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Clients' Perception of the Quality of Primary Health Service and its Predictors in Rivers State

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Keywords

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ABSTRACT

Introduction: Most patients in Rivers State seek health care from primary health centres which recently had undergone modernization. However not enough is known of their perception on the quality of service delivery. This study assessed perceived quality of primary health care and identified predictors in the context of Rivers State.

Method: Cross-sectional survey using multi stage sampling approach. A multi-scale instrument - Outpatient Assessment of Health care questionnaire was used to obtain feedback from 423 adult patients visiting three randomly selected primary health centres, representing the three senatorial districts in Rivers State. Outcome measured were patients' satisfaction with doctors and nurses' communication, health care environment, health and medication communication as well as their global rating of the centres. Predictors of perceived quality of PHC were explored using regression analyses with p-value < 0.005 considered significant.

Results: Mean age of the respondents was 29.6 ± 5.9 years with majority being female (92.1%), self-employed (47.0%) and married (90.1%). Majority (67.5%) of the respondents were satisfied with the care they received at the health centres, with mean satisfaction scores of 3.41, 3.45, 3.16 and 3.48 out of a possible maximum of 4 for doctors, nurses, environment and consultation domain respectively. Less proportion of the respondents (59.9%) were satisfied with the quality of information about prescribed medications. Predictors of high rating in this study were older age (standardised $\beta = 0.22$, 95% CI: 0.14 – 0.29, P<0.001), consultation with doctors (p = 0.001), free health care (p<0.001), higher self-rated health status (p < 0.001) and being a first time visitor to the health Centre (p<0.001).

Conclusions: Although patients are generally pleased with services at health centres but there is need to improve the clarity of information given on prescribed medications. Some negative predictors which are within the remit of the health system should form the focus for quality improvement.

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INTRODUCTION

Health care delivery service in many settings is based on multi-tier, inter-related system with first point of contact being primary health care (PHC).[1] PHC services are designed to be easily accessible to the populace it is inarguably the most cost-effective way countries can achieve desired health outcomes and is the approach for achieving health for all.[1-3]

Nigeria along with other countries endorsed the primary health care led health care delivery system at the Alma Ata Conference[4,5] and further adopted a national health policy that emphasized comprehensive health care service based on PHC.[4,6,7] In Nigeria, 'primary health care' covers promotive, preventive, curative and rehabilitative services provided by community health practitioners, nurses, midwives or doctors working in the various structural and functional grades of health centres.[5] This PHC approach provides for universal access to health care with the full participation of individuals and families in the community.[2] Stakeholders' report however, show that patients' participation in the design and management of PHC is still a tall dream[7,8] and current efforts at making PHC more socially relevant all aim to improve utilization and sustainability of the PHC system.[7,8]

An important component of patients' participation in health care in their evaluation of the care they receive. This form of evaluation which had been noticed in many health settings,[9] is arguably influenced by current trend in patient-focused health care[10-12] and public demand for accountability.[13-14] This is also supported by evidence showing that greater involvement of patients in health care delivery leads to the

achievement of high quality care at relatively lower cost.[11,12] In all, patient satisfaction surveys is the commonest form of patients' evaluation study conducted both globally and in sub Saharan Africa.[15,16] The complex construct of satisfaction can be unpack using various models:

- the 'value-expectancy model' which explains satisfaction as positive evaluation of distinct aspects of health care
- the 'fulfilment model' which views satisfaction as the difference between desired and received rewards, or
- the 'discrepancy model' which views satisfaction as a gap between expectation and reward[17]

When evaluating health care, patients are often more critical of interpersonal and situational components of care than actual technical interventions.[18] The interpersonal aspects of care depend on several elements in the relationship between providers and patients such as communication; ability of providers to treat the patients with 'concern; empathy; honesty; tact and sensitivity'.[19] These support the notion of medicine being an art whose magic and creative ability reside in the patient-physician relationship.[20] Besides inter-personal relationship, patients especially in developing countries are also concerned with situations around the cleanliness of the hospital's environment, waiting time, hospital bureaucracy, and cost of care.[21-23]

There have been recent state government interventions in PHC infrastructures in Rivers State. The establishment of modern health centres, provision of critical equipment, consumables, human resources and dedicated governance structure are aimed at improving health coverage of essential care and providing health security for the populace. Despite the government focus on improving PHC, not much is known about the perception of patient on services delivered or other situation around these centres. This article is an attempt at bridging this gap by providing current evidence on patients' perception of the quality of PHC in Rivers State.

