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Evaluation of Healthcare Service Delivery in Adamawa, Nigeria: A Comparative Analysis of Findings from 3 Patient's Satisfaction Metrics - Net Promoter Score (NPS), Satisfaction Survey & Quality of Care Assessment

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Abstract

Efforts to expand access or reduce healthcare service costs may do little to increase access and utilisation, when quality of care is perceived as unsatisfactory. Strategic use of multiple patients' experience surveys can help health systems address concerns of dissatisfied clients, improve patient loyalty, and help providers tailor their services to meet patient expectations. The aim of this study is to conduct a comparative assessment of perception of the quality of health service delivered by health facilities in five wards using three client-reported experience measures, namely, patient satisfaction surveys, Net Promoter Score (NPS) studies, and patient overall quality of care assessments. This study adopted the descriptive analytical study using the cross-sectional quantitative method. The overall satisfaction rate, proportion of promoters, and NPS score obtained are 70%, 14.5%, and -40.7, respectively. Findings show overall satisfaction rates of 70% is far higher than the proportion of respondents (14.5%) who were willing to recommend health facilities to friends and families. The distribution of satisfaction rates compared to the proportion of promoters (in parentheses) is as follows: 89.4% (34.2%) in Damare; 86.7% (14.5%) in Imburu; 40.8% (15.4%) in Mbilla; 58.7% (1.2%) in Dumne; and 63.5% (4.3%) in Sabon Pegi. This study has demonstrated the higher reliability of the NPS study over satisfaction surveys, further establishing the complementary value of using at least two metrics over one. The far lesser proportion of promoters compared to satisfied respondents suggests relying on one metric alone provides limited perspectives on clients' sentiments about the quality of services offered by health facilities.

Keywords: *Adamawa, Health Facility Assessment, Net Promoter Score (NPS), Patient Satisfaction, Quality of Service.*

Introduction

The challenge of expanding access, reducing cost, and optimising the quality of services are the three major bottlenecks faced by healthcare delivery systems in many countries. Among these three key determinants of health outcomes, the predominant influence of perceived quality of service on patient behaviour around satisfaction, utilisation, referrals, and choice has been shown to be higher than the influence of expansion of access and cost reduction [1]. Therefore, expanding access to healthcare or reducing costs may do little to increase utilisation if patients' confidence or perception of the quality of health service is lower than expected. So perceived quality of care from a patient or client perspective is considered a powerful driver of healthcare utilisation, an important measure of

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health systems, and a promoter of continuous quality improvement in health facilities [2, 3]. In effect, when healthcare institutions are unable to, or cannot be trusted to, guarantee a threshold level of quality, healthcare services provided by these facilities will be underutilised or used as a measure of last resort [1].

To buttress the relatively higher influence that perception of quality has on patient behaviour, low utilisation of facility services persisted despite considerable investment in healthcare to increase access and utilisation [4]. This is due to patients' pre-existing negative perception of quality of service delivered by a given facility. Similar outcomes were observed in Vietnam and Uganda, where poor and negative perception of service quality resulted in greater patronage of private healthcare providers [1, 5]. There are suggestions that "historical patterns, competing interests, and institutional practices" have contributed in expanding reliance on private sector service delivery in response to public health systems underperformance. This raises the question, "to what extent ongoing UHC reform processes promote continued collaboration in a way that strengthens public healthcare delivery" especially in countries within the Global South [6]. Also, evidence abounds showing that members of the public are likely to pay more for healthcare services provided by institutions with a reputation for providing services that satisfy the needs and expectations of customers [5].

Nonetheless, some healthcare systems still rely only on standards generated by professionals to evaluate performance during quality assurance programmes. When assessments are restricted to care provider-anchored measures of structure, process, and outcome variables, without taking consideration of patients' perceptions of the quality and adequacy of care, findings from such assessments rarely accurately reflect the true status of performance of health facilities [7, 8]. This subjectivity is attributed to suggestions that a patient's appraisal is based on expectations which may vary with time [9]. Hence, by integrating patient perspective, quality management of healthcare facilities can ensure that patients are at the centre of concern during quality and safety improvement engagements. It also ensures operational, managerial, and organisational frameworks adopted are tailored to foster the development of sustainable management strategy [10].

Studies have demonstrated the importance of assessing patients' perception of quality of service using multiple metrics. This is based on suggestions that a more effective measurement of patient satisfaction of care requires the integration of real-time feedback tools, qualitative methods, standardised quantitative surveys, and online review monitoring [4, 11]. It is also suggested that the adoption of even just two metrics to assess a patient's overall experience will result in incomplete findings that are potentially misleading. This is due in part to the multidimensional and complex nature of patient perception. Consequently, the multidimensional nature of satisfaction implies that a single-question measure is clearly inadequate. This is in light of the fact that eight major dimensions of satisfaction have been identified by following an extensive review of literature. These dimensions include art of care, technical quality, accessibility, efficacy, cost, physical environment, availability, and continuity of care [8].

Furthermore, patient satisfaction is an important prerequisite for strategic decision-making in health systems management. Patient satisfaction surveys are now increasingly used as a management tool to address the challenges of performance and access to healthcare. The tool has also helped government institutions identify target groups, redefine objectives, clarify indicators of performance, and establish performance information systems [12]. It is therefore strongly recommended that health systems establish frameworks for conducting routine assessments of customers' perceptions

of the quality of healthcare service delivery. Empirical studies evaluating patients' perception of health services abound, but limited empirical research around this subject has been published in Adamawa State. There is, in fact, no published study investigating the relationship between patient perceptions and willingness to recommend service to others. Insights from such research can empower policymakers, health insurance scheme managers, health systems managers, and health facility managers with the insights needed to improve the standard of service and fast-track attainment of universal health coverage.

Despite the demonstrated benefits of patient-perceived quality of care in driving healthcare utilisation, methodological and theoretical problems have been attributed to a subjective assessment of care by patients. It is considered that a patient's lack of technical knowledge predisposes him or her to inaccurate qualitative judgements [7]. The methodology and findings of the satisfaction survey have also been criticised for unreliability associated with the relatively high positive satisfaction ratings associated with findings from most satisfaction surveys. The high likelihood of positive satisfaction ratings is attributed to social desirability, implicit threat, hesitancy to express negative opinions, location of testing, and item wording [8]. Furthermore, level of satisfaction is also largely influenced by patients' expectations, which are in turn impacted by prior knowledge, experience, and attitude. These factors contribute to providing context within which expectations about patients' behaviour, health outcomes, and health systems' performances are shaped. In addition, expectations are also shaped by social status, previous healthcare experience, and educational attainment as some of the contextual factors shaping expectations [11, 13].

The goal of this study, therefore, is to assess comparatively, patients' or caregivers' perception of the quality of healthcare service delivery in 5 wards using three assessment metrics, namely (i) the patient's satisfaction survey, (ii) the Net Promoter Score (NPS), and (iii) the patient's perception of the quality-of-care assessment. This study, therefore, entails a comparative analysis of findings from all five study sites and also 3 different patient satisfaction metrics. Based on observed findings, the study also discusses the comparative advantage of using multiple metrics over a single metric to assess the performance of health facilities.

Materials and Methods

Study Setting

The study was carried out in five wards within four local government areas (LGAs) in Adamawa, Nigeria. The study was conducted in the following purposively selected wards: Damare in Girei LGA, Sabon Pegi and Imburu wards in Numan LGA, Dumne in Song LGA, and Mbilla in Mayobelwa LGA. The primary target of the combined household and facility-based survey were mainly residents living within the primary and secondary health facility catchment area, including those living around a Basic Healthcare Provision Fund (BHCPF)-supported health facility. These locations were selected based on the assumption that households within these settings would have been exposed to the minimum standard of service delivery expected to encourage interest in community-based health insurance enrolment when established. The population distribution for selected LGAs includes Mayobelwa (241,961), Song (260,000), Numan, Yola South (310,667), Girei, and Yola North (316,213). Enumerators prioritised respondents who have had at least three direct experiences as clients of these health facilities. Excluded from this survey are non-residents, including those with either visual, learning or speaking disabilities or who were sick.

