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Demand and supply side barriers and opportunities to enhance access to healthcare for urban poor populations in Kenya: a qualitative study

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Title: **Demand and supply side barriers and opportunities to enhance access to healthcare for urban poor populations in Kenya: a qualitative study**

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Abstract (298)

Objective: To explore the current barriers and recommendations to improve access to quality healthcare for the urban poor

Design and participants: Qualitative approach. In-depth interviews (n=12) and focus group discussions with community members (n=12) and Key informant interviews with health providers and policymakers (n= 25) were conducted between August 2019 and September 2020. Four feedback and validation workshops were held December 2019 and April-June 2021.

Setting: Korogocho and Viwandani urban slums in Nairobi, Kenya.

Results: The socioeconomic status of individuals and their families such as poverty and lack of health insurance interact with community factors like poor infrastructure, limited availability of health facilities and insecurity; and health system factors such as limited facility opening hours and health providers' attitudes and skills and limited public health resources to limit healthcare access and perpetuate health inequities. Limited involvement in policy formulation processes by service providers and other key stakeholders was identified as a major challenge with significant implications on how limited health system resources are managed.

Conclusion: Despite many targeted interventions to improve the health and wellbeing of the urban poor, slum residents are still unable to obtain quality healthcare because of persistent and new barriers due to the Covid-19 pandemic. In a devolved health system, paying attention to health managers' abilities to assess and respond to population health needs is necessary. In addition, the barriers reported as regards the limited use of existing accountability mechanisms need further attention to ensure that the mechanisms work for the greater good of the urban slum residents. The identified challenges reinforce the need to understand and respond to social determinants of health. Multi-sectoral strategies are needed to address individual, community and system-level barriers to quality healthcare in this and related settings to ensure health access for all.

Keywords: Healthcare, Access, Slums, Covid-19, Nairobi

Article Summary

Strengths and limitations of this study

- This study is an analysis of the current barriers to healthcare access in urban boor settings.
- In spite of decades of targeted investments to improve the health and wellbeing of the urban poor many barriers persist and the Covid-19 pandemic has increased existing inequities.
- Users and providers' perspectives on barriers in the study contexts is limited; addressing barriers requires both demand and supply side responses.
- The focus on the urban poor settings means that the perspectives are applicable to the study context and similar settings

Introduction (4192)

In low- and middle income countries, common barriers to accessing quality healthcare include geographical access, availability, affordability, and acceptability of services among others (1-3). These barriers, especially those that limit access to affordable and quality health services, result in high levels of health inequities in these countries, and are thus major drivers of poor health outcomes and a significant challenge to health systems. The ongoing Covid-19 pandemic has exacerbated existing health inequalities (4, 5). If these countries are to 'build back better' and get their health systems goals back on track, renewed commitments to reduce health inequalities especially for vulnerable populations are necessary.

Kenya has invested in several initiatives to reduce health inequalities and improve access to adequate care for its population (7, 8). Furthermore, the Government of Kenya has identified UHC as one of its pillars of investments in order to reduce health inequities. However, these initiatives rarely benefit the urban poor who make up over two thirds of the Kenya's growing urban population (9, 10). In spite of their physical proximity to the central government and public and private services, slum areas are disadvantaged and expose residents to health, social and financial vulnerabilities (11). Past research has shown that many slum residents of Nairobi, Kenya's capital, experience poor health outcomes including higher maternal and child morbidity and mortality compared to other urban and rural areas (10, 11).

Based on this evidence, the Government of Kenya and its partners made critical investments such as the Slum Upgrading Programme (12), the Reproductive Health Voucher (RH-OBA) (13) to respond to the needs of the urban poor. The RH-OBA and Free Maternity care policy showed an increase in facility-based deliveries in public hospitals and highlighted the impact of cost as a barrier to healthcare utilisation, particularly by women (14-16). However, audits of these programmes identify many persistent challenges. For example, a review of the Reproductive Health voucher programme in two slums revealed that 22% of the intended beneficiaries did not use the vouchers (14). Similarly, recently data on the Free Maternity Care programme showed that many disadvantaged groups are not benefitting from the services (17). Some of the challenges are related to the way the programmes are implemented while others are ingrained in wider societal and health system structures (18, 19). Solutions, which enhance access to care, should be informed by an in-depth understanding of the barriers to access, as these are often context specific and keep evolving.

As Kenya makes more investments towards UHC, it is important to understand and document current, and if any, persistent barriers to access to quality healthcare by the most disadvantaged population groups such urban slum residents in order to identify measures to redress the inequities. Such an assessment needs to go beyond the current limitations by many studies on barriers to healthcare access that in this setting that tend to focus on healthcare users in their analyses (20, 21), to include both demand and supply side responses (1, 22). Taking the unique context of urban slums in Kenya, this study explores persistent and current demand and supply-side barriers to optimum delivery and access to quality healthcare and identifies opportunities that can be harnessed to reduce these barriers for better health and wellbeing of two urban slum communities in Nairobi, Kenya. The study draws on data collected as part of a multi-country study to assess current healthcare services in seven informal settlements in Africa and Asia in a bid to identify viable service delivery models relevant to the slum setting (23).

