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"They are trying their best": incarcerated individuals' assessment of general healthcare services in selected Ghanaian prisons

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Abstract

Background The World Health Organization (WHO) has indicated that the absence of prison health poses a threat to public health, making it important to safeguard access to quality healthcare for incarcerated populations. Although several studies have explored the quality of care in prisons, there is a dearth of empirical evidence on the perspectives of incarcerated individuals. This study investigated incarcerated individuals' perspectives and opinions on the general healthcare services in Ghanaian prisons.

Methods Utilizing a qualitative approach, focus group discussions were conducted with 51 incarcerated individuals in five prisons sited in the Northern, Middle and Southern zones of Ghana. Thematic analysis following the tradition of Braun and Clarke was conducted. Four of the six constructs of the WHO Health Systems Framework – service delivery, health workforce, access to essential medicines, and leadership and guidance – were applied deductively to organise the data into themes and subthemes.

Results Four themes were generated from the analysis: "Health service delivery", "Health workforce in prisons", "Access to essential medicines" and "Leadership; regulating healthcare services". Participants rated health services in prisons as below average compared to those available to the general population. The use of nurses as prescribers in prison infirmaries, though consistent with Ghana Health Service policy, seems to negatively influence prisoners' perceptions of the quality of the health workforce in prisons. Lack of basic equipment and essential medications at the infirmary for common endemic conditions such as malaria coupled with the bureaucratic processes required to access care outside of the prison also negatively affected incarcerated individuals' perceptions of the quality of health care.

Conclusions Incarcerated individuals perceived that the quality of health services provided in prisons was inferior to that provided in the general population. Addressing challenges associated with the unavailability of essential drugs and equipment, improving the number of health staff, and addressing bottlenecks in accessing urgent care will enhance the experiences of incarcerated populations on the quality of care given.

Keywords Prisons, Incarcerated individuals, Health service, Quality, Ghana

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Background

Healthcare in prisons is not only an important part of an effective criminal justice system, but it also has implications for general public health (Bhaumik and Mathew, 2015). Healthcare services and management in prisons feature prominently in the Standard Minimum Rules for Prisoners (also known as the Nelson Mandela Rules) outlined by the United Nations Office on Drugs and Crime (UNODC, 2015). This is in line with the notion that access to healthcare is a fundamental human right that should be available to everyone regardless of their legal status (Nunes, 2021). Moreover, although prisons are physically confined spaces, they are not insulated from the rest of society as they are expected to provide reformation to incarcerated individuals for reintegration upon release. Thus, the state of prison health can significantly impact the health of society at large, as prisoners may become a source of transmission of infectious diseases in prisons to the general population at the point of exit from prison (Wainwright et al., 2023). Indeed, the World Health Organization (WHO) has indicated that the absence of prison health poses a threat to public health (Enggist et al., 2014). The WHO has, therefore, reiterated the importance of safeguarding access to healthcare for incarcerated individuals without any discrimination (Abbing, 2013).

In Ghana, efforts to improve healthcare delivery to prisoners is reflected in collaborations between the Ghana Prisons Service (GPS) and the Ghana Health Service (GHS) to not only improve access to healthcare but also ensure that the quality of healthcare in prisons matches up to that of the general population (Baffoe-Bonnie et al., 2019; Ghana Prisons Service, 2010). In line with these measures, prison infirmaries are integrated into the Primary Health Care system established by the Ghana Health Service, where health professionals provide medical care to incarcerated individuals (Anane-Amponsah, 2021). However, with an estimated 15,198 people incarcerated (representing 47 per 100,000 of the general population), Ghana's prison population has outpaced infrastructural development, resulting in overcrowding and other conditions that undermine the quality of healthcare in prisons (Baffoe-Bonnie et al., 2019). Other factors including security requirements in prison installations, inadequate human resources, and lack of healthcare financing have also been found to constrain healthcare administration in Ghanaian prisons (Baffour et al., 2024). These conditions have implications for achieving positive health outcomes in prisons. Indeed, past research has reported various adverse health conditions among prisoners (Baffoe-Bonnie et al., 2019). For instance, compared to the general population, incarcerated individuals in prisons are estimated to be three times more likely to contract HIV, Hepatitis B, and tuberculosis (Wali et al., 2019). Also, about 65% of incarcerated individuals are reported to meet the criteria for alcohol and substance abuse in the Diagnostic and Statistical Manual (DSM)-IV (American Association of Family Physicians, 2023).

