PATIENTS' SATISFACTION WITH COMMUNITY-BASED HEALTH PLANNING AND SERVICES IN NADOWLI-KALEO DISTRICT

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ABSTRACT

This study examines patients' satisfaction with Community-Based Health Planning and Services (CHPS) facilities in the Nadowli-Kaleo district, using the refined SERVQUAL model. A total of 30 items, encompassing the five dimensions of the refined SERVQUAL model (tangibles, responsiveness, reliability, assurance, and empathy), were evaluated. Data were collected from 406 patients across 10 CHPS zones using an embedded mixed-method design, with questionnaire and interview guide as the data collection tools. The findings indicate that the majority of respondents were either very satisfied or satisfied with the services provided by CHPS facilities, with an overall mean satisfaction score of 1.1, indicating a satisfactory rating. However, a considerable proportion of respondents expressed dissatisfaction with the appearance of the buildings (34.3%), availability of equipment (30.4%), comfort during waiting times (22.6%), and availability of healthcare professionals at all times (17.6%). These findings suggest that despite general satisfaction with CHPS services, the specific areas of dissatisfaction reveal patients' unmet needs and expectations. Addressing these gaps is essential to enhancing the quality of care and strengthening the effectiveness of CHPS in meeting the healthcare needs of rural populations.

Keywords: Community-Based Health Planning and Services, primary healthcare, SERVQUAL, health service quality, Ghana

INTRODUCTION

Patient satisfaction (PS) refers to the degree to which patients are satisfied with the healthcare services they receive or the extent to which patient expectations are met regarding the delivery of health services (Amporfro et al., 2021). PS remains one of the most important determinants of the quality of primary healthcare (PHC) in the context of the Sustainable Development Goals (SDGs) because it influences the extent to which patients have confidence and trust in the health system (Kruk et al., 2018). PS is directly associated with access to, and use of PHC services (Kruk et al., 2018). Because of the importance of PS in access to, and use of PHC services, governments have been encouraged to develop community-based solutions to make healthcare more accessible and affordable, especially to the poor in rural areas (Kanmiki et al., 2019). In this regard, Ghana developed and implemented the Community-Based Health Planning and Services (CHPS) program. CHPS is Ghana's pragmatic strategy for achieving universal health coverage through active community involvement in the planning, delivery and evaluation of healthcare services (Phillips et al., 2020).

Several studies have documented CHPS' instrumental impact in Ghana, including bringing healthcare to the doorsteps of the rural population, and reduction in child and maternal mortalities (Ministry of Health, 2016, 2023; Awoonor-Williams et al., 2004). However, little is known about PS with the quality of healthcare delivery under CHPS. Without sufficient understanding of patient satisfaction, policymakers, healthcare providers, and stakeholders may overlook critical aspects of service delivery that affect patient experience and overall healthcare utilization. Understanding patient satisfaction is crucial for assessing the quality of healthcare services provided by CHPS facilities and identifying areas for improvement. This study examines PS with CHPS compounds in the Nadowli-Kaleo District in the Upper West Region of Ghana, drawing on the refined SERVQUAL model. The study provides valuable insights on PS for policymakers, healthcare practitioners, and stakeholders involved in the CHPS program. The remainder of the paper is divided into the following sections: review of related literature, study setting and methods, results, discussions and conclusions.

REVIEW OF RELATED LITERATURE

Empirical Review

Access to PHC is crucial in improving health outcomes because it serves as the initial point of contact for patients in the national health system. The importance of PHC was highlighted during the Alma-Ata conference in 1978, which recognized PHC as a fundamental element in providing quality and equitable health care for all (WHO, 1978). The Alma-Ata Declaration was later reaffirmed by the Millennium Development Goals (MDGs) in 2000, the SDGs in 2015, and the Global Conference on PHC in 2018 (WHO, 2018). These global policy discussions have all emphasised the need for governments to develop community-based health initiatives for addressing PHC gaps, especially in rural communities. The Alma-Ata declaration gave birth to the CHPS program in Ghana in the late 1990s.

Under Ghana's CHPS program, a CHPS zone is a designated geographical area with a radius of 4 kilometres and a population size of 4,500-5,000 individuals or 750 households in densely populated areas. Where feasible, it may align with electoral areas (Ministry of Health, 2014). Each CHPS zone must have a CHPS compound, which includes accommodation for a Community Health Officer (CHO) and a service delivery point (Ghana Health Service, 2005). The CHO provides reproductive, maternal, and child health services; treats diarrhea, malaria, acute respiratory infections, and childhood illnesses; and offers comprehensive family planning and childhood immunization outreach services (Ministry of Health, 2014). The CHOs are supported by community health volunteers whose primary roles involve educating the community on basic health issues and serving as referral service agents and community social mobilizers (Ghana Health Service, 2005). These services are primarily delivered through home visits, but treatment is also provided for patients who visit the CHOs at the CHPS compound (Ministry of Health, 2014).

The number of CHPS zones has significantly increased over the past two decades from 39 in 2002 to 1,034 in 2010 (Ghana Health Service, 2017) and further to 5,100 in 2018 (Ministry of Health, 2018). This growth of CHPS zones underscores their importance in healthcare delivery. Among the successes of CHPS is the drastic reduction in child mortality from 111 per 1,000 live births in 2003 (Ministry of Health, 2016) to 10 per 1,000 live births in 2021 (Ministry of Health, 2023). Maternal mortality has also dropped considerably from 740 per 100,000 live births in 1990 (Ministry of Health, 2016) to 103 per 100,000 live births in 2021 (Ministry of Health, 2022). CHPS has also contributed to the improvement of family planning, antenatal care, skilled delivery, and postnatal care services (Ministry of Health, 2023; Awoonor-Williams et al., 2004). For instance, the rate of skilled delivery increased from 46% in 2009 (Ministry of Health, 2016) to 68% in 2022 (Ministry of Health, 2023).

Despite its successes, CHPS faces several challenges affecting its effectiveness. In the Kassena-Nankana East Municipality, Addi et al. (2021) found that CHPS compounds lacked essential resources like drugs, supplies, logistics, qualified personnel, and funding to deliver adequate healthcare. Similarly, Wiru et al. (2017) identified medicine shortages, lack of funds, and absenteeism of CHOs in the Kintampo North Municipality. Kaburu et al. (2023) also reported low community involvement, financial constraints, poor staff motivation, and inadequate logistics in the Jirapa Municipality. In the Yendi Municipality, Bassoumah et al. (2021) highlighted transportation difficulties, cultural beliefs, poor infrastructure, and challenges with the NHIS card.

