Faculty of Clinical Sciences, University of Port Harcourt, Port-Harcourt.; teddymond@gmail.com; +2348037372248*

Article history: Received 13 January 2024, Reviewed 8 March 2024, Accepted for publication 12 March 2024



**How to cite this article:**
Diamond TE, Ogaji DS; Satisfaction with Orthopaedic Services at the University of Port Harcourt Teaching Hospital. The Nigerian Health Journal 2024; 24(1): 1141 – 1152. Doi: https://www.doi.org/10.60787/tnhj-24-1-786

## Abstract

**Background:** Patient satisfaction is associated with continuing receipt, adherence, and health outcomes. Study assessed the level and factors associated with patients' satisfaction with orthopaedic care in a tertiary health facility.

**Method:** Descriptive cross-sectional study among adult recipients of orthopedics care at the University of Port Harcourt Teaching Hospital (UPTH). Consecutive patients receiving services at the orthopaedic department from March to June 2020 completed the satisfaction questionnaire with services at the medical records, nurses, non-specialist doctor, orthopaedic doctor, laboratory, radio-imaging and pharmacy stations. This was measured on a 5-point Likert's scale - very dissatisfied, dissatisfied, indifferent, satisfied and very satisfied using adapted scales for patient satisfaction and responsiveness. Scale reliability was determined by the Cronbach's alpha coefficient. Descriptive and inferential statistics were conducted and p-values ≤0.05 were considered statistically significant.

**Result:** The response rate was 97.3% and Cronbach's alpha coefficient was 0.84. Respondents' mean age was 38.5 ±14.8 years with a range of 18-89 years. More first time (57.7%) than repeat visitors, cases related to bone fractures (28.4%) and joint pain (26.0%). More patients (32.1%) were dissatisfied with radio-imaging services. There were significant disparities in patients' satisfaction across service stations ($\chi 2 = 18.87$; p-value = 0.002) and likelihood of recommending facility to close friends and family members ($\chi 2 = 17.70$; p= 0.003).

**Conclusion:** Patients' satisfaction with orthopaedic services vary across service stations, primary complaints, and perceived responsiveness. Addressing the system-related variables may improve satisfaction ratings and increase the demand for orthopaedic care.

**Keywords:** satisfaction, quality ratings, orthopaedic services, University of Port Harcourt Teaching Hospital, UPTH.



Print ISSN: 0189-9287 Online ISSN: 2992-345X

## Introduction

Health quality represents the extent to which health care services provided to individuals and patient populations achieve desired health outcomes as well as meet stated or implied needs of health care consumers.[1] Donabedian opined that the quality of care provided by a health facility should reflect the values and goals of the medical system and the society at large at any point in time.[2]

Patients' view on health care which can be captured in their preferences (expectations or ideas about what should occur), evaluations (judgments or perceptions of health care), and reports (more objective observations on the organization or process of care)[3] is becoming increasing important in an era of patient-centredness and consumerism.[4] Patient satisfaction, complaints, and suggestions are common means of health care evaluation involving patients. Satisfaction which illustrates how patient perceived their health encounters as being useful, effective, or beneficial can be explained by the theories based on 'value expectancy', 'fulfillment' and 'discrepancy'.[5] While giving due attention to patients' views on healthcare has strong ethical, philosophical, legal, clinical, and practical underpins, integrating patient evaluation into a health institutions' clinical audit system illustrates its extent democratic accountability and desire to enhancing the social relevance of healthcare.[6] Patients have the competence to evaluate specific treatment, pattern of care, care organisations and models of health care.[7]

Orthopaedic care needs periodic quality assessment with the aim of identifying and remediating challenges with processes, safety of services, cost of care and improving the level of satisfaction with the services provided.[8] Process inconsistencies which may lead to surgical disasters can become institutionalized when diagnostic, treatment policies and protocols are inexistent. Worst affected or impacted by processes in healthcare are the patients. As such, the level of patient satisfaction reflects the quality of healthcare.[9] System failures will result in delays in accessing care, economic losses, and patients' dissatisfaction. As dissatisfied patient are product of inefficient systems; the higher the proportion of those who are dissatisfied, the poorer the quality of care provided and the less the confidence of people will have on the healthcare service system. Patient satisfaction surveys can thus, provide useful data to inform actions geared towards improving healthcare delivery systems.[6] Previous authors[10,11,12] have reported poor satisfaction among patients receiving care at health institutions in the developing world.

