

Research Article

Assessing Client Satisfaction with Health Service Delivery under the National Health Insurance Scheme: The Case of Komfo Anokye Teaching Hospital

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Background. Client satisfaction is the direct effect of service delivery and, in essence, the basis for quality improvement in any industry. In health financing, it is a significant determinant of clients' enrolment in an insurance scheme. **Objectives.** This study sought to assess client satisfaction with healthcare delivery under the National Health Insurance Scheme (NHIS) at a tertiary facility in Ghana. **Methods.** A cross-sectional study was conducted among patients attending the outpatient department of the Komfo Anokye Teaching Hospital. Data were collected using structured questionnaires. Questionnaires were administered to 300 purposively selected patients, stratified based on their insurance status. Data obtained were then analysed using mean score ranking and an independent sample *t*-test. **Results.** The client satisfaction variable with a high level of satisfaction was observed for physical environment ($\pi_{ins} = 3.80$; $\pi_{unins} = 3.69$). The least rated construct was responsiveness ($\pi_{ins} = 2.59$; $\pi_{unins} = 2.51$). A statistically significant difference in the means between the insured and uninsured was observed for two of the five constructs, namely, communication ($\pi_{diff} = 0.36$; $p < 0.05$) and service availability ($\pi_{diff} = 0.33$; $p < 0.05$). **Conclusions.** This study advocates for prioritization of measures and policy initiatives aimed at improving responsiveness in healthcare delivery, as the least rated construct. It further draws health providers' attention to modesty in communication regardless of socioeconomic or insurance status.

1. Introduction

Ghana has undertaken quite a number of reforms in its health sector, some of which have been implemented in the area of health financing. The previous reforms resulted in reduced healthcare utilization and inequities, leading to a significant milestone in 2004 when Ghana joined a number of countries such as Rwanda, Nigeria, Tanzania, and Kenya in implementing a social health insurance known as the National Health Insurance Scheme (NHIS). This initiative

sought to pool and share health risks across the populace and minimize direct payment at service delivery points [1].

Ghana's health insurance scheme, implemented over 15 years, has been touted as one of the best performers in terms of implementation in Sub-Saharan Africa (SSA) and one worthy of emulation by other countries in the subregion (United States Agency for International Development) [2]. This health insurance scheme remains a powerful health financing tool for achieving universal healthcare coverage (UHC) and financial risk protection against all healthcare costs [3].

Although the NHIS has made significant strides in healthcare utilization, this was achieved at the cost of increased demand for healthcare with a resultant strain on staff and resources, infrastructural improvement, and finally client satisfaction [4]. Client satisfaction as an outcome of healthcare delivery and an indicator of healthcare quality is a significant determinant of enrolment in the scheme and, hence, its sustainability. Ghana's healthcare system has witnessed fluctuations in enrolment rates between 2010 and 2017, with the stagnation of active membership. In 2010, 2015, and 2017, the enrolment rates of the NHIS were 33% (8.2 million), 41% (11.3 million), and 35% (10.3 million), respectively, among the general population [5]. Client dissatisfaction with services rendered by healthcare providers has been purported as one of the reasons for the poor enrolment in the scheme [6].

Several empirical studies have been conducted on the NHIS in Ghana. These studies have sought to determine the trend in enrolment into the NHIS [5] and to determine factors influencing quality healthcare delivery in implementing the NHIS [7], to name a few. A very limited number of studies have sought to address clients' satisfaction with health service delivery under the NHIS. The few existing ones, such as Fenny et al. [4, 8], focused primarily on primary health care and thus limited their study population to households.

Prior to this study, some studies ostensibly showed that the insured were dissatisfied with treatment received in public health facilities for reasons such as long waiting times and discrimination on the part of the staff [1]. Therefore, this study sought to assess clients' level of satisfaction with health service delivery at the tertiary health care level and then determine if any difference existed in the level of satisfaction with service delivery between the insured and uninsured.

The desire for advancement in the health sector and the effectiveness of the NHIS remains a motivation for this study. Evidence from this study can inform policy directions to strengthen healthcare delivery at the facility level.

2. Research Methodology

2.1. Study Design and Selection of Facility. The study adopted a cross-sectional study design. It was conducted at the outpatient department of the Komfo Anokye Teaching Hospital. This facility was purposively chosen because it is the major tertiary health facility serving the country's western, northern, and middle zones. Thus, it could give us a more representative sample of the general public.