Conceptual model

The study draws on the refined SERVQUAL model of service quality to assess patient satisfaction with CHPS facilities in the Nadowli-Kaleo District. Although the SERVQUAL model has been widely used in assessing customer satisfaction with service quality, we wish to acknowledge the growing use of scorecards as a rapid and participatory approach in customer satisfaction assessment (Blake et al., 2016; Hout et al., 2022). The SERVQUAL model is a research tool with multiple dimensions that

measure how well a service meets consumers' expectations (Mamun-ur-Rashid, 2023). The model was initially used by Parasuraman et al. (1985) to analyze the quality of telecommunication networks and improve customer loyalty. The original model had 100 items across 10 dimensions: competence, courtesy, credibility, security, access, communication, knowing the customer, tangibles, reliability, and responsiveness (Parasuraman et al., 1985). However, further testing by Parasuraman et al. (1994) showed that some of the ten dimensions were closely related. As a result, the dimensions and items were reduced to five and 22, respectively. The refined dimensions include tangibles (the appearance of physical facilities, equipment, personnel, and communication materials), reliability (the ability to perform the promised service dependably and accurately), responsiveness (the willingness to help customers and provide prompt service), assurance (the knowledge and courtesy of employees and their ability to inspire trust and confidence), and empathy (the level of caring and individualized attention the firm provides to its customers) (Ladhari, 2009).

Due to its comprehensiveness and reliability, the SERVQUAL model has been widely used to measure service quality and satisfaction in various cultural settings and industries, including banking, health, financial services, and education (Nyeck et al., 2002; Shahin, 2006; Ladhari, 2009). In Ghana, Amporfro et al. (2021), applied the SERVQUAL model to assess patient satisfaction with healthcare delivery, and analyzed the satisfaction of reproductive women (15-49 years) with healthcare delivery in Ghana using 15 indicators from the 2014 Ghana Demographic and Health Survey. These indicators were classified into three dimensions, namely, reliability (5 indicators), responsiveness (7 indicators), and tangibles (3 indicators). Turkson (2009) also used the SERVQUAL model to assess patients' satisfaction with healthcare delivery in the Komenda-Edina-Eguafo-Abirem District, using 18 items classified into the five refined dimensions of SERVQUAL: tangibles, reliability, responsiveness, assurance, and empathy.

Based on the previous scholarship, 30 SERVQUAL items across all five dimensions of the refined SERVQUAL model were used to measure patient satisfaction with CHPS facilities in the Nadowli-Kaleo District (Table 1). Each item was scored on a five-point scale, ranging from very satisfied (0) to very dissatisfied (4).

Table 1. 30 SERVQUAL items adopted to measure patients' satisfaction with CHPS facilities in Ghana

Dimensions	Items
Tangibles	Availability of equipment Appearance of the physical facilities Cleanliness of the health facility Comfort while waiting Neatness in the appearance of staff Ease of finding where to go (adequate signposting)
Reliability	Staff show sincere interest in solving patient problems. Availability of staff at all times Waiting time to see health staff

	Time spent in examination/consulting room Functionality of the National Health Insurance Scheme at the facility
Responsiveness	Patients given adequate information about medication or told exactly when services will be performed Prompt service given to patients by staff Staff willing to help patients Staff listened to patient Staff explained to patient what he/she wanted Staff advised patient on treatment Staff spent enough time with patient Home visits by health staff General operation of the facility
Assurance	Staff attitude/behaviour gives patients confidence Patients feel safe in facility Staff have knowledge to answer patients' questions Privacy during examination/consulting Staff sought consent before treatment Staff assured patient of confidentiality and protection of personal information
Empathy	Staff give clients personal attention Staff understand specific needs of the clients Facility has patients' best interests at heart Staff show compassion or concern about patient health problem

STUDY SETTING AND METHODS

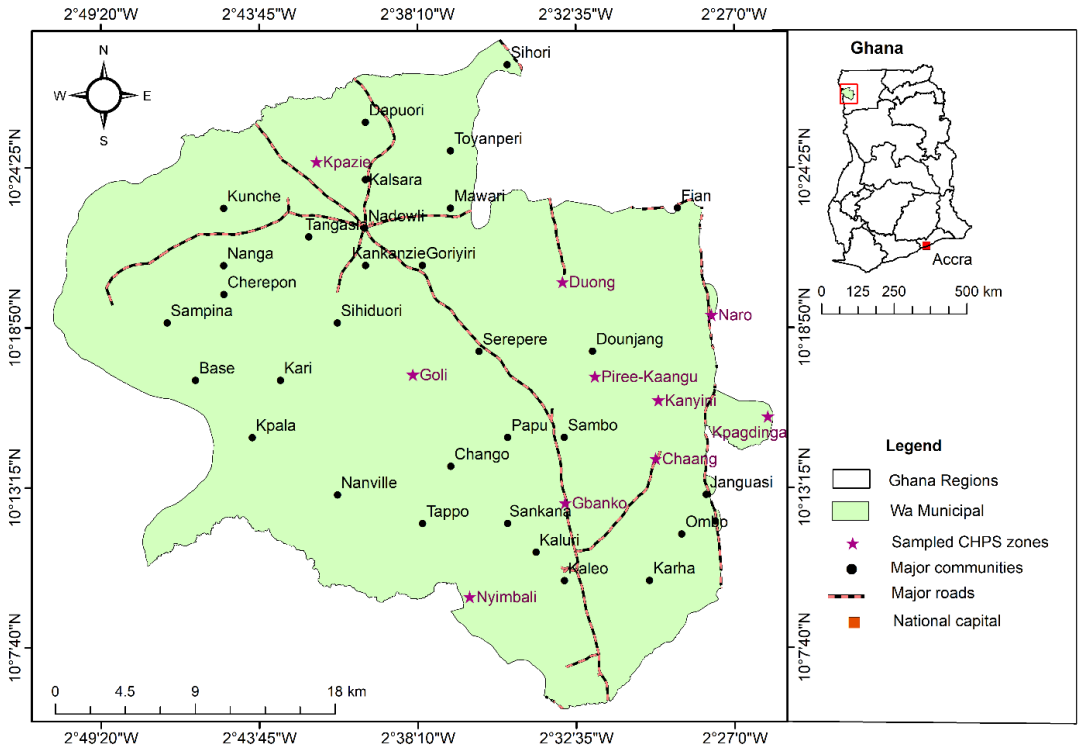
Study Setting

The study was conducted in the Nadowli-Kaleo District of the Upper West Region of Ghana (Fig. 1). It was purposively selected for the study because Amplio Ghana, a Non-Governmental Organization, aimed to enhance the quality of healthcare delivery by CHPS facilities in the district. As part of this effort, the organization conducted a patient satisfaction survey to identify gaps in healthcare delivery that needed improvement. This paper draws on the results of Amplio Ghana's study of the CHPS program in the Nadowli-Kaleo District.