METHOD

Study setting

Rivers is one of the states in the oil rich Niger-Delta and home to about 6.7 million people living in its three senatorial districts and 23 local Government Areas.[24] Formal health care is provided through primary, secondary and tertiary health facilities. The tertiary health facilities in this area include the University of Port Harcourt Teaching Hospital, Braithwaite Memorial (Specialist) Hospital, Dental and Maxillofacial Hospital and Kelsey Harrison Hospital. Secondary health care facilities are located in all the local government areas of the State, and managed by a hospitals' management board; while primary health centres are located within each of the geopolitical wards in the State and managed by the primary health care management board.

Study population

Adult patients who visited three randomly selected primary health care facilities at Umuebele, Abonnema and Rumuigbo were eligible for inclusion in the study, if they were ambulatory, not so severely ill and gave their consents to participate. Patients with mental illness and those under the age of 18 years were excluded from the study.

Study design

Descriptive cross-sectional survey

Permission/consent

Permission to carry out the study was obtained from the Rivers State Primary Healthcare Management Board, and from the heads of the three study facilities. Informed consents were obtained from all the respondents, after full disclosure of the purpose of the study and assurance of the confidentiality of information obtained.

Sample size

A sample size of 423 patients from the three health centers was selected from the study population. This sample size is derived on an assumption of 50% of patients being satisfied with their encounter with PHC. This was adopted in order to maximize the sample size, in the absence of specific study in this setting. For this cross-sectional study, we adopted a precision of 5%, with a confidence interval of 95% and further increase of 10% in the sample size, was to compensate for non-response or inappropriately filled questionnaire.[25]

Sampling technique

Multi-stage sampling technique, with stratified random sampling used to select a local government area from each of the three senatorial districts, and a random sampling method used to select the study health centres from each of the previously selected local government areas. Systematic random approach using a sample fraction of 1 in 4, was use to recruit the respondents from the patients listed to be seen by the health workers on each of our visit days.

Data Collection

We adapted the *Outpatient Assessment of Health care questionnaire* which was developed to assess outpatients health care experiences in Ethiopia[26] and had also been used in another previous study.[27] This questionnaire covered domains of care such as: nurse communication, doctor communication, hospital environment, consultation, medication and symptom communication. Most items in the questionnaire are rated using a 4- point Likert-type scale, ranging from 1 (strongly disagree) to 4 (strongly agree). An overall evaluation of care on an11-point scale (scored 0-10) was also included in the questionnaire as well as the likelihood of patients recommending the facility to friends and family (on a 4-point scale from definitely no to definitely yes). A pre-test of the version of the questionnaire used for this study was conducted with thirty-five patients at the primary health centre in Ozuoba which had similar practice characteristics to the study facilities.

Patient clinical, / sociodemographic and geographic characteristics

We collected data on patient age; gender; marital status; level of schooling; employment; perceived health status, obligation to pay for service at point of access and length of contact with health centres. Patients attending these health centres are seen by different mix of health care providers including doctors, nurses or community health practitioners (community health extension workers or community health officers).

Analysis

Data was analysed using SPSS version.[28] The mean satisfaction scores assessed the 4 domains (nurse communication, doctor communication, physical environment and consultation) were reported along with the 95% confidence interval and standard errors of these estimates. Dichotomization of the initial 4-point categorical responses format (strongly disagree to strongly agree) and some patients' clinical/socio-demographic characteristics were meant to aid analyses and interpretation of findings.

Predictors of patients' global ratings of the quality of PHC were identified from the dataset using univariate and multivariate linear regression analyses. Recommended checks for normality, linearity, multi-collinearity and heteroscedasticity were undertaken before dummy tables were generated for the categorical independent variables with one group serving as baseline.[29] The univariate regression analyses explained how ratings varied among subgroups under each independent variable. We reported the unstandardised coefficients (B) along with its 95% confidence interval, t-statistics from bivariate analyses and associated P-value. Multivariate analysis was used to adjust for inter-relationships among independent variables. Two models were created with the first containing only significant predictors from the univariate analyses while the second accommodated all independent variables.