2.2. Sampling and Sample Size. This study focused on insured and uninsured clients in the outpatient department who visited the hospital during the data collection period and was part of a bigger study.

A sample size of 300 participants was considered for the study. In determining the sample size for this study, an original sample size of 385 was obtained using Cochran's formula for unknown populations ($N = z^2 pq / e^2$, z at 95% confidence level = 1.96; sampling error, $e = 5\%$; and

maximum variability, $p = 50\%$) [9]. Adopting the modified Cochran's formula, the original sample size of 385 obtained was then adjusted using an estimated patient population of 1000 at a 5% significance level (p value < 0.05). This yielded a patient sample size of 278, rounded off to 300.

Stratified and purposive sampling techniques were then utilized in selecting the study participants. Patients' insurance status and demographic records were ascertained from the outpatient registers from five conveniently selected consulting rooms at the general outpatient department. They were then stratified based on their insurance status into insured and uninsured. This was followed by a purposive selection of 150 insured and 150 uninsured participants using inclusion and exclusion criteria.

2.3. Inclusion and Exclusion Criteria

2.3.1. Inclusion. Adults between the ages of 18 and 70 years who were of sound mind and gave informed consent for participation were included in the study.

2.3.2. Exclusion. Individuals excluded from the study included those who had been triaged for in-patient admission based on the severity of their health condition, patients at the OPD who were in pain or had some discomfort for which reason could not participate in the study, and lastly privately insured patients.

2.4. Data Collection and Study Instrument. Data collection spanned a period of 2 months from August 2019 to September 2019. Study data were collected and managed using REDCap® electronic data capture tools hosted at Komfo Anokye Teaching Hospital [10, 11]. The mobile app version of REDCAP was installed on the phones of the data collectors and access, given to them for data capturing. Prior to the data collection, verbal consent was sought from prospective participants. Privacy and confidentiality were ensured. Study participants were interviewed in a private room where others could not overhear ongoing discussions. Confidentiality was maintained by eliminating participants' identity from the data collection tool and keeping responses under password protection. The questionnaire consisted of two sections: the first section covered the patient's demographic information while the second section assessed five areas of client satisfaction, adopted from existing literature [4, 12], mainly, communication, physical environment, responsiveness, service availability, and communication on medications.

2.5. Measurement of Variables. Clients' satisfaction was assessed using five constructs consisting of (i) communication (ii) physical environment, (iii) responsiveness, (iv) service availability, and (v) communication on medications. Variables assigned to each item were scored in a five-point Likert scale ordinal response (1: very unsatisfactory, 2: unsatisfactory, 3: neutral, 4: satisfactory, and 5: very

satisfactory). The Likert scale enabled the researcher to rate and rank the patients' satisfaction levels.

To assess the levels of client satisfaction for each construct, the mean ratings of the various indicators under each construct were added to obtain the total quality index. The total quality index was then divided by the number of variables to obtain the mean rating for each construct. The following operational range definitions were set from existing literature: low level of satisfaction (1–2.33), moderate level of satisfaction (2.34–3.67), and high-level satisfaction (>3.67) [13, 14]. The range was obtained using the formula: (highest Likert scale point – lowest Likert scale point/3). The constant 3 was used because the means were classified into three, i.e., low, moderate, or high. A value of 1.33 was obtained using the formula above ($5 - 1/3$). To define the ranges for each score, we ensure a difference of 1.33, i.e., low score = 1–2.33, moderate score = 2.34–3.67, and high score >3.67 [14].

2.6. Data Analysis. Data analysis was performed using the Statistical Package for Social Science (SPSS) version 20 software after the data set was cleaned, extracted onto an Excel sheet, and coded. A mean score ranking analysis with summary statistics (mean) and standard deviation were used to ascertain the average responses of clients on a Likert scale in answering the first objective: to determine clients' level of satisfaction with health service delivery under Ghana's NHIS. This was followed by an independent sample *t*-test of equality of means to determine the difference in the level of satisfaction between the insured and uninsured, the second objective.

2.7. Data Validation and Quality. The questionnaire was initially reviewed by an expert, and data collectors were trained to ensure quality control. This was followed by a pilot test survey on a subset of the intended population. A total of 20 clients were interviewed in the pilot survey. The results of the pilot study were excluded from the final study data. A factor and Cronbach's alpha (CA) analysis was performed to determine the validity of the variables under each construct and the reliability of the data set. The questionnaire was revised based on errors observed and fine-tuned till a higher CA of 0.84 was achieved for the final study.