Geographically, the Nadowli-Kaleo District is situated between latitudes 11° 30' and 10° 20' north, and longitudes 3° 10' and 2° 10' west, covering a total land area of 2,742.50km^2. According to the 2021 Population and Housing Census, the district has a population of 77,057, with 36,993 males and 40,064 females (Ghana Statistical Service, 2021). The majority of the population in the district, approximately 85%, depends on agriculture as their main source of livelihood (Nadowli-Kaleo District Assembly, 2021). As of the end of 2022, the Nadowli-Kaleo District had 38 operational health facilities, including two hospitals, 10 health centers, and 26 CHPS compounds (Upper West Region Directorate of Health Service, 2022). However, some health outcomes in the district remain unsatisfactory. For instance, in 2021,

the district recorded 79% ANC coverage and 75.8% PNC coverage compared to a target of 90% in the Upper West Region (Upper West Region Directorate of Health Service, 2022).

Fig. 1: Map of Nadowli-Kaleo District



Study approach and design

The study used a mixed-method approach, combining qualitative and quantitative methods for data collection and presentation of results. The integration of these two approaches maximized complementarity and synergy. This mixed-method approach improved data collection effectiveness and cross-validation of findings (Creswell, 2009). Additionally, using both quantitative and qualitative methods allowed for a more comprehensive understanding of "what," "how," and "why" (Denscombe, 2010). To enhance efficiency in data collection, the study employed an embedded mixed-method design, with priority given to the quantitatve data. This design enables the simultaneous collection of both quantitative and qualitative data within the same period (Creswell, 2009), saving time and financial resources. Simultaneous data collection was achieved by administering both the quantitative and qualitative tools in the same communities and within the same data collection timeframe.

Sampling procedure and sample size

Out of the 26 CHPS facilities in the Nadowli-Kaleo District, a simple random sampling was used to select 10 facilities for the study. These included Chaang, Kpagdinga, Naro, Piree-Kaangu, Duong, Kanyini, Nyimbali, Goli, Gbanko, and Kpazie CHPSs (Fig. 1). The target population for the study consisted of mentally stable individuals who were at least 18 years old, residing within the catchment area of the sampled CHPS facilities (known as CHPS zones), and had sought healthcare services at the facility in

the past six months prior to data collection. The six-month recall period utilized in this study falls within the commonly employed range of one to 14 months for health surveys (Heijink et al., 2011). Based on Cochran (1977) sample size determination formula, a sample of 385 participants was obtained for the study, maintaining a 95% confidence level and 5% margin of error:

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

Where n = sample size

p = desired level of precision, the margin of error (0.05)

e = The fraction of the population (as a percentage) that displays the attribute (0.5).

z = the z-value (1.96), extracted from a z table.

Due to a lack of data on the catchment population of the sampled CHPS facilities, the obtained sample size of 385 was distributed evenly among the 10 CHPS zones – 39 per CHPS zone. In each zone, all 39 samples were targeted for quantitative data collection. However, quantitative data was collected from 406 patients, exceeding the target by 11 respondents. The inclusion of additional respondents was intended to account for the risk of data rejection. But, it is worth mentioning that, data from all the 406 respondents were of high quality and used for the study. In each CHPS zone, three (3) respondents who expressed dissatisfaction with several SERVQUAL items were conveniently sampled and interviewed to provide deeper insights into the reasons behind their dissatisfaction.

Data collection and analysis

Quantitative and qualitative data were collected using a questionnaire and an interview guide, respectively. The questionnaire collected data on the background characteristics of the participants and the satisfaction levels of the patients for each of the 30 refined SERVQUAL items presented in Table 1. A five-point scale was used, with options ranging from very satisfied (0) to very dissatisfied (4). The interview guide also explored the participants' reasons for the dissatisfaction, providing deeper insights into the quantitative findings. The questionnaire was administered to 406 respondents, while the interview was conducted with only 30 participants.

Kobo Toolbox, a mobile data collection technology was used to collect both quantitative and qualitative data to ensure data quality. Five persons with at least a first degree and fluent in both English and the local language (Dagaare) of the study population (mainly Dagaaba) were recruited and trained as research assistants to collect the data. Data collection was done in August 2023.

The data was downloaded from the Kobo toolbox server as an Excel file and imported into SPSS. Quantitative data were analyzed using relevant descriptive statistical tools in SPSS. For each SERVQUAL item, we computed the proportion of respondents who indicated that they were very satisfied (0), satisfied (1), neutral (2), dissatisfied (3) or very dissatisfied (4). We also calculated the mean satisfaction scores for individual items, each of the five SERVQUAL dimensions, and all items. Qualitative data were manually analyzed thematically by organizing participants'

narratives on the reasons for their dissatisfaction by the SERVQUAL items, followed by coding and the identification of themes inductively. Both quantitative and qualitative results were triangulated to enhance the credibility, reliability, and trustworthiness of the findings. Specifically, qualitative accounts explaining participants' dissatisfaction with certain SERVQUAL items were presented alongside the corresponding quantitative satisfaction scores. This approach allowed for the validation of quantitative results through contextual insights from the participants' narratives. The results were presented with reference to the SERVQUAL framework; the conceptual model of the study.

DATA ANALYSIS AND PRESENTATION OF RESULTS

Background characteristics of the study participants

The characteristics of the study participants are presented in Table 2. Of the 406 individuals surveyed, 52.7% were females and 47.3% were males. The majority of respondents were Christians (78.3%), with a few being Muslims (16.3%). A significant portion of the participants (42.6%) had no formal education. The majority of the respondents (91.9%) were economically active and engaged in various productive activities. Around two-thirds of the participants (69.2%) were farmers, while the remaining were public/civil servants (1.2%), artisans (6.9%), traders (14%), unemployed (4.9%) and students (3.2%).

Table 2. Background characteristics of the study participants

Background Characteristics	Frequency	
	Number	Percentage (%)
Sex		
Male	192	47.3
Female	214	52.7
Total	406	100.0
Religion		
Christianity	318	78.3
Islam	66	16.3
African Traditional Religion	11	2.7
None	11	2.7
Total	406	100.0
Highest educational attainment		
No formal education	173	42.6
Nursery/KG	1	0.2
Primary school	54	13.3
JSS/JHS/middle school or equivalent	115	28.3
SHS/O'Level/A'level or equivalent	54	13.3
Tertiary	9	2.2
Total	406	100.0
Main Occupation		
Public/Civil servant	5	1.2
Farming	281	69.2
Artisan	28	6.9

Trading/ Business	57	14.0
Unemployed	20	4.9
Student	13	3.2
Others	2	0.5
Total	406	100.0

Patients' satisfaction with CHPS facilities

The overall mean satisfaction score for the 30 refined SERVQUAL items was 1.1, indicating that patients are generally satisfied with the services of CHPS facilities (Table 3). Details of satisfaction regarding tangibles, responsiveness, reliability, assurance, and empathy are presented below.

Satisfaction with tangibles

This dimension focuses on the physical aspects of the CHPS facility. Patients' satisfaction with tangible elements was assessed using six (6) criteria: availability of equipment, physical appearance of the facility, cleanliness, comfort while waiting, staff appearance, and ease of finding one's way around the facility. The overall average satisfaction score for tangibles was 1.3, indicating a fairly satisfied rating (Table 3). Examining the individual items, the mean satisfaction score for equipment availability was 1.6, also indicating a fairly satisfied rating. However, 30.4% of respondents expressed dissatisfaction due to a lack or insufficiency of chairs, beds, test tubes, strings, sphygmomanometers, infusion devices, and basic drugs (Fig. 2). Some participants explained the reasons for their dissatisfaction with the availability of equipment as follows:

> *Lack of test strips, strings, lack of beds in the facility, lack of waiting area (Female participant from Naro*, 07/08/2023).