The ANOVA table in the multiple regression analyses provided information on the overall fit of these models and whether or not models had improved our ability of predict perceived quality of primary health care in Rivers State. The P-value shows if models are significant fits of the overall data.

RESULTS

A total of 423 questionnaires were administered and 347 were sufficiently completed, giving a response rate of 82%. The age of the respondents ranged from 18 to 47 years with a mean of 29.6±5.7 years. From Table II, most of the respondents were female (92.1%), married (90.6%) and self-employed (47.0%). Also majority (n = 254, 73.35%) were seen by medical doctors and perceived their current health status to be excellent (n = 111, 31.8%).

Table II presents findings on the evaluation of health workers' communication, environment and consultation. Over 90% of the respondents were satisfied with the nurses; attentiveness to their complaints (n = 317, 93.2%) and the clear communication with doctors (n = 265, 94.6%). Fewer patients were satisfied with the cleanliness of the toilets (n = 158, 68.7%). Ratings on the various domains reveal nurses' communication having the highest rating (mean = 3.45, 95%CI: 3.36 – 3.56) while the physical environment had the least rating with mean of 3.16 out of the possible maximum of 4.

From Table III, more patients were satisfied with general health information than they were with the information on prescribed drugs. Only about a fifth of those that paid for health care at the point of access disapprove of the cost for accessing

Table I: Respondents' clinical/socio-demographic characteristics and mean rating of PHC

Independent variables	Subgroups	Frequency (%)	Mean rating (SD)
Age in years	Continuous	-	-
Perceived Health	Fair	28 (8.6)	4.79 (1.99)
Status	Good	195 (59.8)	6.71 (2.25)
	Very good	103 (31.6)	6.62 (2.30)
Gender	Male	26 (8.0)	6.38 (2.61)
	Female	300 (92.0)	6.58 (2.29)
Occupation	Unemployed	100 (30.4)	6.65 (2.24)
	Self-employed	155 (47.1)	6.59 (2.23)
	Employ private/public	74 (22.5)	6.56 (2.30)
Consultation	Nurse	84 (25.5)	6.06 (2.21)
	Doctor	242 (1.2)	6.72 (2.31)
	CHP	4 (73.3)	7.50 (2.89)
Marital Status	Single	31 (9.5)	5.94 (2.42)
	Married	296 (90.5)	6.63 (2.29)
Schooling	≤ Primary	11 (3.3)	6.45 (1.04)
	>Primary	319 (96.7)	6.57 (2.34)
Religion	Christian	317 (98.1)	6.57 (2.30)
	Moslem	6 (1.9)	5.00 (2.76)
Payment	Paid for service	160 (47.9)	6.14 (2.50)
	Free service	174 (52.1)	6.95 (2.05)
Visit to facility	Regular visitor	259 (75.1)	6.37 (2.22)

Table II. Frequency of categorical responses on domains measured

Domains of care – Mean rating (95%CI)	Disagree n (%)	Agree n (%)
Nurses' communication – 3.45 (3.36 – 3.56)		
Nurses treated me with courtesy	34 (10.0)	306 (90.0)
Nurses listened carefully to me	23 (6.7)	317 (93.3)
Nurses explained things clearly	27 (8.0)	311 (92.0)
Doctors' communication – 3.41 (3.31 – 3.51)		
Doctors treated me with courtesy	30 (10.4)	256 (89.5)
Doctors listened carefully me	26 (9.2)	256 (90.8)
Doctors explained things clearly	15 (5.3)	265 (94.7)
Physical environment – 3.16 (3.05 – 3.27)		
Outpatient is clean	23 (6.9)	307 (93.1)
Bathroom is clean	72 (31.3)	158 (68.7)
Enough consulting time - 3.48 (3.40 – 3.57)	48 (14.2)	289 (85.8)

outpatient services (n = 28, 17.7%).