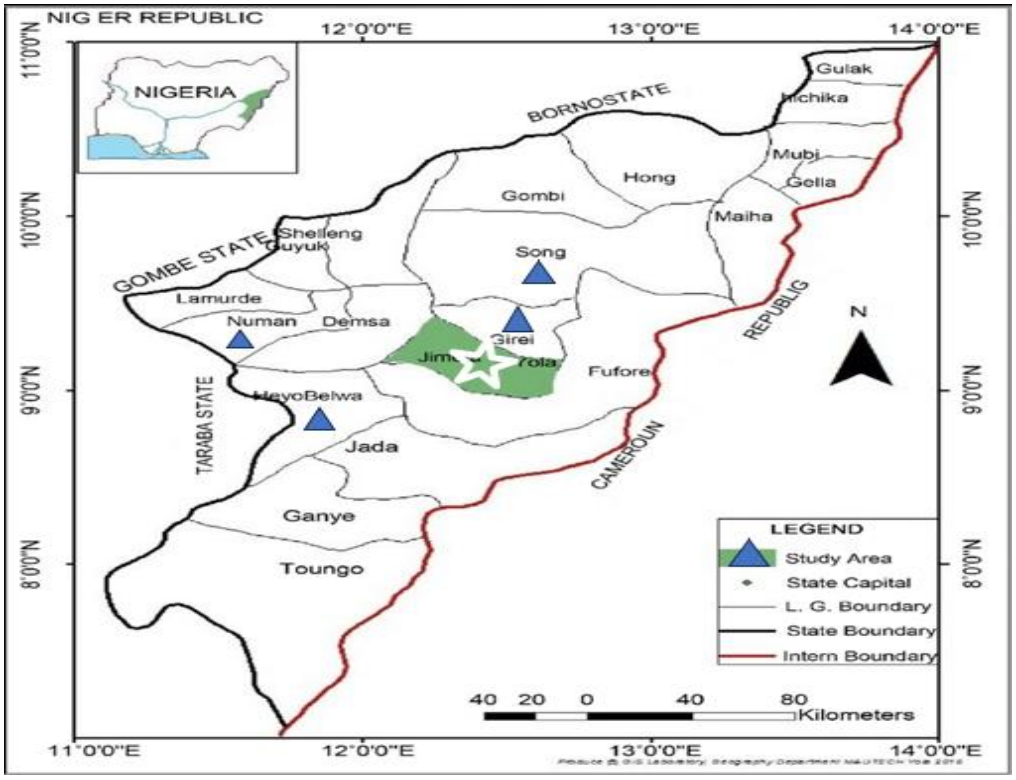

Figure. Map of Adamawa showing study areas (Source: Adapted from Adebayo and Tukur (1999) with slight modifications [14]

Study Design

This study adopted the descriptive analytical study design using the cross-sectional quantitative method of assessing patient perception of quality of healthcare delivery in five wards located within four purposively selected local government areas (LGAs). Sample sizes for each of the five study locations include 480 for Damare, 409 for Dumne, 449 for Imburu, 422 for Mbilla, and 439 for Sabon Pegi, located in Girei, Song, Numan, Mayobelwa, and Numan LGAs, respectively. The sample size for each community was determined using Cochran's (1963 and 1975) formula.

Data Collection and Tools

The study was conducted between November 2024 and January 2025. Data was collected by trained surveyors using pretested questionnaires. A total of 55 enumerators translated the English-based questionnaires into either Hausa or Fulfulde during administration. Out of the 2,539 households targeted, 2,309 responded, giving a response rate of 90.9%. The questionnaire enabled assessment of the quality of healthcare service delivery from a client perspective using the following quality performance assessment metrics, namely: (a) patient satisfaction questionnaire, (b) Net Promoter Score (NPS) questionnaire, and (c) patient perceived quality assessment questionnaire.

The first metric, the patient satisfaction survey, assesses the patient's overall experience with health facilities. This single-item questionnaire requires respondents to choose one of five responses to 'How they would rate their overall experience of health services provided by health facilities they patronise. The patients' satisfaction questionnaire assesses overall experience with health facilities. The single-item questionnaire required respondents to choose one of five options around 'How they would rate their overall experience with a health facility.' They are required to choose 1 for very dissatisfied. 2-Satisfied, 3-Neither

satisfied nor dissatisfied, 4-Dissatisfied, and 5-Very dissatisfied.

The second metric, the patient-perceived quality assessment questionnaire, involves assessment of several domains of quality of care from a patient perspective. In this study. The questionnaire is adapted to contain mainly the quality of medical care. patient's safety, and patient's rights domains. This questionnaire assesses clients' assessment of the availability and quality of health facility personnel, drugs, drug information, privacy, and other services. Here respondents choose between Excellent, Very Good, Good, Fair, and Poor. The questions under the quality of medical care domain include: (i). client's ratings of the availability and quality of doctors, nurses, and drugs; (ii). attitude of health facility staff. Questions under the patient safety and rights domain include (iii) patient education of drug and injection use and (iv) the provision of privacy.

The third metric, the Net Promoter Score (NPS), is a single-item questionnaire which provides a summative assessment of patient experience. The questionnaire requires respondents to answer the question – "How likely are you to recommend this service to your friends and family?" Responses to this question are assigned scores ranging from 0 to 10 [15]. NPS measures the extent to which a health facility converts customers into advocates or promoters of their products and/or services by monitoring and analysing three groups. The first are "promoters", who are highly satisfied customers who are more likely to recommend the brand to others; the second group are "passives", who believe they received satisfactory service but lack loyalty and incentive to recommend; and the third group are the "detractors", who are considered dissatisfied customers that negatively impact the company's growth and reputation. Promoters are assigned a score of 9 or 10, passives are assigned a score of 7 or 8, and detractors are assigned a score of 0 to 6. The overall Net Promoter Score is obtained by subtracting the percentage of customers who are detractors from the percentage of customers who are promoters [16].

Data Analysis

After data cleaning and validation, respondents' data was then exported and subsequently imported into SPSS version 30.0 and Microsoft Excel for data analysis. Analysed data was presented in tables in the form of frequencies, percentages, mean values and standard deviations. Correlation and regression analysis was also done to understand relationship between variable, and their level of statistical significance.

Ethical Consideration

The study was approved by the Adamawa State Ministry of Health. Ethical approval was issued on 30th May, 2024. Texila American University provided a bona fide letter of introduction. Enumerators were mandated to obtain oral informed consent from willing participants. The majorly kobo collect toolkit is designed not to proceed without informed consent checklist being checked. Enumerators were also required to assure all participants that their responses will be treated as confidential and held privately and that data was strictly for academic purposes. Participants were also informed of their right to discontinue the exercise at any time during the course of an ongoing interview session.

Results

(A). Socio-demographic Characteristics

From table 1, it is observed that the highest mean age was recorded in Imburu (45.83), Sabon Pegi (44.15), and Dumne (44.01). The distribution of elderly participants (above 65 years) is highest in Imburu with 54 (12%) and lowest in Mbilla with 0 (0%). Deviation from the mean was higher in Mbilla and lowest in Sabon Pegi ward. The majority of respondents fell within the age groups of 30 to 39 (31.1%) and 40 to 49 (29.1%). Overall, farmers,

numbered at 44% (968), were the most prevalent occupation in all five communities, followed by traders with 24.5% (539). On average, 70.5% (1551) of respondents considered the nearest health facility to their place of residence as their most preferred place for seeking care, while 39.8% (875) reportedly visited public health facilities when sick. The overall proportion of respondents living in rural areas is 78.9% (1735).