> *No BP apparatus, no test strips, no strings, the CHPS compound itself is a hen coup used for that purpose, no mosquito net* (Male participant from Chaang, 07/08/2023).

The physical appearance of the buildings received an average satisfaction score of 1.7, indicating a fairly satisfactory rating. However, a frequency distribution of responses revealed that 34.2% of respondents were dissatisfied/very dissatisfied with the appearance (Fig. 2), citing issues such as small CHPS compounds, dilapidated structures, faded paint, and leaking roofs. The cleanliness of the health facilities received a mean satisfaction score of 1, indicating that patients were satisfied with the cleanliness of their CHPS compound. However, 7.9% of respondents expressed dissatisfaction, stating that the surroundings were either overgrown or dirty (Fig. 2).

Responses regarding comfort while waiting for medical care ranged from 0 (very satisfied) to 4 (very dissatisfied), with an average score of 1.5, indicating a fairly satisfied rating. A percentage breakdown of responses showed that 72.4% of respondents were satisfied/very satisfied with the level of comfort in the waiting area, while 22.6% were dissatisfied/very dissatisfied due to small waiting areas,

insufficient furniture, and a lack of TVs (Fig. 2). Below are some responses regarding dissatisfaction with comfort level while waiting for medical care:

> *The facility lacks space, and there is an insufficient number of chairs available* (Male participant from Goli, 05/08/2023).

> *I am often uncomfortable because there is a lack of furniture and a suitable place to sit before receiving treatment, and on many occasions, we have to sit under a tree* (Male participant from Gbankor, 05/08/2023).

The neatness of the healthcare staff's appearance received a mean satisfaction score of 0.8, implying satisfaction. However, 1.2% of respondents expressed dissatisfaction with the appearance of healthcare staff because they did not consistently wear their uniforms (Fig. 2). The mean score for ease of navigation within the facility was 1.3, indicating a fairly satisfied rating. Although the majority of respondents (78.1%) were satisfied/very satisfied with how easily they could navigate the facility, 22% were dissatisfied/very dissatisfied due to a lack of signage, particularly for locating toilet facilities (Fig. 2).

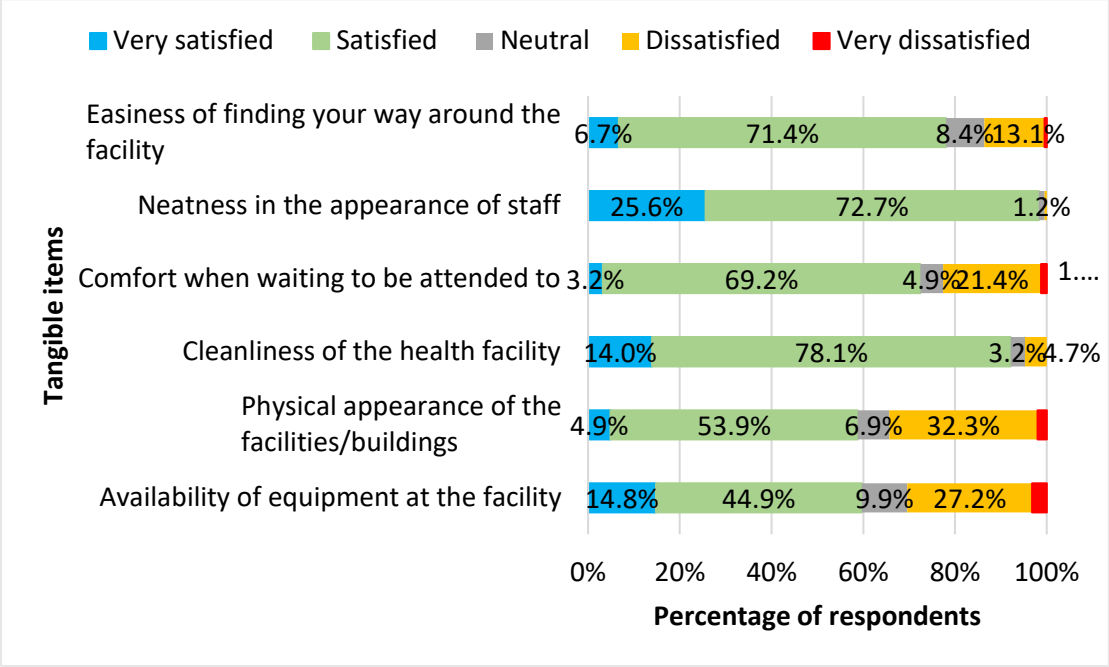


Figure 2. Patient satisfaction with tangible items

Table 3. Mean satisfaction scores for SERVQUAL items, dimensions and all items

All	Dimensions	Services
Overall: 1.1	Tangibles: 1.3	• Availability of equipment at the facility: 1.6 • Appearance of the physical facilities/buildings: 1.7 • Cleanliness of the health facility: 1.0 • Comfort when waiting to be attended to: 1.5 • Neatness in the appearance of staff: 0.8 • Easiness of finding your way around the facility: 1.3
	Responsiveness:	• Information about medication or when certain

1.0	services will be performed: 1.1 • Promptness of services: 1.1 • Staff willingness to help patients: 1.0 • Staff listening to patients: 0.9 • Staff explaining to patients what they want: 0.9 • Staff advising patients on treatment: 0.9 • Amount of time health officers spend with patients: 1.0 • Home visits by healthcare staff: 1.0 • General operation of the facility: 1.1
Reliability: 1.1	• Healthcare staff showing sincere interest in solving patients' health problems: 0.9 • Availability of healthcare professionals at all times: 1.4 • Waiting time to see healthcare professional: 1.1 • Time spent in the examination/consulting room: 1.0 • Functionality of the national health insurance scheme at the facility: 1.2
Assurance: 1.0	• Staff attitude/behavior: 1.0 • Safety at the facility: 1.0 • Answers staff provide to patients' questions: 1.0 • Privacy during examination/consulting: 1.1 • Staff seeking consent before treatment or examining patients: 0.8 • Assurance about confidentiality and protection of personal information: 0.8
Empathy: 1.0	• Attention patients received from healthcare staff: 1.0 • Staff understanding of patients' sickness/health problem: 0.9 • How patient health issue(s) was/were handled at the facility: 1.0 • Compassion or concern staff showed about patients' health problem: 0.9

Interpretation of mean scores: 0 (very satisfied), 1 (satisfied), 2 (neutral), 3 (dissatisfied) and 4 (very dissatisfied)

Satisfaction with responsiveness

Responsiveness was measured using nine items (9). These included patient satisfaction with medication information or when certain services will be performed, promptness of services, staff willingness to help patients, staff listening to patients, staff explaining to patients what they want, staff advising patients on treatment, amount of time healthcare staff spend with patients, home visits by healthcare staff, and the general operation of the facility. The overall mean satisfaction score for responsiveness was 1 - satisfied (Table 3).

