

# Research Article

# Health Resource Gaps in Primary Health Care Facilities: Community Members' Perspectives in the Era of Universal Health Coverage in Lawra Municipality, Ghana

Lawrence Bagrmwin<sup>(1)</sup>,<sup>1</sup> Britany Ferrell<sup>(1)</sup>,<sup>2</sup> Bernard Ziem<sup>(1)</sup>,<sup>3</sup> Reuben Aren-enge Azie<sup>(1)</sup>,<sup>4</sup> Evans Ibn Samba<sup>(1)</sup>,<sup>5</sup> Elvis Kuunifaa<sup>(1)</sup>,<sup>6</sup> Roger K. Kaburu<sup>(1)</sup>,<sup>7</sup> Francis Kobekyaa<sup>(1)</sup>,<sup>8</sup> Frederick Dun-Dery<sup>(1)</sup>,<sup>9</sup> and Ruth Nimota Nukpezah<sup>(1)</sup>

<sup>1</sup>Lambussie Polyclinic, Ghana Health Service, Lambusie, Upper West Region, Ghana

<sup>2</sup>Health Resource Partners, Seattle, WA, USA

<sup>3</sup>Ghana Health Service, Hwidiem, Ahafo Region, Ghana

<sup>4</sup>Nursing and Midwifery Training College, Sekwa, Bono Region, Ghana

<sup>5</sup>Nursing Training College, Lawra, Upper West Region, Ghana

<sup>6</sup>Babile Polyclinic, Ghana Health Service, Lawra, Upper West Region, Ghana

<sup>7</sup>Midwifery Training College, Jirapa, Upper West Region, Ghana

<sup>8</sup>School of Nursing, University of British Columbia, Vancouver, BC, Canada

<sup>9</sup>Ruprecht-Karls Medical School, Institute of Public Health, University of Heidelberg, Heidelberg, Germany

<sup>10</sup>School of Nursing and Midwifery, University for Development Studies, Tamale, Northern Region, Ghana

Correspondence should be addressed to Ruth Nimota Nukpezah; nimotaruth@gmail.com

Received 25 June 2023; Revised 24 September 2023; Accepted 26 September 2023; Published 7 November 2023

Academic Editor: Jianrong Zhang

Copyright © 2023 Lawrence Bagrmwin et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

*Background.* Health resources are key determinants of healthcare coverage. Community members who utilise healthcare have significant insights into the availability of health resources in providing healthcare. *Aim.* This study sought to explore community (health committee) members' perspectives on health resource gaps in lower-level health facilities in the municipality. *Methods.* The qualitative descriptive study explored the perspectives of community members who served on the health committee. Thirty-four community health committee members at community-based health planning and services (CHPS) compounds, maternity-unit CHPS, and health centres were studied. *Results.* The study found three high-level categories of resource gaps deemed relevant to community members—infrastructural gaps, equipment gaps, and safety-quality gaps. *Conclusion and Recommendation.* There are perceived gaps in health resources from the community members' perspective. It is recommended that the Lawra Municipal Health Directorate and other health directorates with similar health resource challenges take steps to fill health resource gaps to ensure universal health coverage.

# 1. Background

The participatory power of people as recipients and producers of healthcare is at the heart of successful health systems [1–3]. Community members have a significant role in measuring healthcare availability and quality [4–6] in universal health coverage (UHC). UHC means 100% health coverage of the population under the given health plan [7–9]. To guarantee UHC, human and non-human resources must be available

[10, 11]. The Ghana Health Service has set an ideal level for human resource availability. However, in a 2016 report, the Ghana Ministry of Health noted an excess of community health nurses (CHNs) compared to the number of functional community-based health planning and services (CHPS) zones. This surplus of CHNs has created logistical challenges, especially in terms of providing sufficient accommodation and amenities. According to Agyei-Mensah and de-Graft Aikins [12], Ghana's health infrastructural development experienced a stagnation in the decade (1970–80) of political instability led by military regimes, which has affected the state of health infrastructure even in recent times. To address this, the Ghana Health Service introduced CHPS to increase the service package at lower-level health facilities [13]. The Ministry of Health recommended a CHPS zone with a compound consisting of an accommodation and a service delivery point. The compound should be connected to a power grid with safe water. All equipment and medical consumables for treating minor illnesses, conducting surveillance, and attending to maternal and child health issues are components of CHPS [14]. The CHPS strategy has been used to provide close-to-client health care to the impoverished in remote areas people, who comprise 70% of our population, resulting in approximately 5% of the total OPD attendance countrywide [15].

The International Labour Organisation (ILO) asserted that, worldwide, about 1.3 billion people are not in a position to access effective and affordable healthcare in rural areas. In comparison, 170 million people are forced to spend more than 40% of their household income on medical treatment [16]. Second, lower-level facilities house and care for the poorest of many countries' populations [17]. Inhabitants in these areas tend to have a higher disease burden, where resources are least available, with lower financing access and limited capacity to solve health events that require more complex technologies and level of care [18].