With due consideration for the unique context of slums in Kenya (as elsewhere), this study utilised the Andersen Behavioural Model (ABM) to conceptualise the barriers to access to healthcare (24, 25). The model describes predisposing, enabling and need factors that interact to influence people's decisions to utilise health care services. Predisposing factors are pre-existing socio-cultural characteristics of an individual, enabling factors serve as a means to accessing care while the need factors refer to the immediate reason why health care is sought. The ABM has undergone several iterations as presented by Andersen that modifications could be made to fit different purposes, without distorting the original framework.

Methods

Design and participants

The study used a qualitative approach. Healthcare users, providers and policy actors were purposively selected. Data were collected through 12 Focus Group Discussions (FGDs) and 12 In-depth Interviews (IDIs) with healthcare users representing persons living with disabilities (PLWD), younger (18-24 years old) and older (25+) women and men and 25 Key Informant Interviews (KIIs) with healthcare providers (formal and informal), chemists and policy actors. The FGDs and IDIs were conducted in-person to seek perspectives from healthcare users on provision of healthcare services in the community (*Table 1*). While KIIs were conducted (*Table 2*) remotely via telephone interviews (*Table 2*).

Setting

The study was conducted in two urban slums; Korogocho and Viwandani, in Nairobi County, the capital city of Kenya. They are located 7 to 12 kilometres away from the Nairobi Central Business District (CBD) and about 7 kilometres away from each other. Viwandani has an ethnically diverse and migrant population mostly seeking economic opportunities in the surrounding industries, whereas Korogocho has a more settled population that have lived there over several generations (26).

Data collection procedures

Six research assistants collected data in August 2019 and four research assistants collected data in September 2020. All research assistants had prior experience in conducting qualitative interviews, familiarity with the slum communities, and fluency in English and Kiswahili. The research assistants had no prior interactions with participants. The FGDs and IDIs were conducted prior to the Covid-19 pandemic period in a central location within the community that was convenient for all the participants. The selected locations also ensured privacy and minimum disruptions. Data collection procedures for KII participants were adapted to include remote telephone interviews during the Covid-19 period. Participants were contacted a few days prior to the interviews to select a date and time that was most convenient for them to participate in the interviews. Participants were also briefed and encouraged to position themselves in a place that ensured privacy and minimal disruptions. Interviews were conducted using a structured study guide and the duration of the interviews was between 30 to 60 minutes for IDIs and KIIs, and up to 90 minutes for FGDs. The FGDs consisted of eight to ten participants. All interviews were audio-recorded and complemented by hand written notes.

Data management and analysis

We utilised the Andersen Behavioural Model (ABM) (24, 25). Audio-recorded files were transcribed verbatim and translated into English (FGDs and IDIs). NVivo software (QRS International 2018) was used to code the data. The data were analysed using content analysis method through the stages suggested by Graneheim and Lundman (2004) (27). We applied a deductive component informed by the ABM and an inductive one allowing for identification of new themes from the data (28). The ABM provided the main and guiding framework of analysis enabling us to code and sort the data as well as identify the categories; predisposing, enabling and need factors driving the barriers to access to quality healthcare services in the urban slums. Because the ABM is flexible we were able to add factors that are specific to the

slum context as a new level of vulnerability while the inductive approach identified recommendations to improve access to quality healthcare. Two researchers identified themes from the coded data. Two other researchers independently reviewed the themes. All the authors agreed on the themes. Additional recommendations were identified during participatory workshops in December 2019, April and June 2021 convened by the research teams and attended by community representatives, health providers and policymakers. Data saturation was achieved during analysis.

Ethical considerations

Permission to conduct the study was obtained from Amref-Health Ethics and Scientific Review Committee (ESRC) under protocol number AMREF-ESRC P440/2018 and the National Commission for Science Technology and Innovation (NACOSTI). Additional clearance was obtained from Amref-ESRC to conduct telephone interviews following declaration of the Covid-19 pandemic and its restrictions in the country. Study participants gave written or verbal audio-recorded informed consent.

Results

Participants

The total number of participants for FGDs and IDIs were 127 (66 females and 61 males) for both Korogocho and Viwandani (*Table* 1). About half the participants had always lived in the slums. On average, the key informant participants had served in the communities for 11 years (*Table* 2). The majority of the healthcare providers had attained tertiary education while for alternative care givers, many had only attained primary level education.