The proportion of respondents living within urban areas is distributed as follows: 72.3% (347) in Damare; 0.7% (3) in Dumne; 11.8% (50) in Imburu; 11.8% (50) in Mbilla; and 3.5% (16) in Sabon pegi.

(B). Descriptive Statistics

Descriptive statistics analysis presented in table 14 below shows the mean age of respondents in the entire study to be 42.25. The lowest mean age of study participants ranged from 39.3 in Damare to 39.22 in Mbilla. The highest mean ages were recorded in Imburu (45.83), Sabon Pegi (44.15), and Dumne (44.01). The distribution of elderly participants was therefore highest in Imburu with 54 (12%) and lowest in Mbilla with 0 (0%). Deviation from the mean was higher in Mbilla and lowest in Sabon Pegi ward.

The mean number of children was lowest in Damare (2.44) and highest in Sabon Pegi (3.64) and Dumne (3.61). The number of children in households ranged from 0 to 9 across all 5 communities. The mean number of persons in households ranged from 2 to 11 in Damare, 2 to 13 in Dumne, 2 to 13 in Imburu, 2 to 14 in Mbilla, and 2 to 15 in Sabon Pegi. Similarly, the mean number of persons in a household shows that a relatively lower number of persons per household was found in Damare (4.33).

(C). Patient Experience Measures

Net Promoter Score (NPS) Analysis

Table 2 highlights the result of the Net Promoter Score (NPS) assessment, which is a measure of clients' or customers' experience and loyalty. The NPS for Imburu, Mbilla, and Sabon Pegi are -34.9%, -42.7%, and -46.3%. Overall, the NPS for all locations is –40.7%. This is shown in table 3, where the percentage of respondents who rated the health facilities 0 to 6, known as the detractors, was more than three times higher than the percentage who rated the health facilities 9 to 10, known as promoters. So, with an NPS value of -40.7%, the proportion of potential promoters (highly satisfied clients) of care services is 14.5%, while the proportion of passives (satisfied clients) and detractors (dissatisfied clients) are 55.2% and 30.4%, respectively.

Results show that Dumne, with the highest rural population of 99.3%, a mean age of 45.83, and the lowest population of promoters at 1.2% (5), also has the highest population of detractors at 87.8% (359), which are those who provided a rating of 0 to 6 for how likely they are willing to recommend their health facility to friends and family. Detractors, who consist mainly of unsatisfied customers and who are much less likely to recommend a health facility, are highest in Dumne (87.8%) and lowest in Damare (34.4%). Damare, with 27% of respondents living in rural areas, also has the highest percentage of promoters (34.2%) and the lowest percentage of detractors (34.4%) across all 5 study locations. Imburu and Sabon Pegi, which are locations within the same LGA (Numan), recorded similar percentages of detractors: 49.4% (222) and 50.6% (222), respectively. The rural populations in Imburu and Sabon Pegi are 88.2% (372) and 96.4% (423), respectively. The percentage of promoters in Mbilla, Imburu, Sabon Pegi and Dumne were 15.4% (65), 14.4% (65), 4.3% (19), and 5% (1.2), respectively.

Table 1. Socio-demographic Characteristics by Ward

		Total	**Damare**	**Dumne**	**Imburu**	**Mbilla**	**Sabon Pegi**
Independent Variable		Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)
Total		2199 (100)	480 (100)	409 (100)	449 (100)	422 (100)	439 (100)
Age of Respondents	18 – 29	318 (14.5)	102 (21.3)	38 (9)	75 (16.7)	48 (11.4)	55 (12.5)
	30 – 39	684 (31.1)	180 (37.5)	101 (24.7)	97 (21.6)	175 (41.5)	131 (25.8)
	40 – 49	618 (28.1)	111(23.1)	153 (37.4)	106 (23.6)	148 (35.1)	100 (22.8)
	50 – 59	353 (16.1)	49 (10.2)	80 (19.6)	91 (20.3)	43 (10.2)	90 (20.5)
	60 – 65	106 (4.8)	19 (4.2)	26 (6.4)	26 (5.8)	8 (1.9)	27 (6.2)
	Above 65	120 (5.5)	19 (4)	11 (6.7)	54 (12.0)	0 (0)	36 (8.2)
Gender	Male	1369 (62.3)	277 (57.7)	301 (73.6)	213 (47.4)	336 (79.6)	242 (55.1)
	Female	830 (37.7)	203 (42.3)	108 (26.4)	236 (52.6)	86 (20.4)	197 (44.9)
Educational Status	Above tertiary education	37 (1.7)	10 (2.1)	4 (1.0)	10 (2.2)	7 (1.7)	6 (1.4)
	Tertiary	337 (15.3)	18 (16.9)	52 (12.7)	59 (13.1)	72 (17.1)	73 (16.6)
	Senior Secondary	1348 (61.3)	291 (60.6)	305 (74.6)	276 (61.5)	207 (49.1)	269 (61.3)
	Junior Secondary	128 (5.8)	9 (1.9)	1 (0.2)	31 (6.9)	19 (4.5)	68 (15.5)
	Primary education	195 (8.9)	62 (12.9)	27 (6.6)	52 (11.6)	48 (11.4)	8 (1.8)
	Others	154 (7.0)	27 (5.6)	20 (4.9)	21 (4.6)	71 (16.9)	15 (3.5)
Geographical location	Rural	1735 (78.9)	133 (27.7)	406 (99.3)	372 (88.2)	401 (89.3)	423 (96.4)
	Urban	464 (21.1)	347 (72.3)	3 (0.7)	50 (11.8)	50 (11.8)	16 (3.6)
Is the nearest health facility the most preferred?	Yes	1551 (70.5)	345 (71.9)	362 (88.5)	353 (78.6)	262 (62.1)	229 (52.2)
	No	648 (29.5)	135 (28,1)	47 (11.5)	96 (21.4)	160 (37.9)	210 (47.8)
Type of Health facility visited when sick	Private health facility	172 (7.8)	43 (9.0)	52 (12.7)	27 (6.0)	23 (5.5)	27 (6.2)
	Drug store/Pharmacy	309 (14.1)	100 (20.8)	114 (27.9)	29 (6.5)	38 (9.0)	28 (6.4)
	Government hospital	816 (37.1)	66 (13.8)	192 (46.9)	175 (39.0)	172 (40.8)	211 (48.1)
	Public health facility	875 (39.8)	258 (53.8)	50 (12.2)	214 (47.7)	185 (43.8)	168 (38.3)
	Others	27 (1.2)	13 (2.71)	0 (0)	0 (0)	4 (0.8)	5 (1.1)

Table 2. Descriptive Analysis of Key Socio-demographic Variables

	Damare		**Dumne**		**Imburu**		**Mbilla**		**Sabon Pegi**	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
Age of Respondent	39.3	11.819	44.01	11.274	45.83	15.603	39.22	8.885	44.15	13.925
Number of children	2.44	2.34	**3.61**	2.199	**3.43**	2.37	**3**	2.314	**3.64**	2.295
Number of children under 5 years	0.71	0.896	0.98	0.888	0.98	0.938	0.88	1.005	0.96	0.899
Number of adults between 18 and 64	1.1	1.328	1.8	1.317	1.8	1.377	1.6	1.438	1.7	1.167
Number of adults above 65	0.09	0.369	0.18	0.566	0.42	0.752	0.28	0.63	0.26	0.608
Total number. of persons in household	4.33	1.993	5.5	2.176	5.64	2.23	5.39	2.534	5.72	2.072
Duration of stay in location (Months)	95.71	117.68	373.77	178.73	99.37	132.15	251.09	176.21	129.26	379.85

The net promoter score was calculated for all 5 study locations by subtracting the percentage of detractors from the percentage of promoters. Calculated NPS values range from -100 to +100, with -100 being the poorest and +100 being the highest. Results of NPS analysis shown in table 3 show that all 5 locations have a negative NPS value ranging from -0.2 in Damare to -86.6 in Dumne. Respondents in Damare were more likely to recommend their health facilities compared to those from Dumne. This is due in part to the distribution of the percentage of respondents who rated their focal health facilities between 0 and 6 points and those who rated them 9 to 10. The NPS does not include ratings between 7 and 8 in computing these scores. The mean, median, mode, and standard deviation for ratings across all locations are 6.08, 6, 6, and 2.240.