The thrust of UHC is that health institutions cover the vast majority of the population with access to health services that can be considered "sufficient," adequate, and equitable (Rodin & deFerrant, quoted in WHO [8, 19]). UHC, in effect, means that healthcare inputs (equipment and logistics) are the right goods, in the right quantities, in the right condition, delivered to the right place, at the right time, or at the right cost, and are used for clients' care [8], to meet clients' expectations.

Globally, health resource gaps exist, which hinders the attainment of UHC. For instance, studies have found gaps in service quality, financial protection, inadequate coverage of services, inequitable access, high out-of-pocket payment, and workforce challenges [20-22] affecting UHC. A study by Sambo and Kirigia [23] found that in Africa, 56% of countries have fewer than eleven health posts per 100,000 population, with over 70% having fewer health centres, district hospitals, regional hospitals, and tertiary facilities. There is less financial commitment to the health of individuals per annum [23]. Infrastructural gaps such as lack of running water and electricity, ability to provide 24-hr service, shortage of medicines, as well as poor infection prevention and control measures [24] are common health resource constraints in sub-Saharan Africa. Health resource constraints have been shown to undermine the practical implementation of Primary Health Care in Ghana [12, 19]. According to the Oxford Business Group [25], community actions, even at the basic level, are more effective in delivering effective health outcomes than the formal sector. This study in the Lawra Municipality explored the community members' perceptions of the states of non-human health resources to identify critical gaps that exist to influence service delivery for community and public sector actions.

#### 2. Materials and Methods

2.1. Study Settings. An act of parliament (Legislative Instrument/L.I, 1434 of 1988) established the Lawra Municipality, located in the North Western corner of the Upper West Region. It lies between longitudes 2° 25"W and 2° 45"W and Latitudes 10° 20"N and 11° 00"N. The Municipality is bounded to the east by the Jirapa municipality, to the south by the Lambussie district, to the North by the Nandom municipality, and to the West by the Republic of Burkina Faso. The Municipality occupies 5.7% of the Upper West Region's total area of 18,476 square kilometres, housing an estimated 58,433 people from the 2021 population and housing census. This comprises 28,325 males and 30,108 females. Healthcare is structured into sub-municipalities, of which there are five: Lawra, Babile, Zambo, Eremon, and Domwine, which report to the Municipal Health Management Team. There are health facilities in every sub-municipality.

2.2. Study Design. The study adopted a qualitative descriptive study, exploring the perspectives of the community health leaders about the current health resource needs of health facilities situated in the communities to ignite both community and public sector action. The study adopted the constructivist approach to explore the perspectives of study participants on their understanding of the availability or otherwise of non-human resources [26]. This is because the researchers sought to understand the community members' perceived knowledge of health resource gaps in health facilities that served them. Qualitative study methods were appropriate, given that the study subjects were not core health workers in the health facilities but had in-depth knowledge about the needs of the facilities, which could be explored if they were allowed to express themselves.

2.3. Study Population. We purposefully recruited resident community members who were community health leaders at various health facilities to participate in the study. Community health leaders are people that various communities selected to represent them on the community health committees (CHCs) of health facilities. To be included, a participant must be a member of the CHC of a selected facility, not a health worker of the selected facility, a resident in the catchment in the health facility as a client or accompanying relative, adult (18 years and above) of sound mind, and consents to the study. We excluded participants who did not meet these inclusion criteria.

2.4. Sampling Techniques. The existing health facility categories that qualified to be called lower-level facilities—CHPS compounds, Maternity-Unit-CHPS, and Health Centres were used for the study. The researchers met key health stakeholders at the municipal health directorate to select a facility from each category they knew had non-human resource challenges for the data collection. Contacts were

TABLE 1: Demographic data.

Demographic data, $N = 34$	Facility A	Facility B	Facility C	Total
Age				
30-60 years	11	11	12	34
Sex				
Males	8	8	8	24
Females	3	3	4	10
Occupation				
Chief	1	1	2	4
Casual workers		1	1	2
CHC executive	2	2	3	7
Community reps	2	2	3	7
Volunteers	2	2	2	6
Health personnel	1	1	2	4
Assembly man		1	1	2
Landlord	1			1
Queen mother	_	_	1	1
Interaction type				
FGD	10	10	10	30
In-depth interview	1	1	2	4

made with the facility heads, who provided personal contacts and the location of the health committee members for direct engagement. Participants were selected because they represented their communities on the health committees and met at least quarterly with health facility management. Participants consented to the study and schedule arrangements set at their convenience for the interviews. For participants who had schedule conflicts, we conducted in-depth interviews at specific times convenient to them.

2.5. Sample Size. In total, 34 CHC members were engaged to reach data sufficiency. A 10-member Focus Group Discussion (FGD) was conducted at the CHPS facility (given a pseudonym hereafter "facility A"), then another in the maternity unit-CHPS (given a pseudonym hereafter "facility B"), and finally, in the health centre (given a pseudonym hereafter "facility C"). The researchers met key health stakeholders at the municipal health directorate to select these facilities from each category they know have non-human resource challenges for data collection. The study utilised a heterogeneous group of men and women of all ages for the discussion. The purpose did not border on their social standings but on their experience of the health facilities as leaders. All participants had the common interest of representing the communities that health facilities serve (see Table 1).