Analysis by items revealed a mean score of 1.1 for patients' satisfaction with information about medication or when certain services will be performed. This mean score implies that patients were satisfied with the information provided. However, a few respondents (4.2%) were dissatisfied or very dissatisfied with this aspect because in many instances they are told that the facility has no drugs, and they have to buy them elsewhere (Fig. 3). A male participant lamented as follows:

> *Patients are often asked to purchase prescribed medications externally, as they are not available at the facility. In certain cases, even common medications such as paracetamol must be obtained elsewhere. This practice can be distressing and potentially life-threatening, particularly when individuals with urgent medical needs are directed to seek medication elsewhere before receiving treatment at the facility* (Male participant from Naro, 05/08/2023).

Responses regarding the promptness of services ranged from 0 (very satisfied) to 4 (very dissatisfied), with the average score being 1.1, indicating moderate satisfaction. Approximately 4.9% of respondents expressed dissatisfaction or strong dissatisfaction with the promptness of services, primarily due to the unavailability of healthcare staff and delays in receiving medical care. Some participants provided the following feedback:

> *Sometimes, even when they are in the room, it takes nearly an hour for them to respond. And when they do, it takes time for them to come to the consultation room* (Female participant from Naro, 07/08/2023).
> *They often cause delays in service delivery* (Male participant from Gbanko, 06/08/2023).
> *At times, they seem reluctant and behave as if we are forcing them to work* (Female participant from Gbanko, 06/08/2023).

The mean satisfaction score for the willingness of staff to help patients was 1 - satisfied. Frequency distribution of the responses showed that the majority were satisfied or very satisfied (93.3%) while a few were dissatisfied or very dissatisfied (2.7%) due to delay or unwillingness to treat patients, unavailability of staff at certain times (especially on Sundays), and the rudeness of the staff. The mean satisfaction score for the attentiveness of staff to patients' issues was 0.9, which means that patients are generally satisfied with the way healthcare staff listen to them. However, 0.4% were dissatisfied or very dissatisfied.

The mean satisfaction score for staff explaining to patients what they want is 0.9, and this implies that patients were generally satisfied. Nonetheless, 0.2% of the respondents were dissatisfied with the explanations provided by healthcare staff. Similarly, the mean satisfaction score for advice provided by healthcare staff on treatment was 0.9 (satisfied) with 0.2% of the respondents being dissatisfied.

The amount of time healthcare staff spent with patients recorded a mean satisfaction score of 1 - satisfied. Although the majority of the respondents (92.3%) were generally satisfied or very satisfied with the amount of time healthcare

practitioners spent with patients, 0.7% were dissatisfied. Also, the mean satisfaction score for home visits by healthcare staff was 1 - satisfied. However, 5.2% were dissatisfied or very dissatisfied with home visits by healthcare staff because they rarely or do not visit homes. Some participants had this to say when asked why they were very dissatisfied or dissatisfied with home visits by healthcare professionals:

> *They do not come to visit* (Female participant from Piree, 04/08/2023).
> *They have never visited any home* (Female participant from Napogo Yiri, 07/08/2023).
> *The previous staff used to but the new staff are not doing that* (Female participant from Naro, 07/08/2023).

Most respondents (86.7%) were satisfied or very satisfied with the general operation of the CHPS compounds with the mean score being 1.1 - satisfied. Only a few respondents were indifferent (7.1%), dissatisfied (5.9%), or very dissatisfied (0.2%) (Fig. 3). Reasons cited for the dissatisfaction included inadequate staff, unavailability of staff at all times, late opening hours, and a lack of basic drugs.

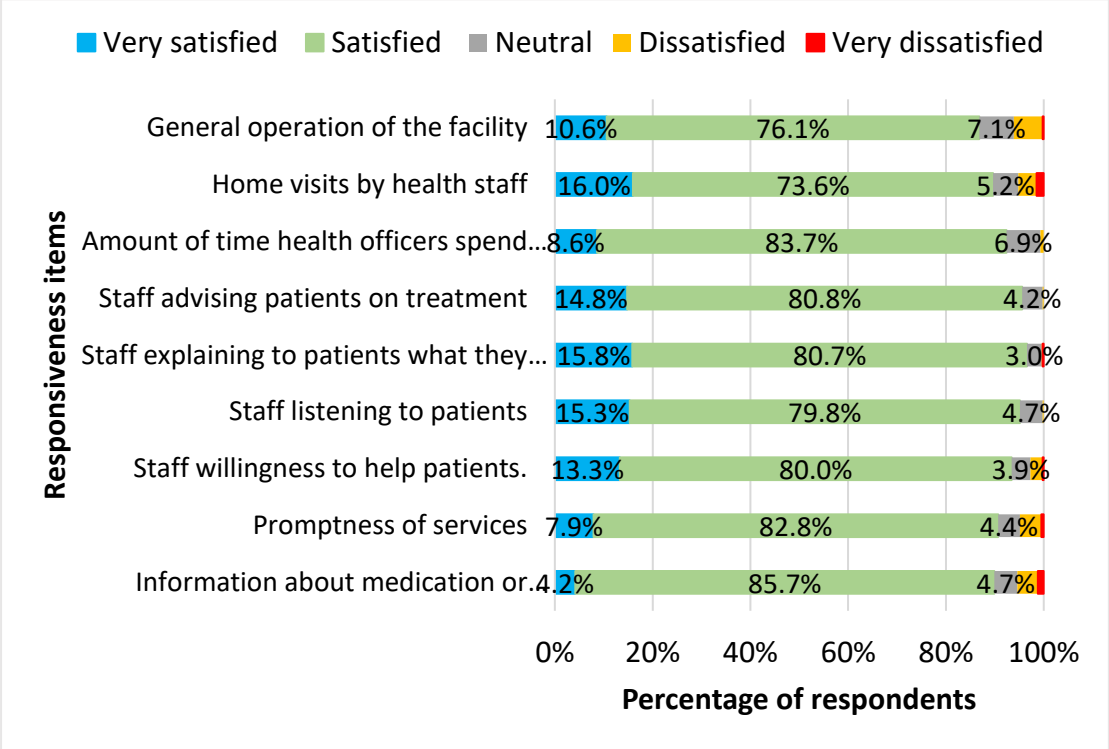


Figure 3. Patient satisfaction with responsiveness

Satisfaction with reliability

The refined SERVQUAL model used in this study comprises five reliability items. These items include: healthcare staff showing sincere interest in solving patients' health issues, availability of healthcare professionals at all times, waiting time to see a healthcare professional, time spent in the examination/consulting room, and functionality of the national health insurance scheme at the facility.