This study assessed the level and factors associated with the satisfaction of orthopedic patients at various service stations in a tertiary health facility in South-south Nigeria based on the framework capturing the patients' background (socio-demographic/clinical characteristics) and controlling for healthcare responsiveness along 5 domains (dignity, autonomy, amenity, confidentiality, and choice of providers) presented in Figure 1

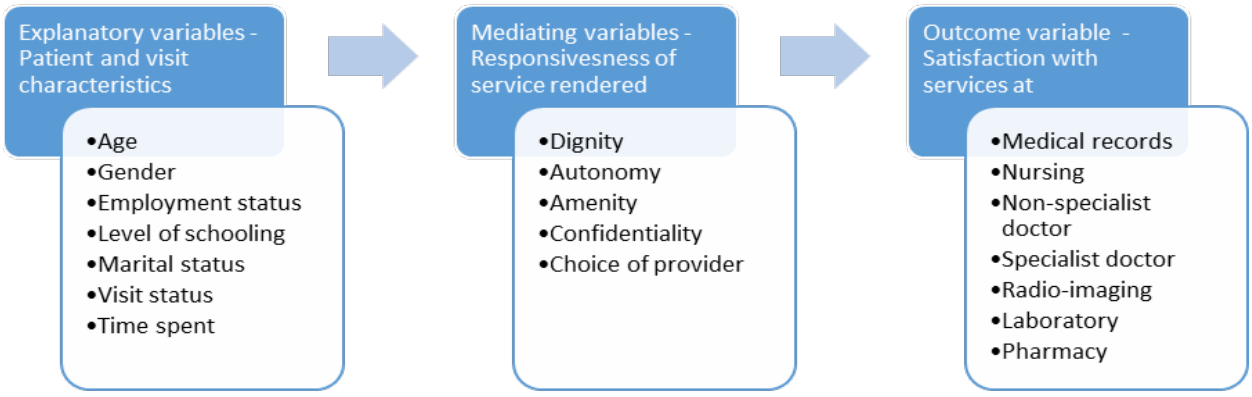


**Figure 1**: Conceptual framework of the study



Print ISSN: 0189-9287 Online ISSN: 2992-345X

## Method

### *Study design*

This study was descriptive cross-sectional study.

### *Study setting*

The hospital is in Rivers State along the East-West Road with coordinates of 4.45305800N and 6.5504300E. UPTH serves as a tertiary referral center and receives referrals from neighboring several states. The orthopedic department is one of the 38 clinical departments in UPTH involved with providing services, training human resource for health and conduct of health-related research. The department with 3 clinics running every Tuesdays, Wednesdays, and Thursdays, while inpatients services are provided in 3 wards for adult male, female and pediatrics age group, receives patients from the family medicine unit, the children out-patient unit, the accident and emergency unit as well as from other departments of the hospital.[13] Patients receiving care from the orthopaedic department receive support services from the radiology department, the laboratories, the physiotherapy department, the records unit as well the accounts department in the hospital.

### *Study population*

The study was conducted among adult recipients of orthopedics care at the University of Port Harcourt Teaching Hospital (UPTH). Both inpatients and outpatients that received attention at the orthopaedic departments from March 2020 to June 2020 (four-month period) were eligible for inclusion in the study if they gave verbal consents and were not in severely debilitating conditions.

### *Sampling methodology*

Adult patients who received orthopaedic services at both the orthopaedic clinics and the orthopaedic wards within the study period where consecutively recruited into the study if they gave their consents to participate in the study. The sample size of 442 was calculated using the Cochran's formular for cross-sectional studies[14] $n = Z^2 x\ PQ/d^2$. Where Z at 1.96, p is set at 60.9% based on the proportion of patients attending primary health care centres in the same area who provided good rating on the choice of providers in a previous study.[15] A 10% increase in the calculated sample size was done to accommodate non-responders and inappropriately completed questionnaires.

### *Data collection*

Sampled patients were interviewed using a closed-ended questionnaire developed from the conceptual framework of the research and review of the literature to capture the patient's satisfaction along the retinue of care. The questions on responsiveness were extracted from the WHO multi-country health systems responsiveness questionnaires.[16] The study tool captured the patients' background and socio-demographics characteristics such as age, gender, marital status, educational status, religion, visit status and primary orthopaedic complaints in section A. Section B had rating of satisfaction level with services obtained had ordinal responses on a 5-point Likert's scale - very dissatisfied, dissatisfied, indifferent, satisfied and very satisfied with lower scores indicative of poorer rating on satisfaction. These were assessed for services received at the various service stations – medical records, nurses, non-specialist doctor, specialist doctor, laboratory, radio-imaging and pharmacy services. Section C contained overall level of patients' satisfaction, willingness to recommend the facility to other patients and overall rating on each of the six domains of responsiveness along a 5-point rating scale - excellent, good, fair and poor with lower scores indicative of poorer rating.

### *Study variables*

The dependent variables for the study included patient socio-demographic characteristics measured as continuous variable (age) and categorical variable (gender, level of school and marital status), clinic-related variables such as visit status and responsiveness along the five domains measured on a dichotomous scale. The dependent variables were rating on satisfaction across all service stations measured on an ordinal scale. The rating on the overall satisfaction with the care received and likelihood of recommendation of orthopaedic services to close friends and family members should they have a need were measured on a dichotomous scale (yes/no).