Table 3. Net Promoter Score (NPS) Analysis by Study Location

	Rating (1 to 10)	**Damare**	**Dumne**	**Imburu**	**Mbilla**	**Sabon Pegi**
		Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)
On a scale of 1 to 10, how likely are you to recommend this health facility as good place to seek treatment to	10	0 (0)	0 (0)	2 (0.4)	0 (0)	1 (0.2)
	9	164 (34.2)	5 (1.2)	63 (14.0)	65 (15.4)	18 (4.1)
	8	101 (21.0)	21 (5.1)	96 (21.4)	42 (10.0)	111 (25.3)
	7	50 (10.4)	24 (5.9)	66 (14.7)	70 (16.6)	87 (19.8)
	6	98 (20.4)	103 (25.2)	133 (29.6)	92 (21.8)	61 (13.8)
	5	34 (7.1)	82 (20.0)	38 (8.5)	64 (15.2)	95 (21.6)
	4	7 (1.5)	48 (11.7)	7 (1.6)	32 (7.60	9 (2.1)
	3	1 (0.2)	35 (8.6)	2 (0.4)	16 (3.8)	39 (8.9)

a friend or family member?	2	2 (0.4)	52 (12.7)	1 (0.2)	12 (2.8)	1 (0.2)
	1	23 (4.8)	39 (0.5)	41 (9.1)	29 (6.9)	17 (3.9)
	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Total	480 (100)	409 (100)	449 (100)	422 (100)	439 (100)
Promoters	9 to 10	164 (34.2)	5 (1.2)	65 (14.5)	65 (15.4)	19 (4.3)
Neutral	7 to 8	151(31.5)	45 (11.0)	162 (36.1)	112 (26.5)	198 (45.1)
Detractors	0 to 6	165 (34.4)	359 (87.8)	222 (49.4)	245 (58.1)	222 (50.6)
Calculating NPS	Ratings	NPS	NPS	NPS	NPS	NPS
Percentage of promoters	9 to 10	34.20%	1.20%	14.50%	15.40%	4.30%
Percentage of detractors	0 to 6	34.40%	87.80%	49.40%	58.10%	50.60%
NPS = % Promoters - % Detractors	(9 to 10) – (0 to 6)	-0.2	-86.6	-34.9	-42.7	-46.3

Table 4. Net Promoter Score (NPS) Determination Findings

Rating	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Total**
Freq (%)	149 (6.80)	68 (3.10)	93 (4.20)	103 (4.70)	313 (14.20)	487 (22.10)	297 (13.50)	371 (16.80)	315 (14.3)	3 (0.10)	2199 (100)
Rating	1	2	3	4	5	6	7	8	9	10	10-Jan
	Detractors						Passives		Promoters		
Freq	1213						668		318		2199
%	55.21%						30.40%		14.50%		100%

Net Promoter Score (NPS): 14.5 – 55.21 = - 40.7%

Overall rating: Mean – 6.08; Median – 6; Mode – 6; Standard Deviation (SD) – 2.240.

Patients' Satisfaction Survey

Data expressing respondents' perception of level of satisfaction with healthcare service are presented in tables 4, 5, and 6 below. Table 4 shows the result of the respondent's overall experience with health facilities. Overall, across all 5 study sites, 70% (1,539) of respondents indicated they were either satisfied or very satisfied. Results indicate the highest level of satisfaction of 89.4% (429) was recorded in Damare with a rural population of 27.7%. Imburu, with a rural population of 89.3%, recorded the next highest satisfaction rating of 86.7% (389).

Lower percentages of 40.8%, 58.7%, and 63.5% were documented in Mbilla, Dumne, and Sabon Pegi, respectively. The highest dissatisfaction levels were observed in Dumne, where 30.3% of respondents reported being either dissatisfied or very dissatisfied with the health service delivery at the health facility they patronise. Those who reported being neither satisfied nor dissatisfied (neutral) were 45.7% in Mbilla and 33% in Sabon Pegi. Neutrality was therefore highest in these 2 study locations. Apart from Mbilla, with satisfaction levels of 46.9%, all other 4 study locations had satisfaction levels above 50%. i.e., Dumne (58.7%), Sabon Pegi (64.5%), Imburu (86.7%), and Damare (86.7%). Table 6 shows that while the average percentage of either satisfied or very satisfied clients from the satisfaction survey is a much higher 70%, the average percentage of promoters (highly satisfied

clients) from the NPS study is 14.5%. And while the average percentage of promoters from the satisfaction survey is a much higher 89.4%. Damare, Dumne, Imburu, Mbilla, and Sabon Pegi, with proportions of promoters amounting to 34.2%, 1.2%, 14.5%, 15.4%, and 4.3%, respectively, also have 89.4%, 58.7%, 86.7%, 40.8%, and 63.5%, respectively, who rated healthcare services as either satisfactory or very satisfactory based on findings from the satisfaction survey. This implies that the proportion of clients who rated healthcare services as satisfactory is far higher than the proportion of promoters from the NPS evaluation in Damare (89.4% for satisfied clients vs 34.2% for promoters); Dumne (58.7% vs 1.2%); Imburu (86.7% vs 14.5%); Mbilla (40.8% vs 15.4%); and Sabon Pegi (63.5% vs 4.3%).

Table 5. Client Overall Satisfaction Rating for Healthcare Service Delivery at Health Facility

		Damare	**Dumne**	**Imburu**	**Mbilla**	**Sabon Pegi**
		Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)
How would you RATE your overall experience with this health facility? Choose between 1 for Very Dissatisfied, and 5 for Very Satisfied	Very Satisfied	20 (4.2)	11 (2.7)	87 (19.4)	32 (7.6)	14 (3.2)
	Satisfied	409 (85,2)	229 (56.0)	302 (67.3)	166 (39.3)	269 (61.3)
	Neither satisfied or dissatisfied	32 (6.7)	45 (11.0)	53 (11.8)	193 (45.7)	145 (33.0)
	Dissatisfied	16 (3.3)	40 (9.8)	1 (0.2)	21 (6.0)	5 (1.1)
	Very dissatisfied	3 (0.6)	84 (20.5)	6 (1.3)	10 (2.4)	6 (1.4)
	Total	480 (100)	409 (100)	449 (100)	422 (100)	439 (100)

Table 6. Rating of Overall Experience of Health Facility Service Delivery by Ward

	Very Satisfied & Satisfied	**NPS (Promoters)**	**PPS Satisfied**	**NPS (Promoters)**	**PPS Satisfied**	**NPS (Passives)**
Damare	429 (89.4%)	164 (34.2%)	409 (85.2%)	164 (34.2%)	409 (85.2%)	151(31.5%)
Dumne	240 (58.7%)	5 (1.2%)	229 (56.0%)	5 (1.2%)	229 (56.0%)	45 (11.0%)
Imburu	389 (86.7%)	65 (14.5%)	302 (67.3%)	65 (14.5%)	302 (67.3%)	162 (36.1%)
Mbilla	198 (40.8%)	65 (15.4%)	166 (39.3%)	65 (15.4%)	166 (39.3%)	112 (26.5%)
Sabon Pegi	283 (63.5%)	19 (4.3%)	269 (61.3%)	19 (4.3%)	269 (61.3%)	129 (29.4%)
Average	**1,539 (70%)**	**318 (14.5%)**	**1375 (62.5%)**	**318 (14.5%)**	**1375 (62.5%)**	**668 (30.4%)**

Patient's Perspective on Quality Assessment (Perception of Quality of Care)

Table 7 shows the positive ratings for the quality of doctors or health personnel. The proportion of respondents who provided positive ratings (either good, very good or excellent) for the quality of the doctor are distributed as follows: 91.8% for Damare, 93.7% for Dumne, 78.4% for Imburu, 83.7% for Mbilla, and 89.1% for Sabon Pegi. On the other hand, about 1 in every 5 respondents gave a negative rating (fair or poor) for the quality of doctors in Imburu. Ratings for the quality of nurses were negative (either fair or poor) for more than half of respondents in Dumne (53.6%) and Mbilla (54.5%). From table 7, it is also observed that respondents who provided positive ratings for the availability of doctors or health personnel were 89.4% in Damare, 86.7% in Imburu, 64.5% in Sabon Pegi and 58.7% in

Dumne. The highest proportion of respondents who gave negative ratings for the availability of doctors (health personnel) was observed in Dumne (30.3%).