The study also interviewed four others using in-depth interviews. These were CHC members who had restricted schedules to be recruited for FGDs. In the case of the indepth, pseudonyms were according to facility codes and the number of interviewees—for instance, A1 for the first indepth interview under facility A.

2.6. Data Collection Procedure. Data collection tools were developed for the data using themes developed from empirical studies and guided by existing policies and guidelines of

the Ghana Health Service. A guide was used for the FGDs and in-depth Interviews. There were major questions and a series of follow-up questions. All interviews and discussions were recorded with a field notebook and audiotapes (smartphones) as backups. Researchers put their smartphones on flight modes during recording to avoid interrupting recordings.

During the FGD, a researcher would ask each participant the same question and be allowed to respond except if they decided otherwise. Where a response sounded ambiguous, a clarifying question was asked. Letters from the alphabet were used as code names for participants during discussions to ensure anonymity, for instance, Mr. A (first man in the row). Responses were recorded both manually and electronically. In the in-depth interviews, the researchers asked open-ended questions using paraphrasing, clarifying, and re-phrasing to collect participant data.

2.7. Data Analysis. The audiotaped data in FGD and indepth interviews were transcribed verbatim into the field notebook and compared with earlier direct recordings. The data were next typed into Microsoft Office Word 2016. The transcribed data were shared with three data analysts to read and immerse themselves in the data. The data were then analysed with NVivo software (version 12). The data codes were then grouped into subthemes and themes using the Framework analysis method to identify unique and commonly occurring themes.

2.8. Ethical Consideration. Ethical clearance was sought from the Institutional Review Board (IRB) of the Navrongo Health Research Centre of the Ghana Health Service (NHRCIRB364) for this study. Permission was also sought from the Municipal Assembly through the Municipal Health Directorate of the Ghana Health Services to conduct the study. The purpose of the study was explained to the study subjects to enable them to make informed choices. Those who consented either signed or thumb-printed the consent forms before data collection. During data collection, study subjects were reminded about their right to exit the study if they wished.

#### 3. Results

*3.1. Demographic Data.* The 34 participants from the FGD and in-depth interviews were mainly males (24), who are adults between 30 and 60 years. The participants were from diverse backgrounds, such as being chiefs (four), causal facility workers (two), health committee executives (seven), health volunteers (six), community representatives (seven), health professionals not working in selected facilities (four), assembly members (two), a community landlord, and a queen mother (see Table 1).

3.2. Health Infrastructural Needs. The first theme generated was infrastructure, focusing on the physical structure and components necessary for healthcare delivery. Key subthemes include size, walls, roofing, ceiling, windows, doors, lighting systems, and sections/units. Non-building components include standby power, water and water storage facilities, furniture sets, transportation, and accommodation. The environmental outlook includes facility fencing and tree planting to improve air quality and create a conducive environment.

Participants expressed concerns about the condition of healthcare facilities, including age, wall cracks, leaks, poorly maintained windows and doors, and animal infestations. These findings highlight the critical need for investment in healthcare infrastructure, both in building maintenance and providing essential non-building components. Addressing these infrastructural challenges is essential for improving healthcare services' quality and ensuring patients' and healthcare providers' safety and well-being. A few illustrations are as follows:

> "I think the whole facility needs to be worked on. I work here as a cleaner as well. Anytime it rains, the whole facility is always "flooded." We must drain the water before we can do any cleaning" (Madam A, FGD, Facility C).

> "Another important need is that the community built this present facility. The facility is not strong enough because we do not have enough resources. I cannot remember exactly (when it was built but), it was around 2003 there" (Mr. E, FGD, Facility A).

> "Part of our ceiling has fallen out. As a result, the facility became infested with bees. The bees invaded the living room of the health worker, through the ceiling to the rest of the facility. The chief and his people mobilised and went to spray them off. Even after the spraying, the bees are still around. I'm told that about two days ago, bees invaded the place again, chasing workers out of the compound" (Mr. B3, In-depth Interview, Facility B).

The study also found some challenges with health facility building that were not universal but were critical. Participants reported challenges such as a "certain terrible odour" found in more than one health facility that made both staff and community members uncomfortable and the roof of another health facility being damaged to the point of nonexistence. Participants described the odour as so offensive that one had to hold their breath whilst in the facility. The following text outlines how this may affect healthcare, especially at night, as health workers cannot stay at the facility.

"I want to return to a point earlier raised by Mr A about some bad odour in the facility. If you check the ceiling right now, it is like a heap of manure packed there. There is a heap of birds' droppings. If you come here by evening, and the birds fly out, you will think you are in a forest. I mean Bats. If you are here for the first time, you can be frightened by their numbers. "Plenty ones." They are disturbing us, so we appeal to anyone who can help. We must chase them out of the facility and work on it" (Mr. F: FGD, Facility A).

"In fact, we need our nurses to stay with us, but not in this state of the facility. When the facility was first built, the nurses used to stay here, but now, we have all seen it. Even now, the nurses come here in the morning, and by evening they go home" (Mr. A, FGD, Facility A).