Table 1: Focus Group Discussion/In-depth Interview Participant Characteristics

Site	Average age	Sex		Always lived (born) in the area	Needed healthcare in the month prior to the interview	Received healthcare in the 6 months prior to the interview
		Female	Male			
Korogocho	28	37	34	34	107	64
Viwandani	29	29	27	19	40	38
		66	**61**	**53**	**147**	**102**

Total		**127**	

Table 2: Key Informant Participant Characteristics

Category	Highest level of education	Occupational Background	Years served in this capacity	Years worked in the community
Healthcare providers (public/private sector) (n=4)	Tertiary	Clinical, Nursing Public Health	3-14 years	3-7 years
Chemists/pharmacist (n=8)	Tertiary	Nursing, pharmaceutical (pharmtech/pharmacist)	5-15 years	5-15 years
Alternative/informal care providers (n=8)	Secondary (only 1) the rest had primary	Traditional healers, faith healers, herbalists	18-40 years	16-30 years
Policy actors (n=5)		Clinical, psychology, community development, medical	8-17 years	0.5-15 years

Barriers factors identified are grouped according to the thematic areas in the ABM and are described. Anonymous quotes are included to support the findings in the sections below:

Predisposing factors

a. Cultural norms

Health seeking behaviours and beliefs informed by the cultural norms of some of the community members were identified as a barrier to timely access to healthcare

‘‘*The late medical seeking behaviours and some people from certain cultures that believe in witchcraft are challenging. They wait and do other things until the last moment when they come to us to seek medical services’’.* **KII Healthcare Provider (Female) Viwandani**

b. Religious beliefs

Membership in some religious groups were flagged as deterrents to seeking services from formal medical sources. In spite of the health promotion and sensitisation activities conducted by community health volunteers and availability of free maternity health services, some of the community members are not willing to take up any of the services driven by their religious beliefs.

''*There was one incident that happened recently. There was a sick child who died because their religion does not allow them to go to hospital. They thought that when a child is prayed for they would heal''.* **R2 FGD Healthcare user (18-24) Viwandani**

Enabling Factors

a. Individual level

Poverty and unaffordable healthcare

Limited financial resources and the relatively high cost of care were highlighted as challenges given that most community members earn very little money from their workplaces.

''*It's no easy. People struggle to get that money when they are sick. Most people do casual jobs or go to the industrial area to look for menial jobs. So the money in informal settlements is limited, people cannot afford so many things''.* **KII Policy actor (Female) Viwandani**

Many residents do not have health insurance and/or are unable to make payments to cover their premiums due to poverty. As a result, they have to make out of pocket payments when they need to access healthcare services.

''*You see to pay for those services people pay out of their pockets because most people in this area don't have NHIF. Some people use NHIF but in this area most people don't have it so they have to use the money which they have got in order to be served''.* **R3 FGD healthcare user Men (18-24) Korogocho**

'*Sometimes our clients especially those who come with emergency cases usually fail to pay and then we just have to let them go because there is nothing much we can do about it so in a way its reducing our income'.* **KII Healthcare Provider Korogocho**

b. Interpersonal level

Attitudes and skills of healthcare workers

Poor attitudes and skills of healthcare workers were reported as impediments to access to quality healthcare by residents in both slums.

I want also to say that not all of them treat people with respect and if they don't know how to handle people with disability I am requesting the government to give them time to be trained on how they should handle PLWD. **R3 FGD PLWD (Female) Viwandani**

c. Organizational level

Services available

Although a number of health facilities are available, many are only able to provide basic health services. In many instances, residents have to be referred to facilities outside the slums for laboratory, imaging and specialist services.

'*The services we lack in this area of Korogocho and particularly at the public health facility are X-ray and laboratory services. It is very important to have a lab because for a doctor to know what a patient is suffering from they must go to a lab. So we have experienced health workers but there are no tools. They should also stock drugs'*. **R9 FGD Men (25+) Korogocho**

'*We offer medicine for free, the only challenge comes when we want to get lab tests. The lab tests are a challenge because we don't have a lab within so we send our patients to Kenyatta hospital so that they can be tested. We get the result after so this requires patients to come back for diagnosis, something that can take hours or days'*. **KII Policy actor (Male) Korogocho**

Availability of health workers

The limited availability of healthcare workers is a major concern especially in the public health facilities. Due to the limited numbers of health workers, patients spend a lot of time in the facilities. As a result, some opt to consult and buy drugs from chemists in the slums.

'*As a facility the challenge we face is mostly the human resource. Sometimes we are overwhelmed when giving the services'*. **KII Healthcare Provider (Female) Korogocho**

'We have been having shortages of human resource, so most of time you would find that patient would access quality services the challenges would be in long queues so someone would come to the health facility and spend half the day before they actually get the service. You should also imagine that if we have one clinician who works 8 am to 5 pm and is going

to see 120 patients; by the time they are seeing their 50th patient, the quality might not be the as the same as the first 10 patients that this clinician served'. **KII Policy actor (Female) Viwandani**

'You can go to that hospital and queue for a long time' **R1 FGD Women (25+) Korogocho**

Operating hours of health care facilities

Operating hours of facilities coupled with the limited number of public facilities were identified as barriers to regular access to care. The hours do not favour people who work during the day. Each of the slums has one public health facility.