On the availability of nurses, all study locations apart from Mbilla (45.7%) rated their health facilities positive (either good, very good or excellent) at a percentage higher than 82%. Damare, Dumne, Imburu and Sabon Pegi recorded 95.2%, 89%, and 94.3% of respondents who provided positive ratings for the availability of nurses. At least 4 out of every 5 respondents in all 5 study locations rated their facilities positively (good, very good, or excellent) for quality of drugs provided. Damare, Dumne, Imburu, Mbilla and Sabon Pegi recorded 95.2%, 81.4%, 81.3%, 89.3%, and 91.8%, respectively.

Perception about health workers' attitudes was positive in at least 4 out of every 5 respondents in Damare, Dumne, Imburu and Sabon Pegi. Rating was lowest in Mbilla, with only half of the respondents rating their health workers' attitude or politeness as either good, very good, or excellent at 50%. Excellent ratings were documented by at least 1 in every 5 respondents in Damare (21.9%) and Dumne (21.5%). From table 8, it is observed that education of patients or carers about medications they receive was reportedly positive and ranged from 79.5% to 91.8% in all study locations apart from Mbilla, where 44.8% of respondents gave a negative rating (either poor or fair). A relatively lower percentage of respondents rated their facilities positively (either good, very good, or excellent) on the provision of privacy.

Table 7. Rating of Quality and Availability of Health Personnel at Health Facilities

	Rating	**Damare**	**Dumne**	**Imburu**	**Mbilla**	**Sabon Pegi –**
		(N-480)	(N-409)	(N-449)	(N-422)	(N-439)
		Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)
Availability of doctors during your visits to the health facility/hospital	Excellent	109 (22.7)	137 (33.5)	65 (14.5)	8 (1.9)	20 (4.6)
	Very Good	162 (33.8)	57 (13.9)	110 (24.5)	86 (20.4)	77 (17.5)
	Good	150 (31.3)	170 (41.6)	160 (35.6)	133 (31.5)	295 (67.2)
	Fair	46 (9.6)	44 (10.8)	107 (23.8)	178 (42.2)	42 (6.6)
	Poor	13 (2.7)	1 (0.2)	7 (1.6)	17 (4.0)	5 (1.1)
Availability of NURSES when you visited the health facility	Excellent	100 (20.9)	104 (25.4)	61 (13.6)	18 (4.3)	13 (3.0)
	Very Good	153 (31.9)	84 (20.5)	118 (26.3)	50 (11.8)	80 (18.2)
	Good	204 (42.5)	176 (43.0)	191 (42.5)	125 (29.6)	321 (73.1)
	Fair	22 (4.6)	44 (10.8)	77 (17.1)	199 (47.2)	21 (4.8)
	Poor	1 (0.2)	1 (0.2)	2 (0.4)	30 (7.1)	4 (0.9)
Quality of doctors at the health facility	Excellent	108 (22.5)	94 (23.0)	61 (13.6)	18 (4.3)	16 (3.6)
	Very Good	162 (33.8)	101 (24.7)	95 (21.2)	92 (21.8)	72 (16.4)
	Good	171 (35.6)	188 (46.0)	196 (43.7)	243 (57.6)	303 (69.0)
	Fair	32 (6.7)	25 (6.1)	92 (20.5)	55 (13.0)	43 (9.8)
	Poor	7 (1.5)	1 (0.2)	5 (1.1)	14 (3.3)	5 (1.1)
Quality of NURSES at the health facility	Excellent	106 (22.1)	99 (24.2)	62 (13.8)	16 (3.8)	14 (3.2)
	Very Good	143 (29.8)	91 (22.2)	107 (23.8)	59 (14.0)	79 (18.0)
	Good	206 (42.9)	0 (0)	206 (45.9)	117 (27.7)	321 (73.1)
	Fair	23 (4.8)	31 (7.6)	71 (15.8)	192 (45.5)	23 (5.2)
	Poor	2 (0.4)	188 (46.0)	3 (0.7)	38 (9.0	2 (0.5)
	Excellent	110 (22.9)	99 (24.2)	65 (14.5)	13 (3.1)	20 (4.6)

Quality of DRUGS given to you for treatment	Very Good	164 (34.2)	86 (21.0)	109 (24.3)	124 (29.4)	94 (21.4)
	Good	183 (38.1)	148 (36.2)	191 (42.5)	242 (57.3)	289 (65.8)
	Fair	21 (4.4)	74 (18.1)	82 (18.3)	42 (10.0)	33 (7.5)
	Poor	2 (0.4)	2 (0.5)	2 (0.4)	1 (0.2)	3 (0.7)
Attitude/Politeness of health facility staff	Excellent	105 (21.9)	88 (21.5)	64 (14.3)	20 (4.7)	18 (4.1)
	Very Good	156 (32.5)	96 (23.5)	108 (24.1)	70 (16.6)	104 (23.7)
	Good	169 (35.2)	142 (34.7)	193 (43.0)	121 (28.7)	286 (65.1)
	Fair	45 (9.4)	82 (20.0)	80 (17.8)	187 (44.3)	28 (6.4)
	Poor	5 (1.0)	1 (0.2)	4 (0.9)	24 (5.7)	3 (0.7)

Table 8. Perspective on Quality of Patient Education and Privacy Provided

		Damare	**Dumne**	**Imburu**	**Mbilla**	**Sabon Pegi**
		Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)
Effort of nurse to educate you about the name and uses of injections or drugs you or your child received.	Excellent	105 (21.9)	91 (22.2)	69 (15.4)	22 (5.2)	19 (4.3)
	Very Good	165 (34.4)	94 (23.0)	109 (24.3)	96 (22.7)	91 (20.7)
	Good	159 (33.1)	140 (34.2)	183 (40.8)	115 (27.3)	293 (66.7)
	Fair	49 (10.2)	83 (20.3)	76 (16.9)	166 (39.3)	29 (6.6)
	Poor	2 (0.4)	1 (0.2)	12 (2.7)	23 (5.5)	7 (1.6)
	Total	480 (100)	409 (100)	449 (100)	422 (100)	439 (100)
How can you rate the provision of PRIVACY at the health facility.	Excellent	169 (35.2)	96 (23.5)	148 (33.0)	241 (57.1)	106 (24.1)
	Very Good	1 (0.2)	2 (0.5)	3 (0.7)	8 (1.9)	2 (0.5)
	Good	170 (35.4)	134 (32.8)	181 (40.3)	106 (25.1)	281 (64.0)
	Fair	32 (6.7)	85 (20.8)	49 (10.9)	35 (8.3)	33 (7.5)
	Poor	108 (22.6)	92 (22.5)	68 (15-.1)	32 (7.6)	17 (3.9)
	Total	480 (100)	409 (100)	449 (100)	422 (100)	439 (100)

Table 9. Perspective on Quality of Services Delivered by Health Facilities (Study Average)