According to the study participants, the health facilities in their catchment areas are too small (structure), lack some basic units, are far from the next level of care for easy referral, and the health services rendered are too limited. Toilets, washrooms, waiting areas, storerooms, delivery rooms, and treatment rooms were identified as areas missing among the identified health facilities. Here are a few illustrations:

> "The place where the workers need to keep our working instruments (stores), the folders, and others are all challenges. In the case of the stores, it is one of the tables the workers have turned into the store. The place where they need clients to sit and go in to see the clinician (waiting area) is not there. I witnessed a life example (Mr. E) here. When he fell sick and came, he had to lie on the floor like that because there was nothing to lie on" (Madam A., FGD, Facility B).

> "I think that if the facility is expanded and we add a unit that can care for pregnant women so that the authorities can send us a midwife, it would help us. The community members have made a by-law that no woman should deliver at home, and we are all implementing it. But when labour starts at night, we are always troubled because we now have to carry this woman to the next Health Centre where there is a midwife" (Mr. A2. In-depth Interview, Facility A).

Participants observed that some clients (especially pregnant women in labour and sick clients) were usually put in the same room and treated. A male participant observed:

> "There is something that struck me from what Madam A said. You know ("Balalikule yel ke di lang iri ne zur") there is discomfort in sharing one room. Just imagine a pregnant woman delivering where a sick person is lying. We must get different rooms for the sick, for labouring women, and even put the working instruments. We need a separate building to house the nurses and others so they can use it for healthcare" (Mr. D., FGD, Facility A).

A source of light (electricity) was reported as an important infrastructural challenge in all participants' health facilities.

The absence of lights was perceived to influence other health and related challenges like difficulties in managing labour, refusal of postings by health staff, panic response to night calls to serve, fear of reptiles, an infestation of health facilities, inability to stock some drugs (oxytocin), fear of being attacked at night, demotivation for staff and an increased risk of bleeding after delivery. The following text by a CHC member is an illustration.

"Our most important need is lights, especially when a woman is in labour. The facility had a solar panel, but it is broken down now. I witnessed a woman in labour at night. There was panic because the midwife had to manage the labour with their phone lights. Just imagine if the phone batteries did not have power or if the power ran out while managing her. After delivering, the midwives must clear the residual blood from the birth canal. I am also told that if part of the placenta is left, it can lead to bleeding." (Madam C3., in-depth interview, Facility C).

Closely linked with lights is the need for a standby power source. Many participants felt that the primary source of light (electricity) was more important, but the additions could be looked at later. A standby generator was more important to participants living around Facility C.

Participants saw water availability to health facilities as a serious challenge. Though some communities provided water reservoirs to serve the purpose, the intervention created new challenges. As a result, participants felt healthcare was slowed since health workers had an increased workload (walking to fetch water) and decreased water safety at the facility (unable to pump water straight to a facility). The following would illustrate more on the sub-theme.

"The borehole that used to supply water to the facility has broken down and now stands as a piece of metal. The community has its bit of a challenge, but the facility needs special attention because, with some conditions, I know the patients drink a lot of water. Assuming such a person is here, will the nurse stop the work and go to the ("baa") river to fetch the water for the patient? So, we need water as a community, but most importantly at the health facility" (Mr. A2, Indepth interview, Facility A).

"When the facility was built first, taps were provided, and water was flowing through. Later on, there was a problem, and water was not flowing, so they asked someone to check it. The person came and dug out some pipes from the walls, left, and never returned. We cannot get water flowing through the taps" (Madam A, FGD, Facility C).

"The whole community has a challenge with water, but the community challenges are better

than the facility. The nurses here will have to walk a distance (behind the school building) to be able to access water. Assuming a woman delivers and the nurses are to go and fetch water from somewhere! It is a big problem" (Mr. F., FGD, Facility C).

"The light and water are the major challenges. In the case of the water, there is a poly tank, and sometimes the women help to fetch the water, but how to pour the water into the tank is another. Usually, the women (who usually fetch the water) would have to climb a ladder to pour water into the tank" (Mr. A, FGD, facility B).

Transport was also featured strongly in the discussion. From the study participants' perspectives, the challenges with transport could be looked at from the nature of the road to the availability and strength of vehicles. The distance to a referral facility was a common complaint in all facilities. It was seen to play a role in whether a client would honour a referral to the next level. The next area of concern was the road, which was generally described as "not good" and had been linked to workers becoming tired whilst moving to the facility. Some people had been reported to have sustained injuries from falls from the water-logged and slippery nature of the road. The poor state of the roads contributes to the motorbikes becoming weak and thus breaking down easily. Here are some specifics:

> "The road to the clinic is not good for the nurses to use to this place. The place is a water-logged area, though we tried damming it. When it rains, a car cannot come here; a motor cannot come. The nurses also tire of the movement" (Mr. B., FGD, Facility A).

The discussion shed light on furniture, which was adopted to include wood-based devices in the health facility. So, furniture included patient beds, tables, and chairs. The need here was one of inadequate numbers. Furniture has also been used to improvise without other appropriate facilities. A summarised submission of the Community Health Officer is here.

> "We have just one set of furniture. Anytime we have guests, we will have to stand so that the guests can sit. The morale in these situations is low, and you can't give in your best" (Mr. G., FGD, Facility A).