'Let say in public hospitals they operate from 8 AM to 4 or 5 PM but during the weekends they are not available. They close so you will have to go to private since they open every day' **R7 FGD Men (25+) Viwandani**

'So let us say private facilities are okay because they operate twenty four hours but the public hospitals close at 4 PM while on weekends they don't open. They operate from Monday to Friday' **R1 FGD Men (25+) Viwandani**

d. Community level

Poor infrastructure, insecurity and environmental hazards

The hazardous environment in the slums was highlighted as a challenge to accessing healthcare. Poor roads, insecurity and inadequate water and sanitation facilities are major concerns limiting access to care and exposing others to infections.

'*The roads are in bad state when it is raining. The other challenge is that the way houses are structured in this area are congested even sometimes it is very hard for ambulance to access when you have a patient who is severely sick'* **R3 FGD Men (25+) Korogocho**

'*The challenges we face when we are sick and need to go to hospital…you have to pass through those drainages and also at the same time you are afraid of thieves because the security is not good'* **R9 FGD Men PLWD Viwandani**

e. Policy level

Inadequate financial resources

Low budget allocations and erratic reimbursement of NHIF from the government is a barrier to health planning and service delivery.

'*We have the health service fund that comes through the county that is one of our main funding and then the grants that come in from donors or through the government as well and the NHIF reimbursement that is usually given to those facilities that are NHIF accredited. But to be honest the funds have not been quite adequate. Also we have been having challenges with NHIF reimbursements. They delay, so you find like now there are some facilities that have not been paid for many months and they have been offering these services so they are really struggling to see how to continue offering services'*. **KII Policy actor (Female) Viwandani**

Limited involvement in decision making and political interference

The limited involvement of policy actors in decisions that directly affect the communities that they serve is a critical challenge affecting health service delivery.

'*Of course sometimes what you would really want is not what comes on the ground. Sometimes you can prioritise something, maybe finish up a block and then due to political interference you find that some other work started alongside, yet those funds would have gone to a more prioritized initiative'*. **KII Policy actor (Male) Korogocho**

'*Some of the decisions take long while we are not involved in other decisions, and when we make decisions you find that whatever you have decided on has not been acted upon.*' **KII Policy actor (Male) Viwandani**

Accountability mechanisms

Mechanisms to enable community members and health providers to contribute to decisions that are related to their healthcare such as suggestion boxes, health facility committees and other stakeholder forums exist. However, these are not adequately utilised. This was highlighted by community members during the feedback sessions and confirmed by policymakers.

'*We have barazas (community meetings) during which we share our experiences and suggestions on health and other matters like security. But what we say does not matter. Those private facilities are personal businesses. You cannot tell them what to do*.' **Male, FGD (Feedback workshop) Viwandani**

'*The public is willing to give information but what we have noticed is that they give information and it's not acted on. When you call them again, they tell you that you are*

wasting our time as we gave you suggestions which have not been implemented.' **KII Policy actor (Female) Viwandani**

'*The contributions we make take a long time because they involve so many people after the meeting. When we attend the meetings we have different stakeholders whom those who are chairing the meeting need to discuss with about what have been shared by the participants. That is the part that will take time before concrete decisions are reached'.* **KII Policy actor (Male) Korogocho**

Need factors

Community members related that the main reasons for seeking primary healthcare were respiratory conditions, injuries and care for pregnant women and children. This was confirmed by the health providers who also added that chronic health conditions were reasons for seeking care by slum residents.

'*The common illnesses in Korogocho are diarrhoeal diseases, such as cholera and the rest. We also have cases of pneumonia and other respiratory tract infections because of the dump site that is just close to the hospital'.* **KII Healthcare Provider (Female) Korogocho**

'*The common illnesses are diarrhoea, pneumonia, accidents, and we have TB nowadays. The others one are diabetes and hypertension'.* **KII Healthcare Provider (Male) Viwandani**

The Covid-19 pandemic

Following the declaration of the global pandemic and the national restrictions to curb the spread of the disease that followed, the challenges above were heightened (4, 29). In addition to reduced access to care as a result of fear and curfews, community members lost means of livelihood making it harder for them to pay for healthcare directly or keep up to date with their health insurance premiums. Furthermore policy actors reported that the supply of essential medicines was disrupted and available resources reallocated to respond to the pandemic crisis.