However, like other settings in sub-Saharan Africa, there is scarcity of research on the health systems in Ghanaian prisons. A notable exception is a recent study by Baffoe-Bonnie et al. (2019) that examined the quality of healthcare provision for male prisoners at the James Camp Prison in Accra from the perspectives of prison officers and healthcare providers. Although this study sheds light on various factors that shape health service delivery in Ghanaian prisons, it focused on prison officers whose views and experiences may not reflect those of incarcerated individuals. We extend this study by exploring the views of incarcerated individuals across multiple prison facilities. Specifically, we drew on the WHO health systems framework (WHO, 2010) to investigate incarcerated individuals' perspectives and opinions on the general healthcare services in Ghanaian prisons.

The WHO Health Systems Framework offers a structured approach to analyze the complex interplay of various factors that impact health service delivery in prisons. The framework suggests that health care delivery is shaped by six key factors including service delivery, health workforce, health information systems, access to essential medicines, financing, and leadership/governance (WHO, 2010). By applying this framework, the study seeks to shed light on the quality of health service delivery in Ghanaian prisons and identify areas for improvement for policy makers. The framework also provided the explanatory power that afforded the researchers the opportunity to interpret the meaning of the data while establishing the connections between the empirical findings and these already existing theoretical concepts.

Although this framework has been applied to assess the quality of health service in prisons, this line of research has focused mainly on the perspectives of prison and health staff (e.g., Baffoe-Bonnie et al., 2019). There is limited empirical application of the framework to seek the perspectives of incarcerated individuals who are end users on the quality of health services in prisons. Arguably, no matter their legal status, patients are key stakeholders in improving health systems (Wale et al., 2021). Hence, it is imperative that their perceptions are sought and included in efforts to enhance care. By engaging the perspectives of incarcerated individuals, this study sheds light on systemic issues in prison healthcare, offering insights to guide policy improvements in alignment with the Sustainable Development Goals' principle of "leaving no one behind".

Methods

Research paradigm

The interpretivist paradigm underpinned the study. This paradigm purports that human reality is subjective and socially constructed and that this reality is shaped by previous experiences and the social context in which those studied find themselves (Kivunja and Kuyini, 2017). Accordingly, people interpret or make meaning of phenomena by combining their prior knowledge with new experiences and concepts they encounter (Ryan, 2018). Consequently, with the application of this approach in this study, the participants constructed their own reality of the prison health system, using their 'historical' experiences of the health system outside of the prisons as reference and thus, shared their subjective views of the quality of the care they received in the prisons.

Study design and participants

This study employed a qualitative approach involving an explorative descriptive design. This design allowed an in-depth and holistic exploration of incarcerated individuals' perspectives and experiences of healthcare delivery in Ghanaian prisons, as relatively little is known about the phenomenon. The design involved focused group discussions (FDGs) among purposively selected incarcerated individuals. Multi-stage sampling was used to select five out of the seven medium security prisons in Ghana for the study based on geographical zones (i.e., northern zone, middle zone, and southern zone). This was to ensure that prisons from various parts of the country were represented in the study. Thereafter, we also employed maximum variation sampling in selecting the prisons with the focus on ensuring gender representativeness. Thus, three male and two female prisons were selected. The selected prisons include the Tamale Central Prison (male) located in the northern zone of Ghana, Kumasi Female Prison and Kumasi Male Prison both located in the middle zone of Ghana, and the Ankaful Main Camp Prison (male) and Nsawam Female Prison both in the southern zone (Ghana Prisons Service, 2022). Recruiting participants from the different prisons was necessary to provide a holistic picture of perceived healthcare quality across Ghanaian prisons.