2.8. Ethics Statement. Ethical approval was obtained from the Committee on Human Research and Publication Ethics (CHRPE) of the School of Medical Sciences (SMS), Kwame Nkrumah University of Science and Technology (KNUST), and permission to carry on the survey was obtained from the health facility. Informed consent was obtained from each participant verbally, and a detailed explanation of the purpose of the study was rendered. Participation in the study was entirely voluntary with no incentives given to the participants. Furthermore, details concerning ethical approval have been attached to this file.

3. Results

3.1. Sociodemographic Profile of Participants. The mean age of the study participants was about 40 years. Females formed the majority in both groups (53.3% of the uninsured and 50.6% of the insured). More than half of the insured (55.3%) were single while less than half of the uninsured were single (44.7%). A majority of the respondents had received basic (primary and junior high) education, i.e., 43% for the uninsured and 35.3% for the insured. However, more insured than uninsured had received tertiary education. Christians were predominant in both groups, i.e., 75.3% among the uninsured and 82.0% among the insured (see Table 1).

3.2. Results from the Mean Score Ranking Analysis of Client Satisfaction with Health Service Delivery under NHIS. From Table 2 and using the operational range definitions set by and adopted from the existing literature (low level of satisfaction (1–2.33), moderate level of satisfaction (2.34–3.67), and high-level satisfaction (>3.67)) [13, 14], it can be deduced that insured and uninsured clients were satisfied with "Physical Environment" with mean scores of 3.8 and 3.69, respectively. These mean score values were above 3.67, indicating a high level of satisfaction. Communication, service availability, responsiveness, and communication on medications constructs showed a moderate level of satisfaction for both insured and uninsured with mean scores between 2.34 and 3.67.

The least rated factor by clients with health delivery under NHIS was "Responsiveness to service delivery," with a mean of 2.50 and 2.51 for the insured and uninsured, respectively.

3.3. Independent Sample *t*-Test on the means of the Insured and Uninsured. In probing further to reveal whether a difference existed between the two groups, Table 3 shows that the mean satisfaction level of the insured clients in relation to communication of 3.51 was statistically different from the uninsured client's mean score of 3.15. Thus, the insured and the uninsured clients were statistically different in their satisfaction with communication ($\pi_{diff} = 0.36$; $p < 0.05$). Similarly, the mean satisfaction level of the insured clients with service availability of 3.39 was statistically different from the uninsured client's mean score of 3.06 ($\pi_{diff} = 0.33$; $p < 0.05$). However, with the high-level of satisfaction among the insured and uninsured with "Physical environment," there was no statistically significant difference observed ($\pi_{diff} = 0.11$; $p > 0.05$). The insured and uninsured groups of clients were generally satisfied with the hospital's physical environment. Further, the mean satisfaction level of the insured clients in relation to responsiveness in service delivery of 2.59 was not statistically different from the uninsured clients' mean of 2.51 ($\pi_{diff} = 0.08$; $p > 0.05$). Lastly, the mean satisfaction level of the insured clients regarding communication on medication of 2.75 was not statistically different from the uninsured client's mean of 2.71 ($\pi_{diff} = 0.04$; $p > 0.05$).

TABLE 1: Sociodemographic profile of patients.

Sociodemographic characteristics	Insurance status			
	Uninsured		Insured	
	Frequency ($n = 150$)	Percent (%)	Frequency ($n = 150$)	Percent (%)
Age	$N = 300$; Min = 18.0; Mean = 39.73; Max = 80; SD = 11.4			
Sex				
Female	80	53.3	76	50.6
Male	70	46.7	74	49.4
Religion				
Christian	113	75.3	123	82.0
Muslim	33	22.0	25	16.7
Other	4	2.7	2	1.3
Marital status				
Single	67	44.7	83	55.3
Married	58	38.7	62	41.3
Divorced	25	16.6	5	3.4
Educational level				
None	9	6.00	8	5.3
Basic (primary and junior high)	65	43.0	53	35.3
Secondary	47	31.0	43	28.7
Tertiary	30	20.0	45	30.0

TABLE 2: Client satisfaction with health service delivery under NHIS.