'*We have had to do a balance here and there especially since the Covid-19 pandemic started. We didn't have a budget allocated for it so we really had to pool the resources to procure extra masks, gloves, sanitizers; things that were not required in large numbers before. So that affected our finances*.' **KII Policy actor (Female), Viwandani**

Recommendations to reduce healthcare access barriers

Several suggestions were made to address the barriers and improve health service utilisation. Recommendations included community, provider and system-level responses.

At community level calls for financial and risk protection including access to affordable health insurance and more economic opportunities as well as health education to improving health-seeking were made.

For health services to be better government should consider reducing the amount of money people pay for the NHIF card so that everybody can be able to afford to pay. There are those people who are not employed and they need that card but because they have low income they can't afford to get it. **R3 FGD PLWD Korogocho**

Provider level suggestions included increasing the number of public health facilities, the variety of health services and health workers' numbers and their skills, equipping facilities with necessary equipment and regular drug supplies, among others.

For us to have better health services a hospital should be constructed near us. The hospital should have enough drug stocks of drugs, have qualified nurses and doctors and operate twenty four hours because a person can get sick anytime. **R8 FGD PLWD Viwandani**

While system level suggestions included regulating the health providers' work with more regular quality checks, more funding for health initiatives and better and effective decision-making processes.

'I think building the policies from bottom-up would also be important rather than a top down kind of an approach. Because we have some policies which have been cascaded from up and implementing is challenging. The devising of these policies and involvement from bottom-up would be important'. **KII Policy actor (Male) Korogocho**

Discussion

We explored current barriers to access to quality healthcare in two urban slums, highlighting several challenges that urban slum residents encounter in their pursuit of quality healthcare. We identified the predisposing, enabling, and need factors that together negatively impact the way residents of urban slums access healthcare. In addition, existing barriers were heightened by the Covid-19 pandemic. The socioeconomic status of individuals and their families such as poverty and lack of health insurance interact with community factors like poor infrastructure, limited availability of health facilities and insecurity and health system factors

such as limited facility opening hours and health providers' attitudes and skills and limited public health resources to limit healthcare access in this setting and perpetuate health inequities.

Previous studies in the slums and other underserved areas in Kenya have identified similar barriers at individual and community levels (20, 21, 30). In our study, context specific barriers to quality healthcare in the slums included heightened insecurity, poor infrastructure and poor sanitation and hygiene. These are in line with findings by other studies done in slum settings (10, 11). In the 2000 (10) and 2012 (11) Nairobi Cross-Sectional Surveys the hazardous environment in the slums characterised by the near absence of the public sector, limited access to healthcare and water and sanitation services, among others. As such, these challenges persist in spite of two decades of targeted investments in initiatives to reduce inequalities in the slums.

An important challenge to tackling the barriers to access to quality healthcare in our context is related to policy formulation and key stakeholder engagement in that process. Service providers and other key stakeholders reported about their inability to respond to the needs of the communities as most of the decisions about caregiving and services were made higher up, with significant implications on how limited health system resources are managed. It appears that devolution of health services through the 2010 constitution has not resulted in the much needed empowering reforms at subnational level or translated into effective care delivery for the most vulnerable, who are also the majority. Thus, bureaucracy and ineffective accountability mechanisms persist and continues to entrench health inequalities that devolving health was to help resolve (31, 32). In a devolved health system, paying attention to health managers' abilities to assess population health needs and respond to them is necessary. In addition, the barriers reported as regards the limited use of existing accountability mechanisms need further attention to ensure that the mechanisms work for the greater good of the urban slum residents. For example, a recent systematic review demonstrated that inadequate human resources for health and limited funding of county health initiatives is a persistent barrier dating from the pre-devolution era (32).

The identified challenges reinforce the need to understand and respond to social determinants of health. As such, innovations to respond to existing health inequities need to be multi-sectoral in nature. This is also in line with the recommendations made by study participants to address existing gaps. Multi-sectoral strategies are needed to address individual, community

and system-level barriers to quality healthcare in this and related settings to ensure health access for all.

Limitations

The nature of the study resulted in information from this setting and based on perspectives thus might not necessarily be applicable in other settings. Interviews conducted in Kiswahili- loss of meaning during translation. However, we triangulated information from different sources (FGDs, IDIs, and KIIs) and sought feedback from different stakeholders who validated the results. Furthermore, similar results have been demonstrated in other low resource settings.

Conclusion

In spite of many targeted interventions to improve the health and wellbeing of the urban poor, many slum residents are still unable to receive quality healthcare because of persistent and new barriers due to the Covid-19 pandemic. Multi-sectoral innovations are needed to reduce existing service delivery gaps.

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Author Contributions

PB conceptualised and designed the study, contributed to the analysis and interpretation of the data and drafted the manuscript. LK and PK contributed to the design of the study, coordinated the data collection, analysis and edited the manuscript. MA contributed to the analysis and interpretation of the data, and reviewed drafts of the manuscript. CK and CKy contributed to the design of the study and reviewed drafts of the manuscript. All authors read and approved the final manuscript.