### *Data analysis*

Face and content validation of the scale was conducted using subject experts and patients to improve it appropriateness, comprehensibility, and the suitability of the contents for orthopaedic patients. The reliability of the satisfaction scale was determined by the internal consistency measured with the Cronbach's alpha coefficient. Both descriptive (absolute, relative frequencies and measures of central tendencies) and inferential (Pearson's chi-square and multivariate binary logistic regression) analyses were conducted. The Pearson's chi-square test was used to deduce differences in patients' rating of overall satisfaction and their likelihood of recommending the services across patient groups categorized by primary orthopaedic complaints. The multivariate binary logistic regression model was used to identify possible



Print ISSN: 0189-9287 Online ISSN: 2992-345X

patient and system-related factors associated with patient satisfaction with services received at the various service stations as the dependent variable was rated on an ordinal scale. The ordinal rating on satisfaction was dichotomized as not satisfied (comprising original categories - very dissatisfied, dissatisfied, and indifferent) and satisfied (comprising original categories for satisfied and very satisfied). The multivariate logistic model - $\pi(x)=P(Y=1|X=x)$ represented what best predicts the success value of the binary response variable Y (satisfied or not satisfied) for the values of several X variables (predictors). The adjusted odds ratios, approximated to two decimal places and the p-values approximated to three decimal places were presented. P-values of ≤0.05 were considered statistically significant.

***Ethical Consideration***: Ethical approval was obtained from the research ethics committee of the University of Port Harcourt with reference code: **UPH/SPH/HSM/MSC/2018/PT/001** and permission was obtained from the heads of the accident/emergency and orthopaedic departments of the teaching. Individual patients recruited into the study gave verbal consents after full disclosure of the objectives of the study and their involvement. Patients were at liberty to withdraw their participation at any time if they choose to with assurances that this will not affect their care in the hospital.

## Results

A total of 442 patients gave consent and were recruited into the study but only 430 patients gave complete responses to the questionnaires giving a response rate of 97.3%. The Cronbach's alpha of the satisfaction scale was 0.84 and 0.57 alpha for the responsiveness scale with dichotomized response options.

From **Table 1**, the age range of the study participants was 18-89 years with mean of 38.5 ± 14.8 years. More of the patients were females (55.8%), currently married (60.5%) with post-primary level of schooling (82.6%) and employed (75.8%).

From **Table 2**, there were more first-time visitors (57.7%) the more prevalent complaints were bone fracture (28.4%) and joint pain (26.0%). The preponderance of ratings was good/excellent for dignity (75.3%), confidentiality (77.7%), amenities (71.6%) and autonomy (71.2%). About three-quarters of the patients reported being satisfied and willing to recommend the orthopaedic services in the hospital to close friends and family members. Opportunity for orthopaedic patients to make choice on their provider received the least proportion of good/excellent raters (3.3%). The least duration of time was spent at the medical record department (median = 20 minutes) while it took a median duration of 2 days to see the orthopaedic surgeon for those referred to the orthopaedic clinic from other units in the hospital.

**Table 3** which presents findings on the satisfaction rating of orthopaedic patients across the service stations. Higher proportion of patients (32.1%) expressed dissatisfaction with radiology services than other services.

From **Table 4**, Significant disparity in the overall rating of satisfaction ($\chi2 = 18.87$; p-value = 0.002) and likelihood of recommendation of the facility ($\chi2 = 17.70$; p= 0.003) across the various primary orthopaedic complaints by the patients. Patients who received care for bone fracture were most likely to be satisfied (88.5%) and recommend the facility (87.7%) while those with bone infection were least like to be satisfied (60.5%) and were also least likely to recommend the facility (60.5%).

**Table 5** show the patient and clinic-related factors associated with the rating on satisfaction with the services received by orthopaedic patients at the various service units of the hospital. Patients that are employed were significantly less satisfied with services at the medical records department (p = 0.000), nursing station (p = 0.002) laboratory (p=0.003) and pharmacy (p = 0.004). Male patients have at least one and a half time odds of being satisfied with radiology services than female patients and this was statistically significant (p = 0.01). Patients with higher level of education had more than twice odds of being satisfied with medical record service (odds ratio = 2.16, p-value 0.003). Poorer rating on responsiveness across the domains were consistently associated with poorer rating on satisfaction. Older age was significantly associated with higher odds of satisfaction with nursing services (OR = 1.01, p = 0.03) and care provided by the non-specialist doctors (OR = 1.02, p = 0.011). There were significant inverse relationships between time patient spent for receiving care at service stations and satisfaction with services by the general duty doctor (p = 0.003), laboratory services (p = 0.001) and pharmacy service (0.001).



Print ISSN: 0189-9287 Online ISSN: 2992-345X

**Table 1:** Participants' characteristics

| Variables | Categories | Frequency | Percent |
|---|---|---|---|
| Gender | Male | 190 | 44.2 |
| | Female | 240 | 55.8 |
| Employment | Unemployed | 104 | 24.2 |
| | Employed | 326 | 75.8 |
| Level of schooling | <=Primary | 75 | 17.4 |
| | >Primary | 355 | 82.6 |
| Marital status | Currently unmarried | 170 | 39.5 |
| | Currently married | 260 | 60.5 |
| Age | <40years | 248 | 57.7 |
| | >=40years | 182 | 42.3 |
| Visit status | First time | 248 | 57.7 |
| | Subsequent | 182 | 42.3 |
| Primary Complaints | Bone fracture | 122 | 28.4 |
| | Bone infection | 43 | 10.0 |
| | Limb swelling | 31 | 7.2 |
| | Back pain | 85 | 19.8 |
| | Joint pain | 112 | 26.0 |
| | Spinal cord problem | 37 | 8.6 |