Staff accommodation was featured strongly, too. Participants described staff accommodation as weak, leaking, burnt, and thus can be termed as "dilapidated." In Maternity-Units CHPS, participants asked for a separate accommodation from the health facility. Participants observed that because descent accommodation was unavailable, many health staff stayed a long distance away from the facility, making responses to provide healthcare slow and delayed. A participant who used to stay in one staff quarters described it this way.

"in those days, many of us could not sleep whilst it was raining. You would have to sit through the rains till it stops, then you drain the water before you could sleep again" (Madam A., FGD, Facility C).

The need to fence the facility to control human traffic during clinical emergencies was a crucial intervention for the facility's environment. The intervention would also protect the properties of the facility and those of the workers from criminal activities.

3.3. Health Equipment Needs. The second theme that was generated was equipment. Participants in the FGD, though not technically inclined, highlighted areas of need in equipment and instruments, especially the need for paediatric weighing scales, examination beds, thermometers, and trolleys. Expressing the opinion that the mix of instruments was important, a participant explained:

"I think the health facility work is like farm work. You don't carry only the hoe to the farm, and it would get to a time that you would need a cutlass to continue" (Mr. F, FGD, Facility C).

A health volunteer participant explained the current state of some instruments as follows:

"the weighing scale we use to measure the weights of newborns got spoiled recently. We are told some officers at the head office came and collected it to go and repair it but have since not returned it. The thermometers, too, we have only one. We used to have two, one for pregnant women and the other for sick people, but the one for sick is spoiled" (Madam A., FGD, Facility C).

A participant who had previously fallen sick and attended a health facility explained:

"I had the experience of falling sick and unable to sit up. I had to lie on the floor (instead of the trolley). I felt bad that day and even now, but not for the workers because I know that if it were there, they would have used it for me. I will be happy if things are better next time" (Mr. E., FGD, facility C).

The study participants also discussed needs relating to medical consumables, including drugs and stationeries, especially the availability and adequacy of patient folders, office supplies, and drugs. Participants linked the availability of drugs with client satisfaction with care, patronage of health care, and the rate of referral of both pregnant and sick clients. Specifically, participants were particular about the availability, the quantities (number of drugs given out), and the restrictions placed on facilities' use of some drugs. "We usually hear and sometimes experience that "the drugs are not there." But we believe them (health workers) because we have no cause to believe that the nurses will keep drugs without giving them out" (Mr. F., FGD, facility C).

Nevertheless, participants in each group concluded that upgrading the health facility to the next level of care (i.e., CHPS to Health Centre, Health Centre to Polyclinic, etc.) would have solved equipment and infrastructure issues. In addition, the move was considered to be capable of improving the health of the people living in the facility's catchment area. For instance, the absence of drugs, the restrictions placed on stocking some drugs, the absence of some categories of staff, the absence of some services (like infusions and transfusions), inpatient care, and the resultant referral to the next referral facility were all related to the current state of the health facilities (CHPS, Maternity-Units CHPS, etc.). It was argued that if the community health facilities were upgraded, most people who used to ignore them would patronise them. The distance would reduce the complications some clients experience when looking for means of transportation to reach the level.

> "If they had upgraded the facility to a Health Centre, it would have helped, and we would have appreciated it more. If the place were a Health Centre, the things we mentioned would have been brought automatically. Light, water, equipment and the rest would have been there. But the current state, we are told it is a small place, and so, so many things cannot be done here" (Mr. F., FGD, Facility C).

> "One important need that would solve all these was our cry to health authorities to raise the health facility higher. If that had happened, the process would have brought about the others we are discussing. The rate of sending people to another facility will reduce. If you look at the distance, even one referral impacts us. Often, the person does not get a vehicle to go (sometimes, in time), or community members will have to send them" (Mr. D., FGD, Facility C).

3.4. Safety and Quality Resource Needs. Under this theme, participants' submissions were not directly on the availability of resources to ensure safety and quality care but on how the healthcare was responsive to their needs with or without the resources. Generally, participants appreciated the dedication and sacrifices of staff members in the midst of the many needs of the health facilities. The expression of frustration with the inadequacy of health resources was therefore directed towards the system more than toward the health staff.

"The nurses are doing well, but the light is what is punishing them. We can see they are dedicated to their work, but light to work with is the problem. Sometimes, charging their phones is a problem. They usually struggled with clients at night, but honestly, they are doing well" (Mr. A, FGD, Facility B).

"Just about a week ago, we brought a patient to the facility. They sent for the person on duty, and he was delayed in coming. The reason was because of accommodation. The nurse stays outside the facility and, as a result, couldn't respond in time" (Mr. D., FGD, Facility C).

The study participants expressed dissatisfaction with drugs or, more often, clinical care services in general. The absence of drugs (and maybe medical consumables such as cotton, gauze, etc.) was the participants' major complaint, which was a hardship among the community members. Here is an illustration.

"A friend told me that any time he comes to the facility, the nurses will give him a few drugs and ask him to go and buy the rest. When he goes to buy the drugs, he finds that the amount charged is always too much. Because of that, he does not go to facility" (Mr. B., FGD, Facility A).