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Standards for Reporting Qualitative Research (SRQR)*

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	Page/line no(s).
Title and abstract	
Title - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	1/1-2
Abstract - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions	2/21-48
Introduction	
Problem formulation - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	4-6/60-111
Purpose or research question - Purpose of the study and specific objectives or questions	5/91-103
Methods	
Qualitative approach and research paradigm - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**	5/114-121
Researcher characteristics and reflexivity - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	6/134
Context - Setting/site and salient contextual factors; rationale**	6/123-129
Sampling strategy - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**	5/114-121 & 7/162
Ethical issues pertaining to human subjects - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	7/163-169
Data collection methods - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**	6/130-145

Data collection instruments and technologies - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	6/141-145
Units of study - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	7-8/171-179
Data processing - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	6/147-148
Data analysis - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	6-7/147-162
Techniques to enhance trustworthiness - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**	7/157-161

Results/findings

Synthesis and interpretation - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	7-14/170-359
Links to empirical data - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	7-14/170-359

Discussion

Integration with prior work, implications, transferability, and contribution(s) to the field - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	14-16/360-413
Limitations - Trustworthiness and limitations of findings	16/402-407

Other

Conflicts of interest - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	17/443
Funding - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	187/444-448

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

Reference:

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Title: **Demand and supply side barriers and opportunities to enhance access to healthcare for urban poor populations in Kenya: a qualitative study**

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Abstract (298)

Objective: To explore the current barriers and recommendations to improve access to quality healthcare for the urban poor

Design and participants: Qualitative approach. In-depth interviews (n=12) and focus group discussions with community members (n=12) and Key informant interviews with health providers and policymakers (n= 25) were conducted between August 2019 and September 2020. Four feedback and validation workshops were held December 2019 and April-June 2021.

Setting: Korogocho and Viwandani urban slums in Nairobi, Kenya.

Results: The socioeconomic status of individuals and their families such as poverty and lack of health insurance interact with community factors like poor infrastructure, limited availability of health facilities and insecurity; and health system factors such as limited facility opening hours and health providers' attitudes and skills and limited public health resources to limit healthcare access and perpetuate health inequities. Limited involvement in policy formulation processes by service providers and other key stakeholders was identified as a major challenge with significant implications on how limited health system resources are managed.

Conclusion: Despite many targeted interventions to improve the health and wellbeing of the urban poor, slum residents are still unable to obtain quality healthcare because of persistent and new barriers due to the Covid-19 pandemic. In a devolved health system, paying attention to health managers' abilities to assess and respond to population health needs is necessary. In addition, the barriers reported as regards the limited use of existing accountability mechanisms need further attention to ensure that the mechanisms work for the greater good of the urban slum residents. The identified challenges reinforce the need to understand and respond to social determinants of health. Multi-sectoral strategies are needed to address individual, community and system-level barriers to quality healthcare in this and related settings to ensure health access for all.

Keywords: Healthcare, Access, Slums, Covid-19, Nairobi

Article Summary

Strengths and limitations of this study

- The study triangulated information from different sources (FGDs, IDIs, and KIIs) to heighten the validity of the results.
- The study involved a series of participatory workshops that sought feedback from different stakeholders who validated the findings.
- Most of the themes mentioned by the participants correspond very well with those found in literature.
- The study was conducted in urban informal settlements thus study findings cannot be extrapolated to other settings.

Introduction (4650)

In low- and middle income countries, common barriers to accessing quality healthcare include geographical access, availability, affordability, and acceptability of services among others (1-3). These barriers, especially those that limit access to affordable and quality health services, result in high levels of health inequities in these countries, and are thus major drivers of poor health outcomes and a significant challenge to health systems. The ongoing Covid-19 pandemic has exacerbated existing health inequalities (4, 5). If these countries are to 'build back better' and get their health systems goals back on track, renewed commitments to reduce health inequalities especially for vulnerable populations are necessary.

Kenya has invested in several initiatives to reduce health inequalities and improve access to adequate care for its population(6, 7). Furthermore, the Government of Kenya has identified UHC as one of its pillars of investments in order to reduce health inequities. However, these initiatives rarely benefit the urban poor who make up over two thirds of the Kenya's growing urban population (8, 9). In spite of their physical proximity to the central government and public and private services, slum areas are disadvantaged and expose residents to health, social and financial vulnerabilities (10). Past research has shown that many slum residents of Nairobi, Kenya's capital, experience poor health outcomes including higher maternal and child morbidity and mortality compared to other urban and rural areas (9, 10).