**Table 2:** Assessment of hospital visit

| Variables | Categories | Frequency (%) | Percent |
|---|---|---|---|
| Responsive of care – good/excellent rating | Dignity | 324 | 75.3 |
| | Autonomy | 306 | 71.2 |
| | Amenities | 308 | 71.6 |
| | Choice of Providers | 14 | 3.3 |
| | Confidentiality | 334 | 77.7 |
| Recommend facility | Yes | 325 | 75.6 |
| Overall satisfied | Yes | 329 | 76.5 |

**Table 3:** Level of satisfaction with services received at various units.

| Services | Very Dissatisfied – Freq (%) | Dissatisfied - Freq (%) | Indifferent - Freq (%) | Satisfied - Freq (%) | Very Satisfied - Freq (%) |
|---|---|---|---|---|---|
| Records | 8 (1.9) | 24 (5.6) | 46 (10.7) | 197 (45.8) | 155 (36.0) |
| Nurses | 30 (7.0) | 40 (9.3) | 85 (19.8) | 159 (37.0) | 116 (27.0) |
| Doctor on duty | 4 (0.9) | 31 (7.2) | 63 (14.7) | 196 (45.6) | 136 (31.6) |
| Ortho Doctor | 8 (1.9) | 20 (4.7) | 74 (17.2) | 165 (38.4) | 163 (37.9) |
| Radiology | 64 (14.9) | 74 (17.2) | 72 (16.7) | 116 (27.0) | 104 (24.2) |
| Laboratory | 8 (1.9) | 24 (5.6) | 54 (12.6) | 225 (52.3) | 119 (27.7) |
| Pharmacy | 8 (1.9) | 12 (2.8) | 50 (11.6) | 201 (46.7) | 159 (37.0) |



Print ISSN: 0189-9287 Online ISSN: 2992-345X

**Table 4:** Relationship between patients' complaints and overall satisfaction/likelihood of recommending orthopaedic services

| Primary orthopaedic complaints | Overall satisfaction | | Likelihood of recommending facility | |
|---|---|---|---|---|
| | No – freq (%) | Yes – freq (%) | No – freq (%) | Yes – freq (%) |
| Bone fracture | 14 (11.5) | 108 (88.5) | 15 (12.3) | 107 (87.7) |
| Bone infection | 17 (39.5) | 26 (60.5) | 17 (39.5) | 26 (60.5) |
| Limb swelling | 9 (29.0) | 22 (71.0) | 10 (32.3) | 21 (67.7) |
| Back pain | 19 (22.4) | 66 (77.6%) | 21 (24.7) | 64 (75.3) |
| Joint pain | 30 (26.8) | 82 (73.2) | 30 (26.8) | 82 (73.2) |
| Spinal cord problem | 12 (32.4) | 25 (67.6) | 12 (32.4) | 25 (67.6) |
| Chi-square (p-value) | 18.87 (0.002) | | 17.70 (0.003) | |