Five independent variables were consistent predictors of the global rating of PHC from the univariate (Table IV) and multivariate (Table V) regression analyses. After adjusting for the influence of possible confounding variables, significantly higher ratings were associated with increase in age (standardised β = 0.22, 95% CI: 0.14 – 0.29, P<0.001), patients with good self-rated health status (B = 2.19, p<0.001) or very good (B = 2.61, p<0.001) compared to those who rated theirs as fair. Patients who had consultations with doctors at the health centres gave significantly higher rating score of 1.1 (95% CI: 0.52 – 1.62, p<0.001) when compared with those who were seen by nurses. Other predictors of higher rating were access to free health care ((B = 0.57, 95%CI: 0.1 – 1.1, p = 0.002) and first time visitors to the health centres (B = 1.23, 95%CI: 0.68 – 1.78, p <0.001).

Both models of the multivariate regression analyses appeared useful in predicting the perceived quality of PHC services in Rivers State with 20% of the variance in perceived quality of PHC predicted by model 1 and 24% by model 2 {Model 1 [F(7, 311) = 12.40, p = 0.00, adjusted R square = 0.20], Model 2 [F(13, 286) = 8.37, p = 0.00, adjusted R square = 0.24]}.

Table III. Patients' feedback on drug information and use of facility

Characteristics (n)	Yes n (%)	No n (%)
Given clear health information (n = 336)	264 (78.6)	72 (21.4)
Given drugs at facility (n = 316)	192 (60.6)	124 (39.1)
Got clear drug information (n = 192)	115 (59.9)	77 (40.1)
Drug availability at facility's dispensary (n = 192)	123 (64.1)	69 (35.9)
Easy navigation of facility (n = 336)	312 (92.9)	24 (7.1)
First time being treated in this facility (n = 339)	77 (22.7)	262 (77.3)
Paid for the outpatient visit (n = 335)	160 (47.8)	175 (52.2)
Outpatient too expensive (n = 160)	28 (17.7)	132 (82.3)

Table IV: Univariate regression analyses showing relationship between independent variables and patient perception of PHC

Independent variable - baseline group	Measurement scale	B (95% CI)*	t-test	p-value
Age	Continuous	0.20 (0.12, 0.27)‡	-	0.000
Perceived Health Status – Fair	Ordinal			
Good		2.02 (1.25, 2.79)	5.17	0.000
Very good		2.28 (1.45, 3.10)	5.43	0.000
Gender – Male	Dichotomous			
Female		0.19 (-0.74, 1.12)	0.41	0.69
Occupation- Unemployed	Categorical			
Self-employed		-0.04 (-0.61, 0.53)	-0.15	0.89
Employ private/public		-0.27 (-0.96, 0.42)	-0.78	0.44
Consultation - Nurse	Categorical			
Doctor		0.66 (0.10, 1.21)	2.32	0.02
CHP		1.43 (-0.87, 3.74)	1.23	0.22
Marital Status - Single	Dichotomous			
Married		0.69 (-0.17, 1.55)	1.59	0.11
Level of schooling - ≤ Primary	Dichotomous			
Post-primary		0.11 (-1.28, 1.51)	0.16	0.87
Religion – Christian	Dichotomous			
Moslem		-1.57 (-3.44, 0.30)	-1.65	0.10
Payment – Paid for service	Dichotomous			
Free service		0.81 (0.32, 1.30)	3.25	0.001
Visit to facility – Regular	Dichotomous			
First time		0.84 (0.26, 1.43)	2.83	0.005

(* –the unstandardised coefficient shows the relationship between subgroups within the independent variable and its baseline.
‡Standardised β shows the change in the rating that would be caused by 1-year increase in age.

Table V . Multivariate regression analyses of independent variables and general rating of PHC