Based on this evidence, the Government of Kenya and its partners made critical investments such as the Slum Upgrading Programme (11), the Reproductive Health Voucher (RH-OBA) (12) to respond to the needs of the urban poor. The RH-OBA and Free Maternity care policy showed an increase in facility-based deliveries in public hospitals and highlighted the impact of cost as a barrier to healthcare utilisation, particularly by women (13-15). However, audits of these programmes identify many persistent challenges. For example, a review of the Reproductive Health voucher programme in two slums revealed that 22% of the intended beneficiaries did not use the vouchers (13). Similarly, recently data on the Free Maternity Care programme showed that many disadvantaged groups are not benefitting from the services (16). Some of the challenges are related to the way the programmes are implemented while others are ingrained in wider societal and health system structures (17, 18). Solutions, which enhance access to care, should be informed by an in-depth understanding of the barriers to access, as these are often context specific and keep evolving.

As Kenya makes more investments towards UHC, it is important to understand and document current, and if any, persistent barriers to access to quality healthcare by the most disadvantaged population groups such urban slum residents in order to identify measures to redress the inequities. Such an assessment needs to go beyond the current limitations by many studies on barriers to healthcare access that in this setting that tend to focus on healthcare users in their analyses (19, 20), to include both demand and supply side responses (1, 21). Taking the unique context of urban slums in Kenya, this study explores persistent and current demand and supply-side barriers to optimum delivery and access to quality healthcare and identifies opportunities that can be harnessed to reduce these barriers for better health and wellbeing of two urban slum communities in Nairobi, Kenya. The study draws on data collected as part of a multi-country study to assess current healthcare services in seven informal settlements in Africa and Asia in a bid to identify viable service delivery models relevant to the slum setting (22). Services explored included preventive and curative healthcare for all population groups (22).

With due consideration for the unique context of slums in Kenya (as elsewhere), this study utilised the Andersen Behavioural Model (ABM) to conceptualise the barriers to access to healthcare (23, 24). The model describes predisposing, enabling and need factors that interact to influence people's decisions to utilise health care services. Predisposing factors are pre-existing socio-cultural characteristics of an individual, enabling factors serve as a means to accessing care while the need factors refer to the immediate reason why health care is sought. The ABM has undergone several iterations as presented by Andersen that modifications could be made to fit different purposes, without distorting the original framework.

Methods

Design and participants

The study used a qualitative approach. Healthcare users, providers and policy actors were purposively selected. Data were collected through 12 Focus Group Discussions (FGDs) and 12 In-depth Interviews (IDIs) with healthcare users representing persons living with physical disabilities (PLWD), younger (18-24 years old) and older (25+) women and men and 25 Key Informant Interviews (KIIs) with healthcare providers (formal and informal), chemists and policy actors. The FGDs and IDIs were conducted in-person to seek perspectives from healthcare users on provision of healthcare services in the community (*Table 1*). While KIIs were conducted remotely via telephone interviews (*Table 2*).

Setting

The study was conducted in two urban slums; Korogocho and Viwandani, in Nairobi County, the capital city of Kenya. They are located 7 to 12 kilometres away from the Nairobi Central Business District (CBD) and about 7 kilometres away from each other. Viwandani has an ethnically diverse and migrant population mostly seeking economic opportunities in the surrounding industries, whereas Korogocho has a more settled population that have lived there over several generations (25). The slum areas in Nairobi are characterized by polluted environment, overcrowding, poor infrastructure, poor sanitation, marked absence of public sector and debilitating poverty (26-28).These conditions, which exacerbate morbidity and mortality, disproportionately affect vulnerable groups such as children and the elderly (26, 29).

Data collection procedures

Six research assistants collected data in August 2019 and four research assistants collected data in September 2020. All research assistants had prior experience in conducting qualitative interviews, familiarity with the slum communities, and fluency in English and Kiswahili. The research assistants had no prior interactions with participants. The FGDs and IDIs were conducted prior to the Covid-19 pandemic period in a central location within the community that was convenient for all the participants. The selected locations also ensured privacy and minimum disruptions. Data collection procedures for KII participants were adapted to include remote telephone interviews during the Covid-19 period. Participants were contacted a few days prior to the interviews to select a date and time that was most convenient for them to participate in the interviews. Participants were also briefed and encouraged to position themselves in a place that ensured privacy and minimal disruptions. Interviews were conducted using a structured study guide and the duration of the interviews was between 30 to 60 minutes for IDIs and KIIs, and up to 90 minutes for FGDs. The FGDs consisted of eight to ten participants. All interviews were audio-recorded and complemented by hand written notes.