The eligibility criteria for participation in the study included being an adult inmate (aged 18 years and above) incarcerated for more than three months and having accessed health services while in prison. We assumed that individuals who had been in prison for more than three months would be more likely to have an experience with the prisons' health services and have a better appreciation of healthcare delivery in the prisons. The nurses and prison officers working within the prison infirmary, who acted as gatekeepers, were consulted to identify eligible participants, discuss the purpose of the study, and recruit consenting inmates. Verbal and written consent was obtained by the researchers before the start of each discussion to ensure that participants' autonomy was respected. Nonconsenting individuals, incarcerated individuals in juvenile detention and maximum-security prisons, and individuals incarcerated for less than three months were excluded from the study. Participants were then recruited using purposive sampling approaches. A total of 51 participants were recruited comprising 31 males and 20 females.

Data collection

Data collection was undertaken from October to December 2022 using focus group discussions (FGDs). Five focus groups (FG) of varying sizes were organized for males (FG 1: $n=11$, FG 2: $n=10$, FG 3: $n=10$) and females (FG 4: $n=12$, FG 5: $n=8$) to discuss the topic of "general health services in Ghanaian prisons". Each session was led by a moderator unknown to the participants and supported by two colleagues. The experienced lead moderator of the discussion exploited the research topic to promote the conversation. All the discussions were audio recorded with consent from the participants. The FGDs were held separately for males and females, as male and female prisoners are detailed in different prison establishments with different prison rules and are not allowed to be mixed. Research assistants, acting as non-participating observers, documented field notes. The moderators received a one-day training on guidelines for dealing with incarcerated individuals and the prison system. The discussion guides were adapted from the WHO "Health Systems Framework" (WHO, 2010) and the "HIV/AIDS Prevention, Care, Treatment and Support in Prison Settings: A Framework for an Effective National Response" document (Lines and Stoever, 2006). All the discussions occurred within the confines of the prisons at a pre-agreed setup to ensure confidentiality. The FGDs lasted 45 to 60 min. Data saturation was determined at the point when two consecutive focused group sessions revealed no additional second level categories (Hennink et al., 2019). Hence, the researchers deemed saturation had occurred after the fourth FDG but confirmed with a fifth session.

Analysis

All audio recordings were transcribed verbatim and the documents were exported into ATLAS.ti software version 8.4.4 for analysis. Thematic analysis following the tradition of Braun and Clarke (2006) was conducted. Following familiarisation with the data, an initial inductive analysis was conducted by two researchers who openly coded the text by assigning labels to relevant segments of

Table 1 Themes and subthemes

Theme	Sub-theme
One: Health service delivery	• Rating prison health service • A case for improved service delivery • A look at primary preventive measures
Two: Health workforce in prisons	• A call for skilled personnel • Scheduling of health staff
Three: Access to essential medicines & technology	• Unavailability of drugs in infirmary • Lack of logistics
Four: Leadership: regulating healthcare services	• The hurdles of bureaucracy • Feeling abandoned by government

the data that were significant to the purpose of the study. A total of 170 codes were initially created. Thereafter, the codes were categorised by comparing segments that were similar to develop patterns. Four out of the six constructs of the WHO Health Systems Framework – service delivery, health workforce, access to essential medicines, and leadership and guidance – were then applied deductively to organise the categorised data into themes and subthemes. Adaptation of the framework was necessary as the participants were not in a position to provide detailed information on the health information systems and financing of health care services (as defined by the framework) within the prison. All other researchers reviewed the analysis to confirm their agreements or where necessary consensus was reached to ensure the accuracy of the analysis.