Variables	Health insurance status			
	Insured		Uninsured	
	Mean (π)	p value	Mean (π)	p value
Client satisfaction variable				
(1) Communication		3.51		3.15
(a) Human relations in terms of courtesy and respect shown to patients by doctors	3.740	≤ 0.001	3.233	≤ 0.001
(b) Human relations in terms of courtesy and respect shown to patients by nurses	3.193	0.008	2.940	0.434
(c) Active listening to patients during interaction by doctors and nurses	3.607	≤ 0.001	3.287	≤ 0.001
(2) Physical environment		3.80		3.69
(a) Cleanliness and favorability of waiting area	3.873	≤ 0.001	3.713	≤ 0.001
(b) Sanitation of hospital environment	3.727	≤ 0.001	3.673	≤ 0.001
(3) Responsiveness		2.59		2.51
(a) Time spent at the waiting area	1.987	≤ 0.001	2.053	≤ 0.001
(b) Time spent obtaining medications from the pharmacy	2.007	≤ 0.001	1.953	≤ 0.001
(c) Readiness in responding to emergencies	3.787	≤ 0.001	3.533	≤ 0.001
(4) Service Availability		3.39		3.06
(a) Availability of all prescribed medications at the pharmacy	3.333	≤ 0.001	2.960	0.448
(b) Ability to perform all laboratory investigations at the hospital	3.453	≤ 0.001	3.155	0.001
(5) Communication on medications		2.75		2.71
(a) Explanation of drug use by dispensers	3.433	≤ 0.001	3.160	0.008
(b) Explanation of side effects of drugs by dispensers	2.067	≤ 0.001	2.267	≤ 0.001

4. Discussion

The study was conducted to assess clients' satisfaction level with healthcare delivery under the NHIS and to determine if any difference existed in the level of satisfaction between the insured and uninsured. The discussion has been structured as follows: client satisfaction with healthcare delivery under the NHIS and the difference in satisfaction between insured and uninsured clients.

4.1. Client Satisfaction with Healthcare Delivery under the NHIS. Findings from the study showed a higher level of satisfaction with the physical environment wherein healthcare is delivered. A mean score of 3.80 and 3.69 at 95% confidence level and $p < 0.05$ for insured and uninsured clients, respectively, demonstrated this. This finding is important because the environment within which healthcare is received has a significant implication on the health and well-being of the people receiving care and on treatment

TABLE 3: Independent sample *t*-test on insured and uninsured.

Client satisfaction	Parameters	Descriptive statistics			<i>t</i> -test for equality of means			
		<i>N</i>	Mean	SD	Mean diff	<i>T</i>	df	<i>p</i> value (1-tailed)
Communication	Insured	150	3.51	0.59	0.36	4.637	298	≤0.001
	Uninsured	150	3.15	0.74				
Physical environment	Insured	150	3.80	0.36	0.11	1.914	298	0.057
	Uninsured	150	3.69	0.58				
Responsiveness	Insured	150	2.59	0.62	0.08	1.177	298	0.240
	Uninsured	150	2.51	0.56				
Service availability	Insured	150	3.39	0.61	0.33	5.007	296	≤0.001
	Uninsured	150	3.06	0.53				
Communication on medication	Insured	150	2.75	0.58	0.04	0.505	298	0.614
	Uninsured	150	2.71	0.67				

outcomes [15, 16]. Thus, regardless of the insurance status, all patients are entitled to healthcare in a safe and serene environment. Financial risk protection should, therefore, not be provided at the expense of the health and safety of clients. In a somewhat similar study conducted in an NHIS clinic in a tertiary facility in Nigeria, insured clients expressed a higher level of satisfaction with the cleanliness and sanitation of the NHIS clinic ($\pi = 3.25$; s.d. = 0.78) compared to that of the general hospital environment ($\pi = 2.43$; s.d. = 0.86) [17]. This study did not, however, assess the perception of those who did not attend the NHIS clinic.

Other client satisfaction variables, namely, communication ($\pi_{ins} = 3.51$; $\pi_{unins} = 3.15$), service availability ($\pi_{ins} = 3.39$; $\pi_{unins} = 3.06$), communication on medication ($\pi_{ins} = 2.75$; $\pi_{unins} = 2.71$), and responsiveness ($\pi_{ins} = 2.59$; $\pi_{unins} = 2.51$) showed a moderate level of satisfaction by both insured and uninsured clients. In a similar study by Fenny et al. [4] with a sample size twice as much as this study, more than half of the insured and uninsured clients expressed a moderate to high level of satisfaction with waiting time (52.6% insured satisfied; 51.8% uninsured satisfied), friendliness of the staff (57.5% insured satisfied; 54.1% uninsured satisfied), and laboratory services (58.2% insured satisfied; 63.6% uninsured satisfied). On the contrary, the majority of the insured (69.4%) expressed dissatisfaction with services at the dispensary. It can be inferred that overall, healthcare provider services under the NHIS have proven favorable to clients whether insured or uninsured. Although these findings are contrary to those of Dalinjong and Laar in 2012, regional and healthcare provider disparities could account for this contradictory finding.