The overall average satisfaction score for reliability was 1.1 (Table 3), indicating that patients were reasonably satisfied with service reliability. The mean satisfaction score for healthcare staff showing sincere interest in addressing patients' health issues was 0.9, implying a satisfactory rating. However, 0.4% of the respondents expressed dissatisfaction with the sincerity of the healthcare staff in addressing patients' health issues (Fig. 4), as some of them were occasionally reluctant to leave their rooms to attend to patients. Regarding the availability of healthcare professionals at the facility at all times, the mean satisfaction score was 1.4, indicating a fairly satisfactory rating. The frequency distribution of the responses revealed that 74.1% of the respondents were satisfied or very satisfied with the availability of healthcare professionals at all times, while 17.6% expressed dissatisfaction, primarily due to the unavailability of healthcare professionals, especially on weekends. Below are some responses regarding patients' dissatisfaction with the availability of healthcare professionals:

> *Healthcare professionals are not always available during weekends* (Male participant from Goli, 05/08/2023).

> *Currently, there are only two healthcare professionals at the facility, one nurse and one midwife but the midwife has gone on leave, so we have to travel to Fian for labour services* (Female participant from Naro, 05/08/2023).

The responses on patients' satisfaction with the waiting time to see healthcare professionals ranged from 0 (very satisfied) to 4 (very dissatisfied), with a mean score of 1.1, indicating a satisfactory rating. Nevertheless, 3.2% of the respondents expressed dissatisfaction with the waiting time to see healthcare professionals. The mean satisfaction score for time spent in the examination/consulting room was 1, signifying satisfaction. A frequency analysis of the responses showed that the majority (92.7%) of respondents were satisfied or very satisfied with the time they spent in the examination/consulting room. Only 0.27% of the respondents expressed dissatisfaction with the time spent in the consulting room.

The functionality of the national health insurance scheme at CHPS compounds recorded a mean score of 1.2, which indicates satisfaction. Although 80.3% of the respondents were satisfied or very satisfied with the functionality of the national health insurance scheme, 11.3% expressed dissatisfaction, as they sometimes had to purchase medications even though their insurance was active (Fig. 4). Some of the participants stated the reasons for their dissatisfaction as follows:

> *We mostly buy medicines outside the facility although our health insurance is active* (Female participant from Goli, 05/08/2023).

> *The health insurance is useless since all medications are bought by us when the facility usually has no medicine* (Male participant from Naro, 07/08/2023).

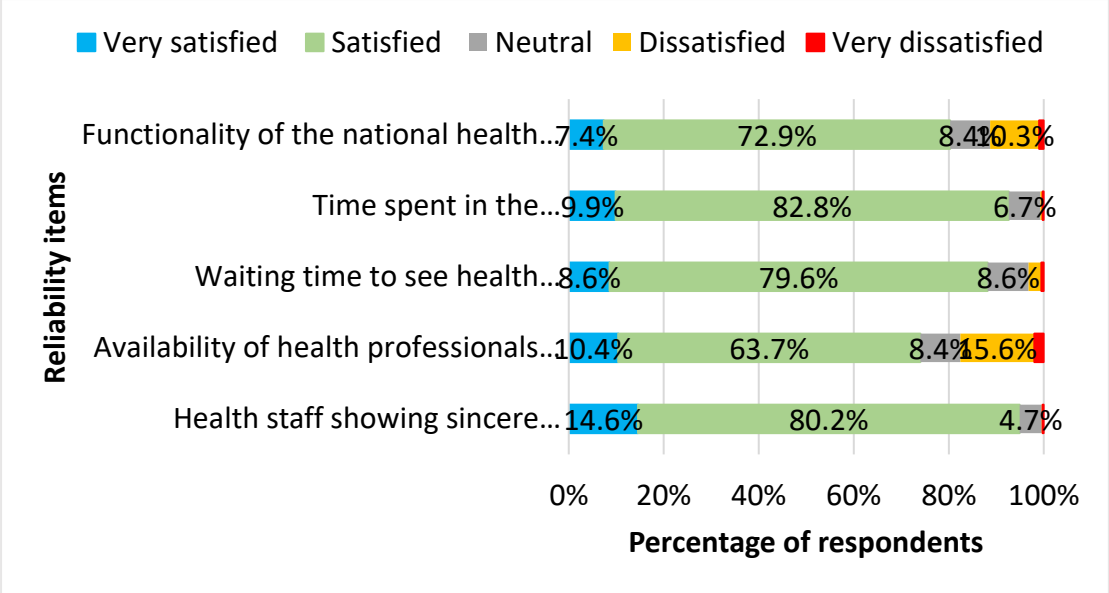


Figure 4. Patient satisfaction with reliability

Satisfaction with assurance

This dimension of the refined SERVQUAL model focuses on the knowledge and courtesy of healthcare staff, as well as their ability to inspire trust and confidence. It was measured using six (6) items: patients' satisfaction/dissatisfaction with staff attitude/behavior, facility safety, staff responses to patients' questions, privacy during examinations/consultations, staff seeking consent before treatment or examinations, and confidentiality and protection of personal information.

The overall average satisfaction score for assurance was 1 – satisfied (Table 3). The item-level results showed an average satisfaction score of 1 for staff attitude/behavior, indicating that patients are generally satisfied with how staff members behave. However, 2.7% of respondents expressed dissatisfaction with the attitude and behavior of healthcare staff (Fig. 5), citing instances of rudeness, unfriendliness, or harshness towards patients. Below are some direct responses from participants regarding their dissatisfaction with the attitude of healthcare professionals:

> *Some nurses are not polite to the patients* (Female participant from Nakooyiri, 07/08/2023).
>
> *Some nurses are slow in attending to patients. At times, they ignore calls or knocks on their doors when there is an emergency* (Female participant from Naro, 07/08/2023).

Safety at the healthcare facility received an average satisfaction score of 1, suggesting that patients are generally satisfied with the safety measures in place. While the majority of respondents were satisfied/very satisfied with safety at the facility, 0.7% expressed dissatisfaction (Fig. 5). Most (94.8%) respondents were satisfied/very satisfied with the answers provided by healthcare professionals to their questions (Fig. 5). Only 0.5% indicated that they were dissatisfied with the

answers provided by healthcare professionals due to instances of harshness towards patients. The average satisfaction score for the answers provided by healthcare staff to patients' questions was 1 - satisfied.

Regarding satisfaction with privacy during examinations/consultations, responses ranged from 0 (very satisfied) to 4 (very dissatisfied), with an average score of 1.1 - approximately satisfied. Frequency distribution of the responses showed that 82.3% of respondents were satisfied/very satisfied with privacy during examinations/consultations, 6.2% were neutral, and 11.5% were dissatisfied/very dissatisfied (Fig. 5). Some participants provided the following feedback when asked about their dissatisfaction with privacy during examinations/consultations:

> *There's no privacy especially when there are so many patients* (Female participant from Gbanko, 06/08/2023).
>
> *The consulting room is closer to the waiting room so whatever you are saying, those in the waiting area can hear* (Female participant from Naro, 06/08/2023)

Seeking patients' consent by staff before treatment or examination had an average satisfaction score of 0.8, indicating that patients are generally satisfied with the process of seeking consent by healthcare professionals. The frequency distribution of the responses showed that 95.5% of respondents were satisfied/very satisfied with staff seeking consent before treating or examining patients, 3% were indifferent, and 1.5% were dissatisfied.