In line with the recommendations to ensure trustworthiness of research underpinned by the interpretivist paradigm, the constructs proposed by Lincoln and Guba (1985) including dependability, credibility, and trustworthiness were applied as standard. Specifically, to ensure dependability, we maintained a detail record of all research activities from the designing of the study to data collection and analysis, and report writing. We also ensured that the same procedures were followed in all the FGDs across the selected research sites. Additionally, the analytical steps were discussed among the research team to ensure that alternative viewpoints were duly considered. These strategies helped to ensure the credibility of the findings. Finally, we provide thick descriptions of participants views and ensure that our interpretations are grounded in the data.

Results

Four themes were generated from the analysis: "Health service delivery", "Health workforce in prisons", "Access to essential medicines", and "Leadership; regulating healthcare services". Subthemes were generated under each theme (Table 1).

Theme 1: health service delivery

The theme reveals the perceptions and opinions of participants on the quality of care they received in prison as compared to those outside of prisons. Three subthemes emerged including 'rating prison health services', the case for improved service delivery', and 'preventive healthcare'.

Rating prison health services

All participants expressed their opinions about the quality of healthcare they received in prison. It was evident that the rating varied based on the setting of the discussion. On a scale of 1–10, majority of the participants across the discussions rated the service as 5 or less. A participant said:

> *Mr.[1]1: I will score it 2 out of 10. (FG 3- Male prison)*
> *Mr. 7: I agree with my brother … I will also give them 2 out of 10. (FG 2- Male prison)*

A participant gave a relatively higher score (an average of 5) based on his assessment of the efforts of the prison officers rather than the services he received. He said:

> *Mr. 8: On the scale of 1-10, I will give them 5 because at times they try their best. (FG 1- Male prison)*

Of all the participants, only one rated the services they received above average; 7 on the scale of 10. Like, Mr. 8, this participant also based his assessment on the effort and commitment of the health care officers in spite of the constraints they operate within.

> *Mr. 4: I don't agree with my brothers, I will give them 7 out of 10 because if you consider things, if you are sick, they will make sure that what they can do, within their power, they will do it here. (FG 2- Male prison)*

[1] The essence was to capture the gender of the respondent. "Mr." and "Ms." were used for male and female participants respectively.

The case for improved service delivery

The narratives revealed concerns of long waiting times at the infirmary. This delay was attributed to the attitude of health workers and officers attending to clients in the infirmary. For example, some participants mentioned that tardiness and a low sense of urgency on the part of health officers meant that incarcerated individuals often receive care late or miss their turn.

> *Mr. 4: We [sick incarcerated individuals] will be in a queue. At times we will go and sit there for about 30 minutes -1 hour and no officer will attend to you… Some of the officers here, they are not punctual. (FG 2- Male prison)*
> *Mr. 2: When we [incarcerated individuals] are sick, we will be in a queue for about 20 minutes -1 hour before an officer nurse will attend to you… It will delay you and here too we are using time. … You know that our time is also limited; we can't wait but you have to sit. When the bell is rung, they will tell you to go inside [cell]. (FG 2- Male prison)*

Some of the explanations given by participants in support of their low rating of prison health service delivery included the perceived lack of thorough health assessment prior to receiving their prescription. This situation seems to reduce incarcerated individuals' confidence in the quality of health care they receive in the prisons.

> *Mr. 7: My experience is that when I came, I was sick. And when you are sick you only narrate what is wrong with you; they don't examine you. (FG 2- Male prison)*
> *Mr. 4: I am going to my eleventh month of staying here, and I can tell you that my temperature has not been checked before. I am an asthmatic patient and I fall ill often. I remember… my pressure was high and they don't have anything to check. They have never checked my heartbeat. (FG 1- Male prison)*
> *Ms. 4: Before I came here, when I went to the hospital, they checked everything and sometimes even requested for lab, but there has been nothing of that sort when I got here. (FG 4- Female prison)*

Another concern of the participants was lack of equipment at the infirmary for health service delivery. This, the participants believed, impacted the care they received. The following are excerpts from some participants:

> *Ms. 8: When I got here, they had to admit me here and put drip on me. But the metal that they hang the infusion [drip stand], there was none available. So, they had to hang it on my bed. So, up to now, there is one [infusion] left that they still haven't done it. (FG 5- Female prison)*
> *Ms. 1: Majority of us have high BPs here and we don't even get checked because the BP machine is spoilt… From time to time, they should check our sugar level, typhoid but we don't have the testing kits, a whole lot of minor things; even testing kits for malaria which is supposed to be very common is not here. (FG 5- Female prison)*
> *Mr. 5: They [health staff] don't have enough equipment to work with here in prison, so how will they work efficiently? (FG 1- Male prison)*

A call for improved health service delivery resounded across the groups, with a call to improve the standard of the infirmary.

Preventive health care

Participants reported that health education was conducted in some prisons to equip incarcerated individuals on disease prevention. Some participants indicated that prison officers were actively involved in educating prisoners on various health issues including HIV. A female participant expressed her appreciation of an officers' involvement in physical and mental health education in the following excerpt:

> *Ms. 1: Our madam that takes care of us is actually doing a good job. Once in a while we get educated and tested not just on HIV but on other things. I believe she is a psychologist, so she is very helpful in mental health; she educates us a lot and I like her for that. (FG 5- Female prison)*

Collaborations with governmental and non-governmental agencies to train selected incarcerated individuals as peer educators was one of the strategies identified to promote health literacy. Some participants welcomed such initiatives and thought it should be promoted in the Ghanaian prison system.

> *Ms. 1: Please, the peer education that I said I do and the PPAG came to train us… They educated us about all of this. (FG 4- Female prison)*
> *Ms. 6: Some people from HIV office came to train some of us as peer educators. So, I was educating the new incarcerated individuals… We need more of such education; people should come and teach us. (FG 4- Female prison)*

This observation was, however, not consistent across all the prisons but was limited to some prisons.

> *Mr. 2: Here [in this prison], since I came here, there is nothing of that sort. … Education on the various diseases is totally down here… (FG 2- Male prison)*

Participants in these institutions requested education on health issues to increase awareness and promote prevention of disease transmission. One said:

> *Where we are now you cannot be seriously eyeing prevention, so first of all, education needs to go down to the last man for him to understand exactly what the issues are… So, we need to educate every inmate that comes here… So, I think education needs to go to everybody to understand so that we will all be on the same page. (FG 1- Male prison)*

The narratives revealed insufficient efforts to maintain environmental conditions that ensure good health for incarcerated individuals and prevent the occurrence of diseases. The impact of the environment on the disease transmission resonated across discussions, with overcrowding in the prisons highlighted as contributing to the spread of diseases.

> *Mr. 3: Recently, I was told that chicken pox outbreak was here, and we get it through body contact. And I could see that in my cell within three days, one person had it. And those sleeping besides quickly had it too. So, I am suggesting that if anything can be done about the congestion. (FG 2- Male prison)*
> *Mr. 10: If I get the chance to meet the authorities, what I will say is to try their best to decrease the number of people in the cell, so that it will prevent overcrowding in the prison. (FG 2- Male prison)*
> *Ms. 5: Our number is more than expected for this prison. This brings about overcrowding. … Imagine when the temperature gets hot? The windows are very small... The door is very small and is again closed for long hours. If you stay in this, it can even give you pressure because if you feel hot and sweating you can't sleep. (FG 5- Female prison)*

Participants also reiterated the issue of inadequate nutrition for incarcerated individuals, which impacts their wellbeing. They lamented the low government feeding budget for incarcerated individuals, which is woefully insufficient for meeting the nutritional needs of prisoners.

> *Ms. 6: The government is not giving us enough food. One cedi, eighty pesewas [$0.16][2] is not enough for three square meals; it is not even enough for one meal … to support the medicine. And before you know it you are going outside to work (FG 4- Female prison)*
>
> *Ms. 1: Government gives GH₵1.80 every day for rationing… What food can be purchased with that amount to feed for the whole day? They don't give enough food to be able to get enough nutrient to boost the immune system to fight the virus. (FG 5- Female prison)*

Theme 2: health workforce in prisons

From the participants' narratives, their perception of the professionality and the preparedness of the health personnel to handle health issues in the prisons came to the fore.