Participants also reported how they perceived safety needs to affect health service utilisation at lower-level facilities and the consequent referral of seemingly normal clients to the next level, as a service provider explained.

"There are times normal services that can be rendered cannot be due to resource constraints. Let's take the example of a sick client, and in the case of drugs, maybe apart from malaria drugs, most of the drugs will be out of stock. So, our only option is to refer to the next level but look at the distance. Most end up not going because of the distance" (Mr G., FGD, Facility A).

The delay in response, distance to cover, the absence of services such as infusions and transfusions, and the need for a referral were also areas where expectations were unmet.

"People complain about the non-availability of the drugs and the distance to cover to get to the facility. During the rainy season, the road becomes slippery and many fall while walking. Many of them accuse us, the committee members, that we are not strong enough, so they are not bringing drugs here" (Mr. E., FGD, Facility A).

"We have an ambulance here, but if you bring a patient and are referred, the workers will ask you to look for a "tricycle" (a three-legged motorbike). I think that the ambulance might have spoiled. My plea is for us to work on it. The patients are not always comfortable with the tricycle, and most get worse before reaching the facility referred to" (Mr. A, FGD, Facility B).

## 4. Discussions

The study discussed the resource gaps in lower-level facilities like CHPS, maternity unit CHPS, and Health Centres. The study found gaps in health infrastructure, equipment, and safety resources exist. The gaps in health resources have implications for clients' care in the concept of UHC. This is because health resources are the inputs into healthcare that aid in producing care, such that gaps in them would translate into gaps in the process and outcome of healthcare [27] and thus an impediment to UHC [19].

In the current study, participants reported gaps in the health infrastructure. This finding is in agreement with the findings of many other studies carried out in other parts of the world, which found infrastructure issues affecting UHC [23, 28–30]. Yeboah et al. [30] found in their review of the implementation of the national CHPS policy that infrastructural gaps exist in the CHPS facilities, similar to the findings of the current study. However, the former was not a qualitative study. Similarly, in their study in Uganda, Odokonyero et al. [29] found infrastructural challenges in their healthcare delivery system, concluding that health stakeholders invested less in healthcare infrastructure. The similarities in the findings could be due to the setting, in which both are rural and in the African region, and challenges are expected to be similar.

Specific infrastructure needs identified in the current study included water taps, power (electricity or generator), and additional rooms (labour unit, lying-in, treatments, stores, washrooms). This finding is consistent with the findings of Agustina et al. [31] in Indonesia, where some facilities have limited 24-hr clear and electricity supply. The finding is also consistent with Ifeagwu et al. [32], who found that water, electricity, and sanitation facilities are some basic amenities lacking in rural health facilities. However, study participants further identified walled security structures and planted trees around the clinic as necessities. This is consistent with the recommendation of the Civil Society Engagement Mechanism (CSEM) for UHC 2030 that all determinants of health (social, economic, and environmental) be looked at as challenges people face while seeking health and wellness [33].

Participants in the current study reported gaps in health equipment such as weighing scales, examination beds, thermometers, medications, and other stationeries. This finding is consistent with findings of other studies that found that lack of requisite health equipment such as drugs, supplies, and other logistics affects the delivery of quality healthcare services to meet the needs of communities at the primary healthcare level in low and middle-income countries [34–36]. For instance, a study by Addi et al. [35] in the Upper East region of Ghana found that the lack of equipment, including drugs, supplies, and other logistics, hinders quality healthcare delivery and low utilisation of CHPS compound. The similarity in findings could be due to geographical and economic resemblances.

Participants concluded that for lower levels to close the equipment gap, there is a need to upgrade the facility. This finding is consistent with Osoro et al. [36], who found that health equipment distribution disparities tend to favour bigger facilities.

The current study found that lower-level facilities could not provide minimum services to their population and, therefore, had to refer clients. This finding is at variance with findings by Agustina et al. [31], where lower-level facilities meet the requirements to provide basic health care with supply-side readiness. The differences in findings could be due to geographical and resource variation.

Another aspect of the health resources was access to drugs and medical consumables. This was a major area of dissatisfaction as clients complained of being asked to buy them though they presented National Health Insurance Scheme cards. Out-of-pocket payment is perceived to occur in Ghana. The findings are congruent with other studies that found out-of-pocket payment exists in the healthcare system [37, 38]. The findings underscore the consequences of outof-pocket payment, especially on the poor populations. For instance, a study by Akweongo et al. [37] in Ghana found that nearly half of the insured clients pay out of pocket for health services, with 75% and 63.2% being consultation and drugs, respectively. The finding is at odds with the WHO [39] recommendation on access to essential medicines at health facilities to help prevent out-of-pocket payments. It is important to prevent out-of-pocket payments because studies suggest they hinder the achievement of UHC [19, 40].

#### 5. Conclusions and Recommendations

The healthcare system in Lawra Municipality faces substantial obstacles to attaining UHC, according to a study. Despite the lack of quantitative data, this study illuminates critical issues concerning healthcare infrastructure, equipment, and safety.

Lawra Municipality lacks adequate healthcare infrastructure, equipment, and safety resources. The deficiencies hamper UHC's efforts to provide equitable and accessible healthcare to all residents.