Print ISSN: 0189-9287 Online ISSN: 2992-345X

**Table 3:** Level of satisfaction across patients' categories and service responsiveness

| Independent variable | Satisfaction with services rated as good | | | | | | |
|---|---|---|---|---|---|---|---|
| | Record Freq (%) | Nursing Freq (%) | Dr. on duty Freq (%) | Ortho. Dr. Freq (%) | Radiology Freq (%) | Laboratory Freq (%) | Pharmacy Freq (%) |
| Gender – Male | 152(80.0) | 126(66.3) | 152(80.0) | 146(76.8) | 107(56.3) | 160(84.2) | 160(84.2) |
| Female | 200(83.3) | 149(62.1) | 180(75.0) | 182(75.8) | 113(47.1) | 184(76.7) | 200(83.3) |
| Employed – Yes | 263(80.7) | 202(62.0) | 251(77.0) | 235(72.1) | 160(49.1) | 259(79.4) | 263(80.7) |
| No | 89(85.6) | 73(70.2) | 81(77.9) | 93(89.4) | 60(57.7) | 85(81.7) | 97(93.3) |
| Edu – Post-primary | 292(82.3) | 220(62.0) | 278(78.3) | 270(76.1) | 185(52.1) | 282(79.4) | 299(84.2) |
| Primary or less | 60(80.0) | 55(73.3) | 54(72.0) | 58(77.3) | 35(46.7) | 62(82.7) | 61(81.3) |
| Currently married – No | 222(85.4) | 174(66.9) | 206(79.2) | 208(80.0) | 142(54.6) | 208(80.0) | 219(84.2) |
| Yes | 130(76.5) | 101(59.4) | 126(74.1) | 120(70.6) | 78(45.9) | 136(80.0) | 141(82.9) |
| Visit – First | 144(79.1) | 105(57.7) | 124(68.1) | 126(69.2) | 74(40.7) | 137(75.3) | 141(77.5) |
| Repeat | 208(83.9) | 170(68.5) | 208(83.9) | 202(81.5) | 146(58.9) | 207(83.5) | 219(88.3) |
| Dignity – Poor | 63(59.4) | 48(45.3) | 63(59.4) | 67(63.2) | 36(34.0) | 59(55.7) | 71(67.0) |
| Good | 289(89.2) | 227(70.1) | 269(83.0) | 261(80.6) | 184(56.8) | 285(88.0) | 289(89.2) |
| Autonomy – Poor | 66(53.2) | 45(36.3) | 58(46.8) | 54(43.5) | 34(27.4) | 66(53.2) | 78(62.9) |
| Good | 286(93.5) | 230(75.2) | 274(89.5) | 274(89.5) | 186(60.8) | 278(90.8) | 282(92.2) |
| Confidentiality – Poor | 57(59.4) | 41(42.7) | 45(46.9) | 45(46.9) | 30(31.3) | 53(55.2) | 61(63.5) |
| Good | 295(88.3) | 234(70.1) | 287(85.9) | 283(84.7) | 190(56.9) | 291(87.1) | 299(89.5) |
| Amenity – Poor | 67(54.9) | 38(31.1) | 71(58.2) | 63(51.6) | 39(32.0) | 79(64.8) | 79(64.8) |
| Good | 285(92.5) | 237(76.9) | 261(84.7) | 265(86.0) | 181(58.8) | 265(86.0) | 281(91.2) |
| Choice of Provider – Poor | 338(81.3) | 264(63.5) | 318(76.4) | 314(75.5) | 209(50.2) | 330(79.3) | 346(83.2) |
| Good | 14(100.0) | 11(78.6) | 14(100.0) | 14(100.0) | 11(78.6) | 14(100.0) | 14(100.0) |
| Age - <40 years | 197(79.4) | 144(58.1) | 180(72.6) | 176(71.0) | 115(46.4) | 191(77.0) | 203(81.9) |
| ≥40 years | 155(85.2) | 131(72.0) | 152(83.5) | 152(83.5) | 105(57.7) | 153(84.1) | 157(86.3) |



Print ISSN: 0189-9287 Online ISSN: 2992-345X

**Table 5:** Predictors of level of satisfaction with services at various stations – multivariate analysis

| **Independent variable – ref** | **Level of satisfaction with services relating to…** | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Record AOR (p-value)** | **Nursing AOR (p-value)** | **Dr. on duty AOR (p-value)** | **Ortho. Dr. AOR (p-value)** | **Radiology AOR (p-value)** | **Laboratory AOR (p-value)** | **Pharmacy AOR (p-value)** |
| Gender – Male | 0.52(0.067) | 1.21(0.445) | 1.11(0.738) | 0.95(0.861) | 1.60(0.035) | 1.40(0.280) | 0.97(0.931) |
| Female | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Employed – Yes | 0.64(0.347) | 0.66(0.196) | 1.42(0.363) | 0.13(<0.001) | 0.38(0.671) | 1.07(0.868) | 0.19(0.003) |
| No | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Edu – Post-primary | 1.38(0.483) | 0.64(0.205) | 1.68(0.178) | 1.12(0.813) | 1.37(0.280) | 0.50(0.090) | 1.27(0.573) |
| Primary or less | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Currently married – Yes | 4.97(<0.001) | 1.80(0.037) | 1.90(0.061) | 5.94(<0.001) | 1.80(0.023) | 1.09(0.796) | 2.29(0.020) |
| No | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Visit – Subsequent | 1.26(0.530) | 0.67(0.114) | 0.46(0.010) | 0.62(0.131) | 0.49(0.002) | 0.97(0.927) | 0.62(0.126) |
| First | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Dignity – Poor | 0.58(0.173) | 0.86(0.616) | 0.75(0.426) | 1.91(0.122) | 0.66(0.135) | 0.19(<0.001) | 0.54(0.093) |
| Good | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Autonomy – Poor | 0.10(<0.001) | 0.30(<0.001) | 0.14(<0.001) | 0.11(<0.001) | 0.39(<0.001) | 0.14(<0.001) | 0.29(<0.001) |
| Good | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Confidentiality – Poor | 0.29(0.002) | 0.54(0.038) | 0.18(<0.001) | 0.16(<0.001) | 0.48(0.010) | 0.26(<0.001) | 0.35(0.002) |
| Good | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Amenity – Poor | 0.17(<0.001) | 0.20(<0.001) | 0.59(0.150) | 0.22(<0.001) | 0.52(0.014) | 1.79(0.138) | 0.40(0.013) |
| Good | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Choice of Provider – Poor | 0.00(0.998) | 0.79(0.753) | 0.00(0.998) | 0.00(0.999) | 0.35(0.155) | 0.00(0.998) | 0.00(0.999) |
| Good | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Age - <40 years | 0.99(0.972) | 0.56(0.032) | 0.50(0.037) | 0.47(0.027) | 0.59(0.029) | 0.66(0.203) | 0.81(0.524) |
| ≥40 years | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Nagelkerke R Square | 0.53 | 0.36 | 0.45 | 0.55 | 0.25 | 0.41 | 0.36 |



Print ISSN: 0189-9287 Online ISSN: 2992-345X

## Discussion

The mean age of 38.5 years observed in this study is a clear reflection of the predominantly young population of subject recruited in this study. The effect of demographics on patient satisfaction have been studied by both Larsen & Rootman[17] and Henley & Davis[18] who reported older patients being more satisfied with care received than younger patients. Finding from this study also show that older patients were significantly associated with higher odds of satisfaction with nursing services (OR = 1.01, p = 0.03) and care provided by the non-specialist doctors (OR = 1.02, p = 0.011). The expectation of younger patients may perhaps be at a divergence with the realities of care in the less developed countries.