A call for skilled personnel

Several participants mentioned that their infirmaries were manned by nurses, with no doctor to provide the necessary medical examination and care they felt they needed. One said:

> *Ms.1: We don't have a doctor here but we have nurses here. When you are sick you would have to be taken outside. (FG 4 - Female prison)*

Some participants shared concerns about nurses being prescribers in prisons and argued that the scope of nursing training limited their knowledge on drugs and therefore questioned nurses taking up the role of prescribers in prisons.

> *Mr. 7: I am a health tutor by profession… I know that every nurse is trained in pharmacology... but they are not trained to prescribe drugs. In here [prison], when we fall sick and come to them, they prescribe the drugs... (FG 1 - Male prison)*

Thus, to the participants, although there were professional nurses at post within the prison infirmaries, they were handicapped in providing the care that the prisoners needed.

Scheduling of health staff

Another concern was the scheduling of nurses who provided care in the infirmaries. From the narratives, the nurses were only available for the day shift, which left the infirmary unmanned during the most times of the day. One participant said:

> *Mr. 9: I have realized we have about two nurses on board, both of them come in the morning and close around 2:00 pm. After that time in the afternoon if you are sick and need medical attention, hmmm… and when it happens in the night… unless you go tell the officers to call them [nurses] to come and attend to you. (FG 1- Male prison)*

[2] Ghana Cedis to USA Dollar conversion as at 03/10/2023.

Theme 3: access to essential medicines & technology

The study explored the availability of important medicines and technology within the prisons to enhance health service delivery. Two main sub-themes emerged from the analysis: Unavailability of drugs in Infirmary and Lack of logistics.

Unavailability of drugs in infirmary

The participants shared their awareness of unavailability of medication in the prison. Across the discussion groups, several participants shared their experiences of not obtaining drugs prescribed after accessing healthcare at the infirmary.

> *Mr. 6: So, the common sicknesses that we are even confronted with e.g., malaria, the drugs are not available so looking at disease like HIV, whatever is supposed to provide for HIV drugs I'm sure even at other places there is no existence. (FG 1- Male prison)*
> *Mr. 6: They don't have drugs for you here [prison infirmary] unless they take you to the hospital for you to take your drugs. (FG 3- Male prison)*

Due to the unavailability of drugs at the prison infirmary, some participants indicated out of pocket payment to acquire the drugs.

> *Ms. 3: I withdrew about two hundred cedis and used it to buy the medicine at the reception. (FG 4- Female prison)*
> *Ms. 5: Sometimes, you go there and you have to buy your own medicines, and some of us are not privileged to have that money for buying the medicines. So, they [officers] will go to your account and take your money and maybe it is the only money you have for feeding. (FG 4- Female prison)*

To the credit of the officers, some participants indicated that some officers personally bought drugs for incarcerated individuals who could not afford it.

> *Mr. 9: Sometimes they [prison officers] use their own money to buy food and drugs for some incarcerated individuals. (FG 1- Male prison)*

Lack of logistics

Further to this, the participants also reiterated the unavailability of equipment such as testing kits, and laboratory equipment at the infirmary, which they felt hampered the provision of quality care to incarcerated individuals.

> *Mr. 1: We don't have lab facility here, no lab equipment to conduct lab tests for us, they don't have it. (FG 3- Male prison)*
> *Ms. 11: If they [benevolent people] can buy machine or testing kits, it would help. (FG 4- Female prison)*

The participants also indicated the unavailability of an ambulance to convey incarcerated individuals to the hospital and the challenges its poses. An excerpt reads:

> *Mr. 1: We don't have any single car. In case of any emergency we would have to carry the sick person to the roadside before we pick a taxi to the hospital. (FG 3- Male prison)*

Theme 4: leadership: regulating healthcare services

Participants shared their opinions on the policies and regulations that impacted the delivery of health services in the prisons. Two main sub-themes emerged: feeling abandoned by government and the hurdles of bureaucracy.