	Excellent	**Very Good**	**Good**	**Fair**	**Poor**	**Total Freq (%)**
Availability of doctors	339 (15.4%)	492 (22.4%)	908 (41.3%)	417 (19.0%)	43 (2.0%)	2199 (100%)
Availability of nurses	296 (13.5%)	485 (22.1%)	1017 (46.2%)	363 (16.5%)	38 (1.7%)	2199 (100%)
Quality of doctors	297 (13.5%)	522 (23.7%)	1101 (50.1%)	247 (11.2%)	32 (1.5%)	2199 (100%)
Quality of nurses	297 (13.5%)	479 (21.8%)	1036 (47.2%)	340 (15.5%)	45 (2.9%)	2199 (100%)
Quality of drugs	307 (14.9%)	577 (26.2%)	1053 (47.9%)	252 (11.3%)	10 (0.5%)	2199 (100%)
Politeness (Attitude) of staff	295 (13.4%)	534 (24.3%)	911 (41.4%)	422 (19.2%)	37 (1.7%)	2199 (100%)
Education on drug a injection use.	306 (13.9%)	555 (25.2%)	890 (40.5%)	403 (18.3%)	45 (2.0%)	2199 (100%)
Provision of privacy	317 (14.4%)	760 (34.6%)	872 (39.7%)	234 (10.6)	16 (0.7%)	2199 (100%)

The highest percentage of respondents who rated positive were recorded in Sabon Pegi (88.6%) and Mbilla (84.1%). Percentages of 70.7% and 74% were recorded in Damare and

Imburu, respectively. The proportion of respondents who gave a poor rating was 22.6% in Damare and 22.5% in Dumne, which translates to at least 1 in every 5 respondents, as observed in table 8 below.

Cumulatively across all study locations, while 13.4% gave an excellent rating for health workers' attitude (politeness), about 1 in every 5 respondents adjudged health workers' attitude as negative (either poor or fair). Furthermore, a significant 89.1% gave a positive rating (good, very good, or excellent). A significant 1 in every 5 respondents (20.3%) across all 5 locations gave a negative rating of either poor or fair for this important indicator, as can be seen in table 7.

Comparative Analysis of Findings from 3 Metrics (NPS Score, Quality of Care Ratings, and Satisfaction Rates)

Table 10 shows a comparative analysis of results of all 3-performance metrics under evaluation. The strength and direction of the relationship between 5 variables have been examined. These variables include satisfaction rates, NPS score, proportion of promoters, ratings for quality of health personnel, and ratings for attitude of health personnel. The distribution of satisfaction rates and proportion of promoters (in parentheses) in Damare, Imburu, Sabon Pegi, and Dumne is 89.4% (34.2%), 86.7% (14.5%), 63.5% (4.35%), and 58.7% (1.2%), respectively. Results of correlation analysis show that the correlation coefficient (r = 0.54) obtained indicates the existence of a moderate positive correlation between satisfaction rates and proportion of promoters.

Table 10. Comparative Analysis of Results of 3 Metrics

	Quality of Care Ratings		**Satisfaction with Services.**	**Net Promoter Score (NPS) Findings.**	
Study Locations	Quality/Competency of personnel	Attitude (Politeness) of Personnel	Satisfaction Rates	Promoters (%)	NPS Score (%)
Damare	91.8%	89.6%	89.4%	34.2%	- 0.2
Dumne	93.7%	79.7%	58.7%	1.2%	- 86.7
Imburu	78.4%	81.4%	86.7%	14.5%	- 34.9
Mbilla	83.7%	50.0%	40.8%	15.4%	- 42.7
Sabon Pegi	89.1%	92.9%	63.5%	4.3%	- 46.3
Total	**87.3%**	**78.7%**	**70.0%**	**14.5%**	**- 40.7**

NB: Positive Rating for Quality/Competence, and attitude of Personnel: % of respondent who choose either Excellent, Very Good, or Good.

Satisfaction Rates: % of respondent who chose either Very Satisfied or Satisfied.

Table 11. Correlation Matrix

	Quality/Competency of personnel	**Attitude (Politeness)**	**Satisfaction Rates**	**Promoters (%)**	**NPS Score (%)**
Quality of personnel	1				
Attitude /Politeness)	0.377314301	1			
Satisfaction Rates	-0.078185892	0.717928539	1		
Promoters (%)	-0.055502477	0.035120542	0.538557779	1	

NPS Score (%)	-0.215232141	0.185596791	0.589693667	0.91497947	1

Table 12. Distribution of Correlation Coefficient and pvalues

Study Locations	**Satisfaction Rates**	**Promoters (%)**	**Satisfaction Rates**	**NPS Score (%)**	**Satisfaction Rates**	**Attitude (Politeness)**	**Promoters (%)**	**NPS Score (%)**
Damare	89.4%	34.2%	89.4%	- 0.2	89.4%	89.60%	34.2%	-0.2
Dumne	58.7%	1.2%	58.7%	- 86.7	58.7%	79.70%	1.2%	-86.7
Imburu	86.7%	14.5%	86.7%	- 34.9	86.7%	81.40%	14.5%	-34.9
Mbilla	40.8%	15.4%	40.8%	- 42.7	40.8%	50.00%	15.4%	-42.7
Sabon Pegi	63.5%	4.3%	63.5%	- 46.3	63.5%	92.90%	4.3%	-46.3
Cor Coefficient (r)	**0.54**		**0.59**		**0.72**		**0.91**	
p-Value	**0.349**		**0.295**		**0.172**		**0.029**	

Results show the proportion of promoters increased as satisfaction rates increased in 4 out of 5 study locations mentioned above. However, this positive relationship is not statistically significant since the p-value of 0.39 obtained is greater than 0.05 ($p>0.05$). Table 11 also shows NPS scores decreased as the proportion of promoters decreased: Correlation analysis shows there is a strong positive correlation between the proportion of promoters and the NPS score, and this relationship is statistically significant based on the correlation coefficient (r) of 0.91 and the p-value of 0.029 obtained from correlation and regression analysis, respectively. It is observed that NPS scores for Damare (-0.2%), Imburu (-34.9), Sabon Pegi (-46.3), and Dumne (-86.7) decreased as satisfaction rates and the proportion of promoters decreased.

There also exists a strong positive correlation ($r = 0.71$) between ratings for attitude of health workers and overall health service satisfaction rate that is also not statistically significant considering that the p-value of 0.17 obtained is greater than 0.05, i.e., $p > 0.05$. For example, data from tables 10 and 11 also shows the 2 wards (Mbilla and Dumne) with the lowest rating for health workers' attitude (politeness) also recorded the lowest satisfaction rates. For example, Mbilla, with 50% of respondents providing positive ratings for health workers' attitudes, reported satisfaction rates of 40.8%. Similarly, Dumne recorded 79.7% of respondents issuing positive ratings for health workers' attitudes but a lower 58.7% satisfaction rate for healthcare experience. Furthermore, Imburu and Damare, the 2 wards with the highest proportion of respondents with positive ratings for health workers' attitudes, also had the highest satisfaction rates of 89.4% and 86.7%, respectively.

The correlation coefficient ($r = 0.59$) and p-value of 0.295 obtained from correlation and regression analysis done for the data set from satisfaction rates and NPS score indicate the existence of a fair positive relationship that is not statistically significant.

Discussions

Descriptive statistics show the proportion of respondents living within urban areas varied significantly across study sites. Urban dwellers ranged from 72.3% in Damare to 0.7% in Dumne. On average, rural-based respondents comprised 78.9% of all study participants. This has potential implications on the level of access and utilisation of quality healthcare services, as will be noted in the following paragraphs. On average, 70.5% of the entire study's respondents considered the nearest health facility to their place of residence as their most preferred place for seeking care. The relatively high preference for the nearest health facility

can be an indication of a client's desire for quality, cost, and speed of care weighed against constraints associated with household economic status and the need to reduce travel time during emergencies and routine preventive care.