Independent variable - baseline group	Measurement Scale	Model 1: All significant predictors entered [a]B (95% CI)	p-value	Model 2: Model 1+ Non significant predictors [a]B (95% CI)	p-value
Age	Continuous	0.20(0.11, 0.29)‡	0.000	0.22(0.14, 0.29)‡	0.000
Perceived Health Status - fair	Ordinal				
Good		2.20(1.41, 2.98)	0.000	2.19(1.36, 3.01)	0.000
Very good		2.66(1.81, 3.50)	0.000	2.61(1.71, 3.52)	0.000
Gender – Male	Dichotomous				
Female				0.70(-0.35, 1.41)	0.19
Occupation- Unemployed	Categorical				
Self-employ				-0.17(-0.72, 0.38)	0.55
Employ private/public firm				-0.58(-1.25, 0.09)	0.09
Consultation - Nurse	Categorical				
Doctor		0.87(0.34, 1.41)	0.001	1.07(0.52, 1.62)	0.000
CHP		1.48(0.17, -0.63)	0.169	-1.36(-4.28, 1.56)	0.36
Marital Status - Single	Dichotomous				
Married				0.53(-0.35, 1.74)	0.23
Level of schooling - ≤ Primary	Dichotomous				
Post-primary				-0.89(-2.27, 0.49)	0.21
Religion – Christian	Dichotomous				
Moslem				-1.72(-3.46, 0.02)	0.053
Payment – Paid for service	Dichotomous				
Free service		0.74(0.27, 1.20)	0.002	0.57(0.10, 1.05)	0.02
Visit to facility – Regular	Dichotomous				
First time		1.23(0.68, 1.78)	0.000	1.62(1.03, 2.02)	0.000

a –the unstandardised coefficient shows the relationship between subgroups within the independent variable and its baseline. Model 1 [F(7, 311) = 12.40, p = 0.00, adjusted R square = 0.20], Model 2 [F(13, 286) = 8.37, p = 0.00, adjusted R square = 0.24]. ‡ Standardised β shows the change in the rating that would be caused by 1-year increase in age after adjusting for the effect of other predictors. CHP – community health practitioner. Shaded cells are for variables that were not predictors from the univariate regression analyses and so were omitted in Model 1.

DISCUSSION

Finding showed that patients appeared generally happy with their care at primary health centres. About two fifths of patients admitted that they did not receive enough information on the prescribed medications and lower rating was also observed on the physical environment, especially neatness of the toilets. Predictors of patients' rating of primary health care in Rivers State were older age, higher self-rated health status, access to doctor, receipt of to free health care and first time visitors to the health centre.

Patient evaluation of primary health care in sub-Saharan Africa is still an under-researched subject with some of the available studies froth with methodological weaknesses especially in relation to subject selection, measurement instrument and the measurement processes.[15]Existing studies were conducted under different contexts and measured different scales.

Our report of a high proportion of patients being satisfied with various aspects of care at health centres mirrors other facility-based quantitative studies conducted in primary[22,30] or tertiary health centres[23] in Nigeria. Specifically, high level of satisfaction with relationships with the providers that was reported in Kano mirrored findings on the composite domains of nurses' and doctors' communication in this study. There were also reports of high ratings on providers' communication in studies conducted in Umuahia, Benin City and Kano[22,23,31] and all these present as contrast to the lower ratings reported in Ilorin[32] and eastern Ethiopia.[33]

The need for good communication and relationship between providers and recipients of care cannot be over-emphasized. Patients who are satisfied with providers are more likely to continue with care, adhere to medical instructions and also unlikely to patronize quacks.[34,35] Beside improving the effectiveness of care, good doctor-patient relationship is in itself therapeutic and successful consultation with a trusted and respected practitioner could confer more benefits than can be obtained from only the actual therapy

administered to patients.[18,36] Similarly, good communication with nurses will improve patients' understanding of planned procedures, promote stronger therapeutic relationships and enhanced the overall effectiveness of care.[36] With effective communication, patients feel more involved with their care, and are enabled to make informed choices on management options instead of remaining passive receiver of care. Finally, good communication could enhance patient appreciation of the bureaucratic processes and procedures that exist in many health facilities.

Although like previous report, more patients gave favourable feedback on their interaction with nurses,[36] consulting a doctor instead of a nurse during index visit predicted higher rating of the centres. The demand of patients to have consultations with medical doctors whenever they visit health facilities is also common in other practice settings. In fact, in more extreme situations, patients make further demand to see specific doctors whenever they visit such practice.[37]

Patients preference for clean health facilities are often with special reference to the cleanliness of the toilets. The state of cleanliness of the toilet were given poor ratings by patients in our study. High rating observed for the hospital environment were similar to report from Kano,[23] Umuahia[22] and Trinidad,[36] but different from a study in Ethiopia[33] where patients were least satisfied with the state of cleanliness of the health facility.