Action is urgently needed, according to the study. These resource deficiencies must be addressed immediately in the short to medium term. UHC could be jeopardised if this impacts the quality of healthcare provided to the community.

To address these resource deficiencies, the Municipal Health Directorate is encouraged to submit grant proposals to charitable organisations. To adequately meet many of the identified resource needs, particularly those related to infrastructure enhancements and the acquisition of capital-intensive apparatus, external funding sources may be necessary.

The study also suggests strategically redistributing existing resources from facilities with surplus equipment or resources. As a result, this strategy can optimise resource allocation within the municipality, thereby ensuring resource effectiveness.

The study emphasises the need for further research to quantify these resource deficits. Healthcare stakeholders can develop targeted interventions and resource allocation strategies based on tangible data about these challenges.

Ultimately, the study identified deficiencies in Lawra Municipality's healthcare infrastructure, equipment, and safety resources that could impede the municipality's efforts to achieve UHC. To resolve these issues comprehensively and improve healthcare quality and accessibility in the region, government, non-governmental, and research organisations need to collaborate.

#### **Data Availability**

The data used to support the findings of this study are available from the corresponding author upon request.

## **Additional Points**

*Limitations of the Study*. The study findings cannot be generalised because the findings are specific to identified facilities. Though the study identified that gaps could exist, as reported by our participants, this study could not put quantities to them. There could also be other needs that did not come to the minds of our participants at the time of the study.

#### **Conflicts of Interest**

The authors declare that they have no conflicts of interest.

### **Authors' Contributions**

This work was a collaborative effort between all authors. LB, BF, RNN, and BZ designed the study, conducted the statistical analysis, drafted the protocol, and drafted the initial version of the manuscript. The authors LB, EIS, E K, and RKK oversaw the study's analyses and editing. The authors LB, FK, RA A, FD, and RNN conducted the literature searches and selected the journals. The final manuscript was perused and endorsed by all authors.

#### Acknowledgments

The study was self-funded.

#### References

- A. Aikins and K. Koram, "Health and healthcare in Ghana, 1957–2017," in *The Economy of Ghana Sixty Years after Independence*, E. Aryeetey and R. Kanbur, Eds., vol. 365, Oxford University Press, 2017.
- [2] A. Grieve and J. Olivier, "Towards universal health coverage: a mixed-method study mapping the development of the faithbased non-profit sector in the Ghanaian health system," *International Journal for Equity in Health*, vol. 17, no. 1, pp. 1–20, 2018.

- [3] WHO, "WHO community engagement framework for quality, people-centred and resilient health services," 2017.
- [4] L. Bagrmwin, An assessment of safety and quality management in two primary care hospitals in the upper west region of Ghana, 2016.
- [5] V. Haldane, F. L. H. Chuah, A. Srivastava et al., "Community participation in health services development, implementation, and evaluation: a systematic review of empowerment, health, community, and process outcomes," *PLoS One*, vol. 14, no. 5, Article ID e0216112, 2019.
- [6] A. Mohammad Mosadeghrad, "Healthcare service quality: towards a broad definition," *International Journal of Health Care Quality Assurance*, vol. 26, no. 3, pp. 203–219, 2013.
- [7] D. B. Evans, J. Hsu, and T. Boerma, "Universal health coverage and universal access," *Bulletin of the World Health Organization*, vol. 91, no. 8, pp. 546–546A, 2013.
- [8] D. Stuckler, A. Feigl, S. Basu, and M. McKee, "The political economy of universal health coverage," in *Background paper* for the global symposium on health systems research, 2010.
- [9] WHO, "Primary health care on the road to universal health coverage: 2019 global monitoring report," 2021.
- [10] S. Bennett, N. Jessani, D. Glandon et al., "Understanding the implications of the sustainable development goals for health policy and systems research: results of a research priority setting exercise," *Globalisation and Health*, vol. 16, no. 1, Article ID 5, 2020.
- [11] R. Bhatia, V. M. Katoch, and H. Inoue, "Creating political commitment for antimicrobial resistance in developing countries," *Indian Journal of Medical Research*, vol. 149, no. 2, Article ID 83, 2019.
- [12] S. Agyei-Mensah and A. de-Graft Aikins, "Epidemiological transition and the double burden of disease in Accra, Ghana," *Journal of urban health*, vol. 87, no. 5, pp. 879–897, 2010.
- [13] F. K. Nyonator, J. K. Awoonor-Williams, J. F. Phillips, T. C. Jones, and R. A. Miller, "The Ghana community-based health planning and services initiative for scaling up service delivery innovation," *Health Policy and Planning*, vol. 20, no. 1, pp. 25–34, 2005.
- [14] Ministry of Health, National Community-based Health Planning and Services (CHPS) Policy, Ministry of Health, Ghana, 2016.
- [15] Ghana Health Service, "2010 Annual Report," Volta Regional Health Directorate Clinical Care Division, GHS, Ho, 2010.
- [16] ILO, "Global Campaign on Social Security Coverage for All," Social Health Protection, ILO, 2007.
- [17] S. Koy, F. Fuerst, B. Tuot, M. Starke, and S. Flessa, "The flipped break-even: re-balancing demand-and supply-side financing of health centers in Cambodia," *International Journal of Environmental Research and Public Health*, vol. 20, no. 2, Article ID 1228, 2023.
- [18] K. Bernard, "The role of NHIS in the provision of equitable access to healthcare delivery (A case study of Bosomtwi Atwima Kwanwoma District)," M.S. thesis, Kwame Nkrumah University of Science Technology, August, 2011.
- [19] WHO, "Universal health coverage," 2013.
- [20] J. A. Asamani, H. Ismaila, A. Plange et al., "The cost of health workforce gaps and inequitable distribution in the Ghana health service: an analysis towards evidence-based health workforce planning and management," *Human Resources for Health*, vol. 19, no. 1, Article ID 43, 2021.
- [21] Y. Assefa, P. S. Hill, C. F. Gilks, M. Admassu, D. Tesfaye, and W. Van Damme, "Primary health care contributions to universal health coverage, Ethiopia," *Bulletin of the World Health Organization*, vol. 98, no. 12, pp. 894–905A, 2020.