The average satisfaction score for assurance regarding confidentiality and protection of personal information was 0.8, suggesting that patients are satisfied with the assurances provided by healthcare professionals about confidentiality and protection of personal information. However, 1.5% of respondents expressed dissatisfaction with confidentiality and protection of personal information due to a lack of privacy in the consulting room (Fig. 5).

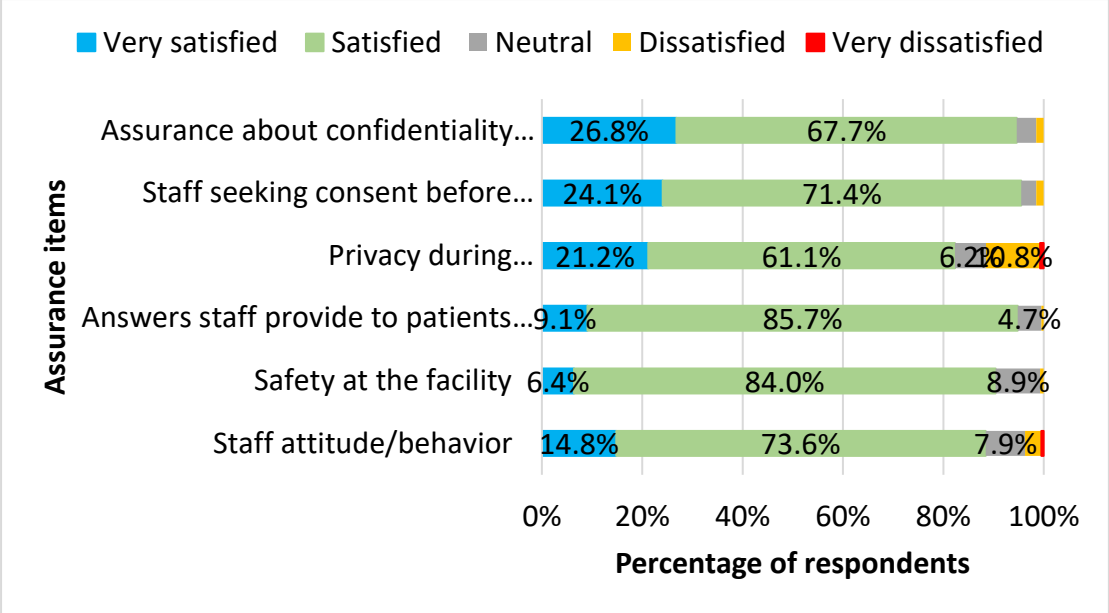


Figure 5. Patient satisfaction with assurance

Satisfaction with empathy

The empathy dimension of the refined SERVQUAL model assesses the level of care and attention provided by healthcare professionals to patients. Patient satisfaction with the level of empathy displayed by healthcare professionals was evaluated using four (4) items: attention received from healthcare staff, staff understanding of patients' sickness/health problem, how patient health issues were addressed at the facility, and the compassion or concern shown by staff regarding patients' health problems. The overall average satisfaction score for empathy was 1 (Table 3), indicating a high level of satisfaction. However, there were slight variations among the mean satisfaction scores for the individual items.

The mean satisfaction score for the attention received from healthcare staff was 1, indicating that patients were generally satisfied with the level of attention provided by healthcare professionals. However, a small percentage (1.2%) of respondents expressed dissatisfaction with this item, citing occasional delays in receiving attention from healthcare professionals (Fig. 6). The mean satisfaction score for staff understanding of patients' sickness/health problems was 0.9, which is slightly above the satisfaction level. The frequency distribution of responses showed that 97% of the respondents were satisfied/very satisfied with healthcare practitioners' understanding of patients' sickness/health problems (Fig. 6), while the remaining 3% were neutral.

Responses regarding patients' satisfaction with the way healthcare professionals handled their issues at the facility ranged from very satisfied (0) to very dissatisfied (4), with a mean score of 1, indicating that patients were satisfied with this item. However, 2.2% of the respondents expressed dissatisfaction with the way their issues were handled at the facility because they hardly got drugs at the facility. Other reasons cited for their dissatisfaction include the rude behavior of staff and lack of privacy during consultation. Lastly, the mean satisfaction score for the compassion

or concern shown by healthcare professionals regarding patients' health problems was 0.9, which is slightly above satisfactory. Nonetheless, a small percentage (0.5%) of respondents expressed dissatisfaction with this item (Fig. 6).

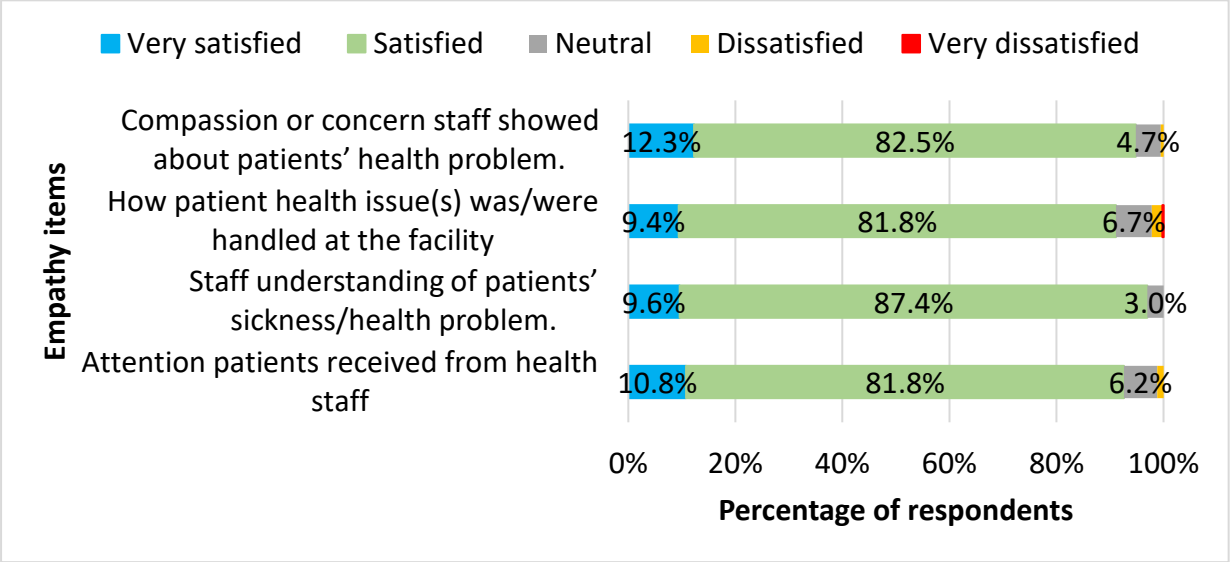


Figure 6. Patient satisfaction with empathy

DISCUSSION OF FINDINGS

Consistent with the refined SERVQUAL model of service quality, this study investigated patient satisfaction with CHPS facilities in the Nadowli-Kaleo district. We found an overall mean satisfaction score of 1.1, indicating respondents were generally satisfied with the services provided by CHPS facilities across the five SERVQUAL dimensions. Elsewhere, patients seeking care in community-based facilities were generally satisfied with the overall quality of care, consultation process, waiting time, and friendliness of the staff (Sakeah et al 2023;).