The hurdles of bureaucracy

Some participants indicated that the bureaucracies of the prison services sometimes affect health care. The protocols for referral or transfer of incarcerated individuals to public hospitals in cases of emergencies were cited for creating delays and stifling access to health care.

> *Mr. 6: Their [officers] main priority is security... Sometimes somebody [inmate] may be sick around 1:00 am and you have to take him to [public hospital] around that time and the main door is locked. They [officers] have to call somebody outside to come and open [the main gate] before you can be taken. Sometimes, you have to call the 2IC [second-in-command] and at that time he is sleeping. ... I don't think he will come and attend to you immediately. (FG 2- Male prison)*
> *Mr. 4: When it [ill health] happens in the night, as my brother said the bureaucracy alone... because you have to report to another higher authority before an order will be given. When you are even taken out of this place you can even die on the road. (FG 1- Male prison)*

Feeling abandoned by government

The narratives revealed that the participants felt neglected by the government in relation to meeting their health care needs. One participant said:

> *Mr. 3: My problem is that the government and the stakeholders should bear in mind that we those in prison too are also part of the system [country]...*

Concerning our health, we are being neglected. (FG 2- Male prison)

There were generalised calls for the government to support and oversee the equipping of the health system within prisons.

Ms.4: There is a common saying that 'the government hasn't brought any money; if money was there, they will run and buy it [logistics] but if there is no money that what can they do about it. So, when it happens like that it is a huge struggle and thinking, it's a lot of frustration. (FG 4- Female prison)
Ms. 6: Now I am a government property; I am a convict. ... If I should fall sick, it is [the president] who is supposed to take care of my bills. The medicine is not there… I am pleading that the government should do something. (FG 4- Female prison)
Ms. 1: We will plead that the government gives us a vehicle for such emergencies. (FG 5- Female prison)

Discussion

Our study explored incarcerated individuals' perspectives and opinions on the general healthcare services in Ghanaian prisons using four key constructs of the WHO framework for health systems: service delivery, health workforce, access to essential medicines and technology, and leadership and guidance. In relation to *Health Service delivery*, this study found that although a few participants had a different opinion, majority rated health services in Ghanaian prisons as below average and not comparable to healthcare provided to the general population. Similarly, a study in Poland (Rogalska et al., 2022) indicated bad ratings for prison health services. Contrary to this finding are reports from Australia (Capon et al., 2020) and Thailand (Rungreangkulkij et al., 2021) where prisoners believed the quality of healthcare in prisons was comparable to that received outside the prisons.

The below average ratings recorded in this study were usually based on the incarcerated individuals' experiences while receiving health services from public health facilities outside prisons. The Revised Standard Minimum Rules for the Treatment of Prisoners also known as the Nelson Mandela Rules, item 24.1 indicates that prison incarcerated individuals must receive the same standards of healthcare that are available to the general population (UNODC, 2015). Consequently, this finding is an indication that much more effort must be made by the state to improve the quality of health care in prisons as well as the experiences of prisoners while accessing it.

Findings on the incarcerated individuals' perception of the health workforce in Ghanaian prisons revealed that the prisons infirmaries were manned by professionally trained nurses. This observation is in line with the requirements of the Nelson Mandela Rules, item 25.2, which recommended that only qualified health professionals should provide health care in prisons. The study, however, found that there were no doctors stationed in the prison infirmaries, except for one prison hospital, which had one resident doctor. This may be because in Ghana, healthcare facilities in most prisons are placed at the level of Health Centres in the Primary Health Care structure of the Ghana Health Service (Anane-Amponsah, 2021). This level is considered the first point of contact within the formal healthcare delivery system and does not require the presence of full-time doctors (Armah and Kicha, 2020). It is, therefore, not out of place that nurses were reported as prescribers in prison infirmaries. Ghana, like many other lower- and middle- income countries, has adopted a task shifting policy in health service delivery (Gyamfi et al., 2017, 2020). It is noteworthy that, although this strategy has reportedly proven effective and may not undermine the quality of health service delivery (Ogedegbe et al., 2018), it adversely affects inmates' perception of the quality of service. Consequently, awareness on the expertise, experience and competences of the nurses offering care in prisons should be created among inmates.