- [22] A. Haileamlak, "How can Ethiopia mitigate the health workforce gap to meet universal health coverage?" *Ethiopian Journal of Health Sciences*, vol. 28, no. 3, Article ID 249, 2018.
- [23] L. G. Sambo and J. M. Kirigia, "Investing in health systems for universal health coverage in Africa," *BMC International Health and Human Rights*, vol. 14, no. 1, Article ID 28, 2014.
- [24] R. Y. Hsia, N. A. Mbembati, S. Macfarlane, and M. E. Kruk, "Access to emergency and surgical care in sub-Saharan Africa: the infrastructure gap," *Health Policy and Planning*, vol. 27, no. 3, pp. 234–244, 2012.
- [25] The Oxford Business Group, "Investment in health in infrastructure improves primary care for citizen in Ghana," 2020, https://oxfordbusinessgroup.com/positive-prognosisinfrastructure-are-driving-improvement-primary.
- [26] J. W. Creswell and J. D. Creswell, Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, Sage, 2018.
- [27] A. Donabedian, "The quality of care," Archives of Pathology & Laboratory Medicine, vol. 121, Article ID 11, 1997.
- [28] B. Dey, A. Mitra, K. Prakash, A. Basu, S. Ray, and A. Mitra, "Gaps in health infrastructure in Indian scenario: a review," *Indo Global Journal of Pharmaceutical Sciences*, vol. 3, no. 2, pp. 156–166, 2013.
- [29] T. Odokonyero, F. Mwesigye, A. Adong, and S. Mbowa, "Universal Health Coverage in Uganda: the critical health infrastructure, healthcare coverage and equity," 2017.
- [30] B. Yeboah, T. Letsa, E. Mensah, and E. Odame-Ankrah, "Progress of community-based health planning and services in Ghana," *Global Scientific Journals*, vol. 7, no. 12, pp. 1212– 1228, 2019.
- [31] R. Agustina, T. Dartanto, R. Sitompul et al., "Universal health coverage in Indonesia: concept, progress, and challenges," *The Lancet*, vol. 393, no. 10166, pp. 75–102, 2019.
- [32] S. C. Ifeagwu, J. C. Yang, R. Parkes-Ratanshi, and C. Brayne, "Health financing for universal health coverage in sub-Saharan Africa: a systematic review," *Global Health Research and Policy*, vol. 6, no. 1, Article ID 8, 2021.
- [33] CSEM, Civil Society Statement Global Conference on Primary Health Care Astana, Kazakhstan, Civil Society Engagement Mechanism, 2018.
- [34] E. Abodey, I. Vanderpuye, I. Mensah, and E. Badu, "In search of universal health coverage—highlighting the accessibility of health care to students with disabilities in Ghana: a qualitative study," *BMC health services research*, vol. 20, no. 1, pp. 1–12, 2020.
- [35] B. Addi, B. Doe, and E. Oduro-Ofori, "Towards quality primary health care: the dilemma of community-based health planning and services (CHPS) in health service provision in Ghana," *Journal of Health Organization and Management*, vol. 36, no. 4, pp. 482–502, 2021.
- [36] A. A. Osoro, E. B. Atitwa, and J. K. Moturi, "Universal Health Coverage," 2020.
- [37] P. Akweongo, M. Aikins, K. Wyss, P. Salari, and F. Tediosi, "Insured clients out-of-pocket payments for health care under the national health insurance scheme in Ghana," *BMC Health Services Research*, vol. 21, no. 1, Article ID 440, 2021.
- [38] W.-Y. Lee and I. Shaw, "The impact of out-of-pocket payments on health care inequity: the case of national health insurance in South Korea," *International Journal of Environmental Research and Public Health*, vol. 11, no. 7, pp. 7304–7318, 2014.
- [39] World Health Organization, "Health system financing: the path to universal coverage," World Health organization, Geneva, The World Health Report 2010, 2010.
- [40] B. Garshong and J. Akazili, Universal Health Coverage Assessment Ghana, Accra: Global Network for Health Equity, 2015.