There was an observed discordance between the proportion of subjects employed and those covered under pre-payment plan as the majority of the patients (75.8%) were employed but most have no form of health insurance. This high proportion of patients may have high expectations from the care center since payment for health care are often made from out-of-pocket. Jackson et al[19] have noted that patients without any form of health insurance have higher and often unrealistic expectations from the health system, they may also be more unsatisfied with the services received. While this corroborates the finding from this study which shows that employed patients were significantly less satisfied with services at the medical records department, nursing station, laboratory, and pharmacy, an earlier study among surgical patients in same facility reported higher income as a significant correlate of surgical patient satisfaction.[15]

More of the patients recruited into this study were visiting the study site for the first time compared to repeat visitors. While this compares with studies by Charriote et al[20] and Maxwell et al,[21] it is a contrast with the report by Ayele et al[22] where there were more repeat visits (55%) compared to first time visits (45%). Patients on first appointments may be more motivated and more eager to see the specialist than patients on follow-up visits.[17] Unmet expectations from previous visits, unconcluded diagnostic tests, and familiarity with existing structure may also explain the lower turn-out rates for repeat visitors to the orthopaedic clinic.

The overall level of satisfaction reported in this study was higher than the findings by Ayele et al in Ethiopia (64.4%; 95% CI: 59.3–67.6%),[22] Udonwah et al in Calabar, Nigeria (57.1%),[23] Jimma, Ethiopia (57.7%),[24] Shoa, Ethiopia (61.9%)[25] and Amhara Region of Ethiopia[26] (65.9%). While the earlier study in this setting which compared the level of satisfaction of patients attending primary and tertiary health facilities reported significantly higher proportion of patients attending primary health facilities being more satisfied along the domains of satisfaction.[27] Discrepancies across various settings and facilities might not only be influenced by the level of the practice of also by patient characteristics such as age, gender, marital status, employment, religion, and level of education,[27] as well as system characteristics such as the communication between provider and care recipients.[28] Interestingly, a previous study among surgical patients in the same facility as this study reported an overall satisfaction level of 60.9% (95%CI: 59.7 – 62.0) with no significant relationship between visit status and patient satisfaction.[15] The fact that patients visiting the specialist clinic already has the outpatient clinic as a benchmark for satisfaction rating may also explain the higher rating from this study. A previous study in Bangladesh[29] reported higher satisfaction rates can have positive impact on patients 'compliance to medications and commitment to care. Satisfaction with communication with the surgeon was the most consistent predictor of patient willingness to comply with surgeon's recommendations for follow-up visits, prescription, and investigation.[28] Both Pascoe[30] and Dupree[31] also reported that higher patients' satisfaction will reflect better patient's perception about the quality of care with positive influence on commitment to care and compliance to preventive, curative and rehabilitative recommendations.

Services received at the radiology unit had the poorest satisfaction rating (48.8%, n=210). This corroborates earlier findings from same setting where the least proportion of patients were satisfied services with radio imaging (29.7%) and laboratory services (47.2%).[32] It is not surprising, that these stations attracted longer waiting time - 50 minutes for laboratory and 77.4 minutes for radio imaging services in this previous study. There is evidence that significant negative correlation exists between waiting time and patient satisfaction with service stations.[32] Despite the administrative delays leading to long waiting time before patients can assess radiologic services, the frequent system failure at the study center may be responsible for this poor satisfaction rating. As a contrast, Mulisa et al[33] found higher satisfaction rating (71.6%) among patients receiving radiologic services in a university teaching hospital in eastern Africa due to ease of access.



Print ISSN: 0189-9287 Online ISSN: 2992-345X

Ahmed et al[34] in Ethiopia reported 62.75% satisfaction rating for nursing characteristics across selected hospitals. The satisfaction rating for nursing services in this study was similar (65%, n=275). Several authors[15, 35, 36] have argued that both treatment-related and patient-related factors play key roles in influencing patients' level of satisfaction. Communication barriers, physicians' communication skills, the warmth and friendliness shown by clinicians, the level system-based responsiveness on the concerns and expectations of patients, explicit explanations on the diagnosis, treatment, and prognosis of the patients' illness as well as the time spent at the point of care all have direct influence on the level of satisfaction.