Despite the overall satisfaction with CHPS services, our findings point to four notable areas of dissatisfaction, namely, the appearance of the buildings, availability of equipment, comfort during waiting times, and availability of healthcare professionals at all times. We consider these as unmet CHPS service needs in the Nadowli-Kaleo District that require critical policy inputs to enhance patient satisfaction and improve community-based health service delivery. These issues represent clients' expectations, which CHPS services do not satisfactorily meet. Understanding these expectations of patients about CHPS facilities is key to the viability of the national program for strengthening the CHPS initiative (CHPS+) introduced in 2017 (Sakeah et al. 2023; Kweku et al. 2020) and community-based services in rural settings.

Dissatisfaction with the appearance of CHPS facilities relate to the small sizes of CHPS compounds, dilapidated structures, faded paint, leaking roofs and dirty surroundings. Respondents desire for more welcoming and conducive environment is reflective of the kind of pleasing and well-maintained facilities they may have experienced or heard about in the urban areas. Participants' feeling that CHPS facilities seem like 'hen coups' that make them 'not fit for purpose' corroborate with concerns about the need for investment in infrastructure and logistics to make the

CHPS program more viable (Elsey et al. 2023). Like community-based healthcare generally, while CHPS facilities are at the doorsteps of communities, dissatisfaction with their appearance can negatively influence patients' perception of the quality of care provided (Atinga et al 2018), ultimately impacting their trust and utilization of CHPS services.

Reported dissatisfaction with the availability of equipment aligns with previous findings about the widespread lack of functional equipment, logistics and medical supplies in CHPS facilities (Adusei et al 2024; Kuburu et al 2023). Inadequate beds, test strips, BP apparatus and blood transfusion equipment in the facilities hindered and demotivated community health officers. Participants' expressions of distress due to the lack of medications in the facilities and CHO's show of poor interest in the job resonate with evidence that logistical constraints can contribute to health providers' frustration and overall disaffection for their job (Thi Hoai Thu et al. 2015).

Nearly a quarter of participants (22.6%) were dissatisfied/very dissatisfied with comfort during waiting times due to inadequate infrastructure. These findings further highlight the importance of policy attention towards addressing infrastructural gaps to improve the aesthetics of CHPS facilities and enhance patient experience (Kweku et al. 2020). Discomfort with waiting times has a ripple effect on the utilization of CHPS services as patients avoid future discomfort by discontinuing treatment (Wongsomboon & Shepperd 2022) or patronizing alternative care (Mukumbang et al. 2017). This scenario threatens CHPS' objective of promoting the utilization of skilled and facility-based services especially for maternal and child health issues.

Our findings on respondents' dissatisfaction with the availability of healthcare professionals at all times align with the literature (Adusei et al. 2024). Evidence suggests that CHPS services may not be readily available when clients need them (Adi et al. 2021). Patients' dissatisfaction with the availability of healthcare professionals at all times is a potential threat to CHPS' objective of increasing the availability of health services especially in underserved communities. However, our findings point to the availability of CHPS services at all times as an unmet need and satisfaction gap in the study setting. Given the growing empirical evidence of absenteeism from work among community health officers under the CHPS program (Kaburu et al. 2023), coupled with the recent mass migration of Ghanaian nurses and midwives to Europe and North America (Poku et al. 2023), the need for proactive policy interventions to monitor and incentivize staff commitment and retention is imperative to sustain the CHPS policy. Indeed, it is argued that the degree of fit between the opening hours of healthcare facilities, and the presence or absence of health staff at their posts are crucial in determining access to healthcare when needed (Banerjee &Duflo, 2012). Banerjee and Duflo (2012) report that public health facilities in the Udaipur Municipality in India were closed 56% of the time. Banerjee and Duflo (2012) also argue that the absence of health workers was also extremely unpredictable and this, in turn, made it very difficult for the poor to rely on these public health facilities. Overall, our understanding of people's specific unmet needs with CHPS services is important for sustaining the program.

CONCLUSION

This study assessed patient satisfaction with CHPS facilities in the Nadowli-Kaleo district of Ghana, following the refined SERVQUAL model. A total of 30 items were examined, covering the five dimensions of the refined SERVQUAL model: tangibles, responsiveness, reliability, assurance, and empathy. Satisfaction for each item was measured on a five-point Likert scale, ranging from very satisfied (0) to very dissatisfied (4). The findings indicate that patients were generally satisfied with the services of CHPS facilities However, a modest proportion of the respondents (10-35%) expressed dissatisfaction with the availability of equipment at the facility, physical appearance of the facilities, comfort around the waiting area, easiness of finding ones way around the facility (tangible items), availability of health professionals at all times, functionality of the national health insurance scheme (reliability items) and privacy during examination/consulting (assurance item)..

The study recommends that the Ghana Health Service (GHS) and its partners should address patients' dissatisfaction with the appearance of CHPS facilities by renovating dilapidated structures, ensuring cleanliness, and creating an environment that is conducive to healthcare delivery. The discomfort experienced in waiting areas should be addressed by expanding the waiting areas and providing sufficient furniture. Furthermore, efforts should be directed towards ensuring the availability of adequate equipment, medical supplies, and logistical support at CHPS facilities. To address concerns about the availability of healthcare professionals at all times, the GHS should ensure that each CHPS facility has adequate number of CHOs. This needs to be accompanied by intensive monitoring of staff and the enforcement of appropriate rules and regulations for those who are irregular in their posts. CHOs who consistently report to work should be rewarded, particularly those working in understaffed CHPS facilities. By prioritizing the physical appearance of CHPS facilities, improving comfort during waiting times, and ensuring the availability of adequate equipment and staff at all times, CHPS facilities can better meet the needs and expectations of patients, ultimately improving access to quality primary healthcare services in rural Ghana.

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Authors Representations

We confirm that we have reviewed and complied with the relevant instructions to authors, competing interests, ethical approval, informed consent, and acknowledgement as noted below:

Competing interests

The authors declare no competing interests.

Ethical approval

The data for the study was sourced from Amplio Ghana; hence this article does not contain any studies with human participants performed by any of the authors.

Informed consent

There are no human participants in this article and informed consent is not applicable.

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