This study found that with respect to *access to essential medicines and technology*, the prisoners reported lack of basic equipment and essential medications in the infirmary for common endemic conditions such as malaria. This finding corroborates a previous study among health providers in a Ghanaian prison that found lack of access to essential medical supplies and drugs as a major constraint to healthcare delivery in prisons (Baffoe-Bonnie et al., 2019). This is unfortunate, as prisoners in Ghana are registered under the National Health Insurance Scheme (NHIS, 2015), which covers essential medications including those dispensed to patients in prisons (Agbanyo, 2020). The unavailability of drugs may be a result of reported delays in the payment of NHIS claims (Sodzi-Tettey et al., 2012), which invariably affects stocking of dispensaries with essential drugs (Azaare et al., 2020). It is, therefore, important to investigate the factors impacting the absence of these essential equipment and medications to improve prison health service delivery.

On the issue of *leadership and governance* of prison health services, the study found that the bureaucratic processes required to access care outside of the prison when the need arose negatively affected incarcerated individuals' perceptions of quality of health care. Solomon et al. (2014) also reported similar bottlenecks affecting access to quality health care in Nigerian

prisons. These bottlenecks were attributed to the security required to maintain the prisons. Thus, several persons had to be consulted to seek approval before a client could leave the confines of the prison when emergency care was required. Capon et al. (2020) also agreed with this assertion and indicated that the security classification and gatekeeping policies of prisons were barriers to accessing healthcare.

Strengths and limitations of the study

One of the strengths of this study is the use of FGDs as a technique for data collection that allowed for generating rich data from a larger group of incarcerated individuals within the confines of the prisons and the restrictions presented by the setting of the study. The technique, however, presents the possibility of social desirability bias, which could not be discounted, as the ideas shared in the group could have been influenced by the presence of others. The moderators of the sessions, however, rephrased responses to inure to more in-depth clarification and discussions.

Conclusion

Generally, incarcerated individuals perceived that the quality of health services provided in prisons was inferior to that provided to the general population. Several of the incarcerated individuals felt abandoned by the state. Steps must, therefore, be taken to improve the health services delivered to incarcerated individuals in Ghanaian prisons. Addressing the challenges including unavailability of essential drugs and equipment, improving the staff strength of the prison health workforce as well as addressing bottlenecks in accessing urgent care will enhance the quality of care given and experienced by incarcerated individuals.

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Authors' contributions
All authors have read and approved the final manuscript. SAA, DOY, FA, KKO, BOT, FD, RAG and AA designed the research. DOY, OC, BOT, and FD were involved in data collection. SAA. FA, DFA, BKA and DOY analysed the data and drafted the manuscript. All co-authors revised the manuscript for intellectual content and approved the final version for submission.

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Data Availability
All the data have been used and presented in this manuscript. Any additional information needed can be obtained from the corresponding author upon a reasonable request.

Declarations

Ethics approval and consent to participate
The study protocol was approved by the Ghana Health Service Ethical Committee (GHS-ERC: 011/09/22) and permission to conduct the study was obtained from the relevant authorities and study facilities. The study was conducted in accordance with the Declaration of Helsinki on research involving human participants. Oral and written informed consent was obtained from all participants. Participation was completely voluntary, and questions were constructed to be respectful and clear to participants. In respect of prison protocol, sociodemographic characteristics were not collected from participants, however, each interview was assigned an identity number to allow for study purposes.

Consent for publication
Not applicable.

Competing interests
The authors declare that they have no competing interests.

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