The systematic review on determinants of patients' satisfaction, reported that while treatment- related (provider-related) factors remain strong indicators of patients' level of satisfaction, patient-related factors tend to be weak indicators of the level of satisfaction[35]. Fang et al[37] also found that medical staff service attitude and medical staff service technology are the strongest influencers on the level of satisfaction from services received in the health institution. The index study found that patient-related factors such as patients' age, gender, marital status and hospital visit status were predictors of the level of satisfaction at the various units where care was received. The degree of contributions from these variables revealed that elements of responsiveness especially autonomy, confidentiality and amenity as greater influence on the overall level of satisfaction while patient-related variables like gender, employment status, marital status showed the least influence on their satisfaction.

This study also showed that 76.5% of patients are willing to recommend the care canter to other patients. The recent tilt towards market-focused approaches[38] of turning patient satisfaction responses into a quality improvement tool for overall organizational performance can only be useful if strategies for boosting patient centricity in healthcare delivery are vigorously pursued. This evidence will place a demand on health service organizations to prioritize conduct of periodic patients' evaluation as part of their organizational clinical governance initiative.

The findings from this study will be useful to health system managers and health regulators in improving the quality of care received by patients by eliminating the factors that reduce satisfaction ratings at the various stations. Efforts at reducing waiting time will also improve care quality and boast the outcome of care.

## Conclusion

Patients' satisfaction with orthopaedic services vary across service stations, primary complaints, and perception of system responsiveness. More efforts at addressing the provider-related variables may improve satisfaction ratings and increase the demand for orthopaedic care.

## Declarations

***Ethical consideration:*** Ethical approval was obtained from the research ethics committee of the University of Port Harcourt with reference code: **UPH/SPH/HSM/MSC/2018/PT/001** and permission was obtained from the heads of the accident/emergency and orthopaedic departments of the teaching. Individual patients recruited into the study gave verbal consents after full disclosure of the objectives of the study and their involvement. Patients were at liberty to withdraw their participation at any time if they choose to with assurances that this will not affect their care in the hospital.

***Authors' contribution:*** *Both authors were involved in the conceptualization, development, conduct and publication of this research work.*

***Conflict of interest****: Nil conflict of interest*

***Funding:*** *This research was self-funded*

***Acknowledgement****: Authors wish to appreciate the staff and patients in the departments of accident/emergency and orthopaedic for their cooperation during this study*

## References

1. Safety WP, World Health Organization. Conceptual framework for the international classification for patient safety version 1.1: final technical report January 2009. World Health Organization; 2010.
2. Donabedian A. An introduction to quality assurance in health care. Oxford University Press; 2002 Dec 26.
3. Wensing M, Elwyn G. Research on patients' views in the evaluation and improvement of quality of care. Quality & Safety in Health Care.11(2):153-7.