The category of care providers with the highest patronage were public health facilities (39.8%) and government hospitals (37.1%). On average, they are the largest contributor to access and uptake of healthcare services in the entire study. The observed higher preference for public hospitals is consistent with findings from studies examining the determinants of choice of health facilities in Southwest Nigeria [17, 18]. Although the proportion of respondents who visited either a public health facility or a government hospital was a cumulative 76.9%, it follows that 70% of all respondents rated their overall experience as satisfactory. These findings are comparable to results from a study assessing patients' preference for healthcare service providers in Ogun State, where 73% of respondents preferred government-owned facilities, and a subsequent 78% of respondents within the same study rated the quality of care received as satisfactory [19].

Findings from patients' overall satisfaction with healthcare service show that an overall satisfaction rate of 70% recorded in this study is consistent with the 70.6% satisfaction rate recorded in a comparative study of public tertiary and private secondary eye care clinics in Ibadan [20]. Satisfaction rates from this study are at variance with the 18.5% and 52.1% overall satisfaction rates documented, respectively, for emergency nursing care service in two tertiary hospitals in Oyo and general outpatient clinic services in a tertiary hospital in Sokoto [21, 22]. This study's satisfaction rates are also lower than the satisfaction rate of 89% reported among enrollees of NHIS [23]. In another related study, satisfaction levels among subscribers of the state-supported health insurance scheme were lower in Enugu, with satisfaction rates of 40.5%, and Cross River, with satisfaction rates of 32.7%. The same study, however, documented relatively higher satisfaction rates of 78.3% and 77.7%, respectively, for Taraba and Oyo states [24].

Location-specific results from this study indicate the highest satisfaction rates of 89.4% were recorded in Damare with 72.3% of urban-based respondents. On the other hand, Imburu, with rural-based respondents of 89.3%, recorded 86.7% satisfaction rates. Interestingly, a lower proportion of respondents expressed satisfaction with service in Mbilla (40.8%), Dumne (58.7%), and Sabon Pegi (63.5%). These results contrast with studies asserting satisfaction rates from satisfaction surveys were usually high and that those who are usually not satisfied discontinue use of problematic health facilities [8]. The highest dissatisfaction rate of 30.3% was observed in Dumne, whose rural-based respondents were 99.3% and who also had the highest proportion of respondents who indicated a preference for a private health facility (12.7%), drug store/pharmacy (27.9%) and government hospital (46.9%). The lowest preference for public health facility was documented in the same Dumne at 12.2% compared with the entire study's average of 39.8%. Interestingly, despite the higher preference for private sector providers (PHCs and drugs/pharmacy stores), satisfaction rates were the lowest at 58.7%. This is similar to studies conducted in Somalia, Cuttack, and Tehran, reporting satisfaction rates of 53.1%, 55.3%, and 57.5%, respectively [25-27]. This finding is at variance with results of another comparative analysis of patient satisfaction indicating satisfaction reached 91.3% in the private sector compared to 38% in the public sector [28].

Moreover, the proportion of respondents who had secondary education and above was the highest in Dumne at 88.3%. The relationship between the relatively higher education levels and lower rates of satisfaction

among respondents in Dumne aligns with findings from studies showing higher levels of education were associated with lower levels of patient satisfaction, which is also linked to greater expectations [25, 29]. This relatively higher education level compared to lower satisfaction rates observed may align with findings from systematic views on patient satisfaction with services indicating that while satisfaction drivers may vary based on environment, the fulfilment of expectations in addition to quality of interaction and process efficiency play a formidable role in explaining location-specific variations in findings [25, 30, 31].

Studies around patients' perspectives about quality of care demonstrate the role of competence, attitude, and communication skills of health workers, including doctors and nurses, in enhancing higher satisfaction rates [32, 33]. These factors appear to have contributed to the high proportion of respondents who provided positive ratings (either good, very good or excellent) for the quality of doctors (health personnel) in all study sites. Ratings were distributed as follows: 91.8% for Damare, 93.7% for Dumne, 78.4% for Imburu, 83.7% for Mbilla, and 89.1% for Sabon Pegi. Findings also show that in Dumne, 58.7% of respondents expressed satisfaction with healthcare services despite the fact that a much higher 93.7% gave a positive rating for the quality of doctors. This suggests other factors associated with the multidimensional nature of patient satisfaction may be responsible for the reduced satisfaction rate [4,11]. **This will be discussed below and in more detail.** A similar trend was observed in Mbilla (83.7% vs 40.8%) and Sabon Pegi (89.1% vs 63.5%). The trends observed so far align with findings from studies suggesting that evaluating patients' perception of the quality of health personnel without considering the outcome of patient overall satisfaction with care service often masks significant dissatisfaction in other operational domains that may include systemic issues within health facilities [34-36].

Also observed is the correlation between satisfaction rates and the client's rating for quality-of-care domains such as health workers' attitude and the quality or competency of doctors (health personnel). Ratings for perception of health workers' attitude (politeness) were lower than those of quality of health personnel in 3 out of 5 study locations. This indicates health workers' attitudes may be a major client concern and, consequently, a key determinant of patient or care-giver satisfaction rates. This is demonstrated by findings showing 2 wards with the lowest rating for health workers' attitude (politeness) recorded the lowest satisfaction rates. For example, Mbilla, with 50% of respondents providing positive ratings for health workers' attitudes, reported satisfaction rates of 40.8%. Similarly, Dumne recorded 79.7% of respondents issuing positive ratings for health workers' attitudes but a lower 58.7% satisfaction rate for healthcare experience. Furthermore, the two wards (Imburu and Damare) with the highest proportion of respondents with positive ratings for health workers' attitudes also had the highest satisfaction rates of 89.4% and 86.7%, respectively.

Findings from the Net Promoter Score (NPS) analysis show that the average NPS score of -40.7 observed for all 5 study sites suggests respondents have more negative than positive sentiments about their overall experience with healthcare service. The ratio of detractors who gave ratings of 0 to 6 (55.2%) to promoters who provided ratings of 9 to 10 (14.5%) is an estimated 4 to 1. This highlights the presence of dissatisfaction and unmet expectations among respondents and also implies that far fewer respondents are likely to recommend or spread positive testimony about services rendered in a health facility, even when they consider the same services to be satisfactory. This score varies widely with NPS scores from a retrospective quality improvement study of a post-outpatient subspeciality clinic in Southern California, which recorded an NPS score of

+96% [37]. Another study of 5 hospitals in Brazil recorded mean NPS scores ranging from +0% to +47.4% [38]. In a related study of 48,068 patients within all 27 federation units in Brazil, findings show no region obtained an NPS value within the quality zone of +51% to +75% NPS score. Results concentrated on the improvement zone between 1 and 50, with the best-performing NPS rating of +33% and +27% in the Southern and Northern regions, respectively [39].

Results of NPS analysis at the ward level also show all 5 study locations have negative NPS scores ranging from - 0.2% in Damare (highest) to - 86.6% in Dumne (lowest). The NPS for Imburu, Mbilla, and Sabon Pegi are - 34.9%, - 42.7%, and - 46.3%, respectively. Results show that Dumne, with the highest rural population of 99.3%, a mean age of 45.83, and the lowest population of promoters at 1.2%, also has the highest population of detractors (at 87.8%), who consist mainly of unsatisfied clients who provided ratings between 0 and 6 on how likely they were to recommend health services to friends and family. Imburu and Sabon Pegi, which are locations within the same Numan LGA, recorded markedly different proportions of promoters: 14.5% for Imburu and 4.3% for Sabon Pegi, but similar percentages of detractors (49.4% vs 50.6%, respectively).