4.2. The Difference in Satisfaction between Insured and Uninsured Clients. Though scarcely the focus, the difference in satisfaction levels between insured and uninsured clients is a very important factor in increasing enrolment in the NHIS and has an implication on policy direction for the sustainability of the NHIS. It can be reasoned that a significant difference in the level of satisfaction between the two groups, with the insured being more satisfied than the uninsured can be an incentive for enrolment. This is because the propensity to enroll on the scheme is influenced by clients' perception of

the scheme [8]. This perception is partly a result of their experiences with the health services provided.

This study unraveled a significant difference in the mean score for communication ($\pi_{diff} = 0.36$; p value <0.05) and service availability ($\pi_{diff} = 0.33$; p value <0.05) between the insured and uninsured. The insured were more satisfied with how providers related to them and how readily available services were. This can be attributed to the fact that health providers are likely to experience less stress and frustration providing services to the insured who are entitled to a wide range of services compared to the uninsured who are not and who may not be able to pay out of pocket for these services. This eventually affects how health providers communicate and relate with these clients.

Constructs such as the physical environment ($\pi_{diff} = 0.11$; p value = 0.057), responsiveness ($\pi_{diff} = 0.08$; p value = 0.24), and communication on medications ($\pi_{diff} = 0.04$; p value = 0.614) showed no significant difference in mean scores between the two groups. In terms of the physical environment, both insured and uninsured receive care under the same sanitary conditions; hence, we do not expect to observe a significant difference in the mean scores.

The observation of no significant difference in the time spent at the waiting area and obtaining medications was contrary to findings from a study conducted in Bolgatanga in Ghana by Dalinjong and Laar in 2012, where a significant difference was observed (p value = 0.003). Factors such as the shortage of health professionals, lengthy and cumbersome procedures, lack of appointment schedules, and increased demand for specialized healthcare nonetheless accounted for the long waiting time experienced by both the insured and uninsured [8, 12].

Lastly, the study reveals a similar experience by both the insured and uninsured at the dispensary regarding communication on drug use and side effects. Similar to this study, findings from the study by Fenny et al. in 2014 revealed no significant difference between client satisfaction ratings by insured and uninsured at a 5% significance level. The poor rating of this construct by both groups, could be attributed to the high OPD attendance, which translates into a high demand for medications juxtaposed with inadequate drug dispensers and pharmacists. Since communication on medication affects

health outcomes, the requisite steps need to be taken to ensure that the OPD attendance is well managed to facilitate an effective dispenser-patient time.

5. Limitations of the Study

External validity was low because the study was conducted only on outpatients and in Komfo Anokye Teaching Hospital. Considering the use of non-probability (purposive) sampling technique in this study, generalization must be done with caution as in-patients' satisfaction with care may differ markedly. Arguably, the OPD is the gateway to most of the hospital's services and thus remains an important area to sample respondents.

Furthermore, client satisfaction is more subjective than an objective measure of quality and could be influenced by sociodemographic factors like sex, marital status, age, and culture. These variables were, however, not adjusted for, in the study. Finally, a cross-sectional study of this nature only gives a snapshot of the event without a basis to establish causal relationships.

6. Conclusion

Patient satisfaction is an essential indicator for measuring quality health care. Though some studies previously projected client dissatisfaction with healthcare delivery under the NHIS, findings from this study have proven to be contradictory to these perceptions. However, the disparity in clients' perceived satisfaction across the various studies could be attributed to structural and procedural differences across different health facilities and individual factors such as sex, age, marital status, and level of education.

In spite of the generally acceptable level of satisfaction observed for all the client satisfaction constructs, the study identifies the need for healthcare managers to prioritize and channel more effort and resources towards improving responsiveness in the delivery of care. It advocates policy initiatives that seek to address this gap. Furthermore, it challenges health service providers to be modest in communicating with clients regardless of their socioeconomic status or insurance status. Health managers in countries with similar healthcare systems can, in the same vein, utilize these findings in prioritizing and making decisions regarding quality improvement.

A further study is recommended to focus on in-patients' satisfaction with healthcare within the context of the implementation of the NHIS.

Data Availability

The secondary data used to support the findings of this study are included within the article. The field data collected and used in this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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