Print ISSN: 0189-9287 Online ISSN: 2992-345X

4. Sitzia J, Wood N. Patient satisfaction: a review of issues and concepts. Social science & medicine. 1997 Dec 1;45(12):1829-43.
5. Lewis JR. Patient views on quality care in general practice: literature review. Social science & medicine. 1994;39(5):655-70
6. Ogaji DS. Patient-focused quality improvement in primary health care: opportunities with the patient evaluation scale. Journal of Community Medicine and Primary Health Care. 2017 Nov 2;29(2):84-96.
7. Coulter A. Evaluating the outcomes of health care. InThe sociology of the health service 2002 Sep 11 (pp. 125-149). Routledge.
8. Kevin, C., & Rohrich, M., (2009). Measuring quality of surgical care: is it attainable? Plast. Reconstruc. Surg, 123: 741-749
9. Joshi K, Sochaliya K, Purani S, Kartha G. Patient satisfaction about health care services: A cross sectional study of patients who visit the outpatient department of a civil hospital at Surendranagar, Gujarat. Int J Med Sci Public Health. 2013 Jul 1;2(3):659-3.
10. Mohd, A., & Chakravarty, A., (2014). Patient satisfaction with services of the outpatient department. Med J Armed Forces, India 2014; 70:237-42.
11. Bhattacharya, A., Menon, P., Koushal, V., & Rao, K.L. (2003). Study of patient satisfaction in a tertiary referral hospital. J Acad Hosp Adm, 15:2003-6
12. Kulkarni, M.V., Dasgupta, S., Deoke, A. R., & Nayse, N., (2011). Study of satisfaction of patients admitted in a tertiary care hospital in Nagpur. Nat J Community Med, 2:37-9.
13. University of Port Harcourt Teaching Hospital, 5-year strategic plan (2021 - 2026), UPTH, Alakahia.
14. Cochran WG. Sampling techniques. john wiley & sons; 1977.
15. Okonta KE, Ogaji DS. Predictors of patient satisfaction with surgical care in a low-middle-income country. International Journal of Academic Medicine. 2021 Oct 1;7(4):233-239
16. Robone, S., Rice, N., & Smith, P. C., (2011). Health systems' responsiveness and its characteristics: a cross-country comparative analysis. Health Serv Res, 46(6pt2):2079-100
17. Larsen DE, Rootman I. Physician role performance and patient satisfaction. Social Science & Medicine (1967). 1976 Jan 1;10(1):29-32.
18. Henley B, Davis MS. Satisfaction and dissatisfaction: A study of the chronically ill aged patient. Journal of Health and Social Behavior. 1967 Mar 1:65-75.
19. Jackson, J. L., Chamberlin, J., & Kroenke, K., (2001). Predictors of patient satisfaction. Soc Sci Med. 52(4):609-20
20. Chariatte, V., Berchtold, A., Akre, C., Michaud, P., A., & Suris, J., C. (2007). Missed appointments in an outpatient clinic for adolescents, an approach to predict the risk of missing. J Adolesc Health, 43: 38–45. 10.1016/j.jadohealth.12.017
21. Maxwell, S., Maljanian, R., Horowitz, S., Pianka, M. A., Cabrera, Y., Greene, J., (2001) Effectiveness of reminder systems on appointment adherence rates. J Health Care Poor Underserv, 12:504–14. 10.1353/hpu.2010.0766
22. Ayele WM, Ewunetu A, Chanie MG. Level of satisfaction and associated factors among patients attending outpatient departments of south Wollo health facilities, Ethiopia. PLOS Global Public Health. 2022 Jul 21;2(7):e0000761.
23. Udonwa NE, Ogbonna UK. Patient-related factors influencing satisfaction in the patient-doctor encounters at the general outpatient clinic of the university of calabar teaching hospital, calabar, Nigeria. International Journal of Family Medicine. 2012;2012.
24. Olijera L, Gebresilasses S. Satisfaction with outpatient health services at Jimma hospital, South West Ethiopia. Ethiop. 2001. 15(3):179–84.
25. Mezemir R, Getachew D, Gebreslassie M. Patients' Satisfaction and its determinants in Outpatient Department of Deberebirhan Referral Hospital, North Shoa, Ethiopia. 3: 191, 2014. 2014.
26. Tayelgn A, Desalegn T Zegeye and Yigzaw Kebede. Mothers' satisfaction with referral hospital delivery service in Amhara Region, Ethiopia. 2011. 11:78.
27. Osiya, D. A., Ogaji, D. S., & Onotai, L., (2007) Patients' satisfaction with healthcare: comparing general practice services in a tertiary and primary healthcare settings. Nigerian Health J, 17: 264-77
28. Okonta KE, Ogaji DS. Relationship between patient satisfaction and willingness to comply with physicians' recommendation in referral surgical outpatient clinic in Nigeria. Journal of Patient Experience. Dec;7(6):1556-62.
29. Adhikary G; Shawon, M.S.R., 2020 Ali, M.W., Shamsuzzaman, M., Ahmed, S., Shackelford, K.A., et al. (2018). Factors influencing patients' satisfaction at different levels of health facilities in



Print ISSN: 0189-9287 Online ISSN: 2992-345X

Bangladesh: Results from patient exit interviews. PLoS ONE 13(5): e0196643. https://doi.org/10.1371/journal.pone.0196643
30. Pascoe, G. C., (1983) Patients' satisfaction in primary health care: a literature review and analysis. Eval Program Plann. United States, 6: 185–210. Pmid: 10299618
31. DuPree E, Anderson R, Nash IS. Improving quality in healthcare: start with the patient. Mount Sinai Journal of Medicine: A Journal of Translational and Personalized Medicine. 2011 Nov;78(6):813-9.
32. Ogaji DS, Mezie-Okoye MM. Waiting time and patient satisfaction: Survey of patients seeking care at the general outpatient clinic of the University of Port Harcourt Teaching Hospital. Port Harcourt Medical Journal. 2017 Sep 1;11(3):148.
33. Teshome Mulisa, Fasil Tessema, Hailu Merga, Patients' satisfaction towards radiological service and associated factors in Hawassa University Teaching and referral hospital, Southern Ethiopia. BMC Health Serv Res. 2017; 17: 441doi: 10.1186/s12913-017-2384-z
34. Ahmed T, Assefa N, Demisie A, Kenay A. Levels of adult patients' satisfaction with nursing care in selected public hospitals in Ethiopia. Int J Health Sci (Qassim). 2014 Oct;8 (4):371-9.
35. Batbaatar, E., Dorjdagva, J., Luvsannyam, A., Savino, M.M., & Amenta, P. (2016). Determinants of patients' satisfaction: a systematic review. Perspect Public Health, 1–13. Pmid: 27004489
36. Junewicz, A., & Youngner, S. J., (2015). Patient-satisfaction surveys on a scale of 0 to 10: Improving health care, or leading it astray? Hastings Cent Rep, 45: 43–51. pmid:25753653
37. Fang J, Liu L, Fang P. What is the most important factor affecting patient satisfaction - a study based on gamma coefficient. Patient Prefer Adherence. 2019 Apr 10; 13:515-525. doi: 10.2147/PPA.S197015.
38. Marley KA, Collier DA, Meyer Goldstein S. The role of clinical and process quality in achieving patient satisfaction in hospitals. Decision Sciences. 2004 Aug;35(3):349-69.



Print ISSN: 0189-9287 Online ISSN: 2992-345X