A reoccurring dynamic from this study is the general consensus that the quality of services needed to be improved. This was demonstrated by the fact that all study locations have recorded negative NPS values. This position is buttressed by the relatively high dissatisfaction rating of respondents who were either dissatisfied, very dissatisfied, or even neutral. This category accounted for 10.3% in Damare, 41.3% in Dumne, 13.3% in Imburu, 53.1% in Mbilla, and 35.5% in Sabon Pegi. Furthermore, NPS analysis shows that the proportion of respondents categorised as detractors was more than three times higher than the proportion of respondents categorised as promoters.

Comparative analysis of findings demonstrates the existence of a simple correlation between results of net promoter score, proportion of promoters, and satisfaction rates in 4 out of 5 study sites evaluated. However, the strength and direction of the relationship between 5 variables examined using correlation and regression analysis show variations in degrees and statistical significance of relationship as shown in table 11 and 12. These variables include satisfaction rates, NPS score, proportion of promoters, ratings for quality of health personnel, and ratings for attitude of health personnel. The variables with the strongest correlation and most statistically significant relationship are those between ratings for attitude of health personnel and satisfaction rates. Correlation analysis also affirms the presence of a strong positive correlation between the proportion of promoters and the NPS score, and this relationship is statistically significant based on the correlation coefficient (r) of 0.91 and the p-value of 0.029 obtained from correlation and regression analysis, respectively.

Findings also show that lower satisfaction rates resulted in a lower proportion of promoters and NPS scores obtained. For instance, Damare, Imburu, Sabon Pegi, and Dumne, with the following respective satisfaction rates and proportion of promoters in parentheses, also had their corresponding NPS scores seen to have decreased as the proportion of promoters decreased: 89.4% (34.2%), 86.7% (14.5%), 63.5% (4.35), and 58.7% (1.2%). It is observed that NPS scores for Damare (- 0.2%), Imburu (-34.9), Sabon Pegi (- 46.3), and Dumne (-86.7) also decreased as satisfaction rates and the proportion of promoters decreased. The implication is that higher satisfaction rates fuel patient loyalty, improved utilisation of health services, and potential reduction in morbidity and mortality associated with poor utilisation.

Findings also indicate results of NPS tended to have higher reliability compared to those of

the satisfaction survey; this is due in part to the broader range of NPS scores obtained compared to satisfaction ratings observed. Hence, the NPS score is more likely to serve the diagnostic purpose of identifying the worst- or least-performing quality of care domains regardless of how high satisfaction rates are or how good ratings for patient-provider relationships are [40]. Healthcare managers are therefore obligated to institute mechanisms for engaging and obtaining further feedback from detractors with the overall goals of transforming potential passives and detractors (highly dissatisfied users) into promoters or highly satisfied users. Hence simple qualitative questions can be integrated into an adapted form of NPS questionnaires.

Conclusion

This study has demonstrated the higher reliability of the NPS survey over satisfaction and patient quality of care assessment surveys. Results underscore the complementary value of using at least two and preferably three measures. Comparative analysis of findings also demonstrates the existence of a simple correlation between results of net promoter score, proportion of promoters, and satisfaction rates in 4 out of 5 study sites evaluated. Findings show that lower satisfaction rates resulted in a lower proportion of promoters and NPS scores obtained. Comparative analysis of findings from the three patient-reported experience measures suggests positive ratings of health services appear substantial but sub-optimal. Higher ratings reflect higher confidence in promoters and managers of health facilities, and consequently, the likelihood that willingness to join, pay for, and sustain enrolment in a community-based health insurance scheme when established may be high.

Furthermore, results of NPS scores across all 5 study locations affirm suggestions that efforts to expand access and reduce service costs may indeed do little to increase access and utilisation when perceived quality of care and satisfaction rates are low. This is due to the relatively low proportion of promoters compared to satisfied clients across all 5 study sites. Therefore, quality improvements must go beyond advocating for increased funding, addressing human resource capacity gaps, and enhancing technology improvements. Rather, interventions should include and prioritise the design and sustainable delivery of patient-centred care that is hinged on continuous improvement using the total quality management (TQM) approach. It therefore follows that even when total quality management principles are deployed, healthcare facilities can achieve and sustain competitiveness via continuous professional development reform, improved customer services, and the continuous re-evaluation of processes for effectiveness and efficacy as new data, including patient feedback, routinely becomes available. Findings also illustrate the limitations of closed-ended satisfaction items as the sole instrument for assessing the quality of medical care and underscore the value of the use of mixed methods as a more nuanced approach.

While findings from this study have the capacity to inform decisions on which health facility requires improvement, including what aspects of care require enhancement, it is advised that no firm conclusions should be reached about the status of performance and quality of services rendered by public and private health facilities located within Damare, Dumne, Imburu, Mbillla, Sabon Pegi, and Adamawa as a whole. Suffice it to say that findings should not be generalised to reflect the status of performance of health facilities based in the wards, local government areas or states as a whole, considering that convenience sampling was adopted.

Recommendations

1. High-impact training of health workers on interpersonal, interactive, and psychosocial

support skills requires prioritised attention. Government and development partners should revise training strategy to ensure the impact of capacity-building programmes are traceable, measurable, and evaluated in light of future patient satisfaction and quality of care assessment findings.

2. Satisfaction surveys should be interpreted in light of findings from a previously conducted health worker satisfaction survey since customer satisfaction has been shown to be reinforced by employee satisfaction [41]. Health system managers should prioritise identifying and addressing potential gaps in health workers' welfare, technical, and development needs, recognisable through periodic quantitative and qualitative engagements with health workers, especially and including those who routinely interact with patients directly.
3. Routine monthly assessment of health facilities, and the dissemination of health facility patient quality assessment feedback using patient satisfaction profile presented as scorecard, and in state dashboard and/or index should be developed and used to inform routine evaluation of public and private health facility overall performance status. Incentivising the best-performing health workers within facilities and facilities within regions via monetary and non-monetary recognition can help inspire competitiveness.
4. There is a need for the design of a standardized multi-metric tool that measures patient perspective around quality of care and patient satisfaction. The design of a such a tool should be informed by the review and context-dependent adaptation of existing tools. Adopted tools should be administered by independent contractors with strong expertise in preventing or limiting confounding factors associated with the administration of surveys in local languages and within rural settings.
5. There is the need to establish an independent committee who will review existing frameworks and design appropriate models for administration, evaluation, and dissemination of routine quality assessments feedback using an international best practice approach in patient feedback monitoring and quality improvements in healthcare.

Suggestions for Future Research

1. There is a need to replicate this research with the integration of qualitative measures needed to generate feedback on the unmet needs of detractors and passive respondents of Net Promoter Score (NPS) studies so as to help researchers identify quality-of-care domains requiring improvements. Feedback is also required to understand what domains met and exceeded the expectations of promoters so as to strengthen these domains and even recognise health personnel manning these areas.
2. Further research is needed to identify and understand differences and relationships between the patient, caregiver or patient relatives, and health workers' perspectives on the quality of care.

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Data Availability

Quantitative data sets without sensitive personal identifiers, and contextual data are available on reasonable request.

Conflict of interest

The authors declare no conflict of interest.

Ethical Clearance

Study approval and ethical clearance was provided by the Adamawa State Ministry of Health. Verbal informed consent from the study participants was obtained before commencement of the study. Enumerators were mandated to sign confidentiality and privacy agreement for each survey administered before commencement using either the kobo toolbox software or paper-based questionnaire. Signing meant ticking a checkbox (see appendices) without which survey cannot proceed. There is also a checkbox for informed consent before proceeding with administration of mobile phone-based questionnaire (see link to questionnaire).

Author's Contributions

ICU: Conceptualization, design, methodology, research instrument development, validation, investigation, data collection, data analysis, result interpretation, and data curation, and manuscript writing. E.D.O and A.L provided critical revision of entire manuscript. All authors read and approved the final version forwarded to Texila International Journal.

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