Most respondents indicated that they received clear health information from health providers. The positive feedback is remarkable as getting firsthand information from the health care providers help debunk negative myths patients receive elsewhere and this could also help improve their health seeking behavior. While clear communication between patients and care providers can also assist in identifying problems quickly, defining expectations and helping to establish trust between patients and providers, the converse could influence patients to leave the health centres and other formal health institutions to patronizing quacks.[23]

In contrast to the proportionate approval for the receipt of adequate health information, fewer patients were satisfied with information given on their prescribed medications. This could mean they were not given sufficient information about prescribed medications that could improve compliance with prescription and enhance care effectiveness. As a minimum, patients should receive information that would enable them to identify their medications, know the reasons medications were given, possible side effects and in the event of adverse drug reaction, what to do. Improving the practice of drug education may require retraining providers especially those handling prescription on current best practices on patient drug education.

About half of these respondents paid for care received from the various health centers and about a fifth of these felt this cost was inexpensive. This findings might look similar to 78% of the patients reported as satisfied with the cost of care in Kano study,[23] but both studies present more favourable feedback when compared with patients' views on cost in South-East Nigeria.[22] Irrespective of the actual cost of health care, being required to pay for health care at the point of accessing care is identified in this study as a negative predictor of perceived quality of PHC. This is not surprising as out-of-pocket payment at the point of access to health care could be linked with negative economic consequence especially for poorer households.[39] This situation calls for strengthening of the current financing of PHC in Rivers State in a way that would engender universal health coverage and health security for all.

Older age and higher perceived health status were predictors of patients' rating of PHC. Age is considered the most consistent demographic predictor of patient-reported outcome and experiences with older patients often giving more favourable feedback on their health care than younger patients.[40] Also in keeping with our

finding, higher self-rated health status had been associated with higher evaluation finding among adults attending health centres in Oman.[41] It would be worthwhile to explore specific needs of younger patients and those with poor self-rated health status, but both age and perceived health status are non-modifiable and unlikely to be seen as focus for quality improvement.

The high satisfaction of patients with services received from the primary health care centers may have been influenced by recent improvements in physical infrastructure and deployment of appropriate human resource to health centres by the state government. Unfortunately, we found no previous patient feedback on PHC in Rivers State to compare with current findings. Furthermore, when comparing these findings with hospital-based studies conducted in Ibadan, Benin and Kano,[23,31,38] it seems likely though not certain that socio-cultural factors like level of literacy and religious beliefs (which were not predictors of perceived quality in this study), or even the nature of the facilities could provide some explanations for variations in various regions of the country.

Strengths and limitations

The use of probability sampling, validated measure and a high response rate could have minimized bias from this study. Possible limitations with measuring subjective phenomena like perceived quality are related to the premise for such measurements; the methodology; the instrument and applicability of such measurements for quality improvement.

Our sample was drawn from ambulatory patients who visited health centres and so findings may not be generalizable to patients who seek emergency care, inpatients in health centres or those in the community. Furthermore, self-administered questionnaire used in this study are prone to information bias even with use of a validated measure.

The cross-sectional design used in this study, limits causal conclusions to be drawn from the finding and so further analytical or experimental study are needed to confirm the various hypotheses generated from this study. Additionally, our study was not designed as a comparative study and so we did not report how perceived quality varied across health facilities representing the senatorial districts in the state.

Implications of the findings

Findings have important implications for future research, practice and policy. The findings will be useful for patient-focused improvement of the quality of primary health care in Rivers State. It is recommended that policy maker institutionalize the used of periodic patient assessment of PHC systems that would guide the reorganization of the services to become more socially relevant to patients. Further research on appropriate mechanisms for integrating findings from patients' surveys for quality improvement is also recommended.

CONCLUSION

Measurement of patients' view of health care services is important in investigating problems in health care delivery and for developing acceptable intervention plans. Older age, higher self-rated health status, receipt of free service at the point of access, consulting with doctors at the facility and visit characteristics were identified as predicators of patients rating of PHC in Rivers State. Some of these predictors which are amenable to interventions are also within the remit of the health system. These should form the focus for patient-focused continuous quality improvement.

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