Data management and analysis

We utilised the Andersen Behavioural Model (ABM) (23, 24). Audio-recorded files were transcribed verbatim and translated into English (FGDs and IDIs). NVivo software (QRS International 2018) was used to code the data. The data were analysed using content analysis method through the stages suggested by Graneheim and Lundman (2004) (30). We applied a

deductive component informed by the ABM and an inductive one allowing for identification of new themes from the data (31). The ABM provided the main and guiding framework of analysis enabling us to code and sort the data as well as identify the categories; predisposing, enabling and need factors driving the barriers to access to quality healthcare services in the urban slums. Because the ABM is flexible we were able to add factors that are specific to the slum context as a new level of vulnerability while the inductive approach identified recommendations to improve access to quality healthcare. Two researchers identified themes from the coded data. Two other researchers independently reviewed the themes. All the authors agreed on the themes. Additional recommendations were identified during participatory workshops in December 2019, April and June 2021 convened by the research teams and attended by community representatives, health providers and policymakers. Data saturation was achieved during analysis.

Ethical considerations

This study involves human participants and was approved by an Ethics Committee(s). Approval was granted by AMREF Health Africa's Ethics and Scientific Review Committee (ESRC) under protocol ID number AMREF-ESRC P440/2018. The research permit received from the National Commission for Science Technology and Innovation (NACOSTI). Additional clearance was obtained from AMREF Health Africa's ESRC to conduct telephone interviews following declaration of the Covid-19 pandemic and its restrictions in the country. Study participants gave written informed consent for interviews that were conducted face-to-face, or verbal audio-recorded informed consent for interviews conducted remotely via telephone interviews. The study did not involve animal subjects.

Patient and public Involvement

Participants were involved in the reporting and dissemination of our research. Recommendations were identified during participatory workshops in December 2019, April and June 2021 convened by the research teams and attended by community representatives, health providers and policymakers.

Results

Participants

The total number of participants for FGDs and IDIs were 127 (66 females and 61 males) for both Korogocho and Viwandani (*Table* 1). About half the participants had always lived in the

slums and majority had received some sort of healthcare service in the six month prior to the interview. On average, the key informant participants had served in the communities for 11 years (*Table* 2). The majority of the healthcare providers had attained tertiary education while for alternative care givers, many had only attained primary level education.

Table 1: Focus Group Discussion/In-depth Interview Participant Characteristics

Site	Average age	Sex		Always lived (born) in the area	Needed healthcare in the month prior to the interview	Received healthcare in the 6 months prior to the interview
		Female	**Male**			
Korogocho	28	37	34	34	62	60
Viwandani	29	29	27	19	44	42
Total		**66**	**61**	**53**	**106**	**102**
		127				

Table 2: Key Informant Participant Characteristics

Category	Highest level of education	Occupational Background	Years served in this capacity	Years worked in the community
Healthcare providers (public/private sector) (n=4)	Tertiary	Clinical, Nursing Public Health	3-14 years	3-7 years
Chemists/pharmacist (n=8)	Tertiary	Nursing, pharmaceutical (pharmtech/pharmacist)	5-15 years	5-15 years
Alternative/informal care providers (n=8)	Secondary (only 1) the rest had primary	Traditional healers, faith healers, herbalists	18-40 years	16-30 years
Policy actors (n=5)		Clinical, psychology, community development, medical	8-17 years	0.5-15 years

Barriers factors identified are grouped according to the thematic areas in the ABM and are described. As part of the analysis and reporting we identified appropriate quotes to respond to questions on what the major barriers to healthcare access are. These were obtained during the data collection exercise. We did not include quotes from the feedback sessions. Anonymous quotes are included to support the findings in the sections below:

Predisposing factors

a. Cultural norms

Health seeking behaviours and beliefs informed by the cultural norms of some of the community members were identified as a barrier to timely access to healthcare

''*The late medical seeking behaviours and some people from certain cultures that believe in witchcraft are challenging. They wait and do other things until the last moment when they come to us to seek medical services''*. **KII Healthcare Provider (Female) Viwandani**

b. Religious beliefs

Membership in some religious groups were flagged as deterrents to seeking services from formal medical sources. In spite of the health promotion and sensitisation activities conducted by community health volunteers and availability of free maternity health services, some of the community members are not willing to take up any of the services driven by their religious beliefs.

''*There was one incident that happened recently. There was a sick child who died because their religion does not allow them to go to hospital. They thought that when a child is prayed for they would heal''*. **R2 FGD Healthcare user (18-24) Viwandani**

Enabling Factors

a. Individual level

Poverty and unaffordable healthcare

Limited financial resources and the relatively high cost of care were highlighted as challenges given that most community members earn very little money from their workplaces.

''*It's no easy. People struggle to get that money when they are sick. Most people do casual jobs or go to the industrial area to look for menial jobs. So the money in informal settlements is limited, people cannot afford so many things''*. **KII Policy actor (Female) Viwandani**

Many residents do not have health insurance and/or are unable to make payments to cover their premiums due to poverty. As a result, they have to make out of pocket payments when they need to access healthcare services.

''*You see to pay for those services people pay out of their pockets because most people in this area don't have NHIF. Some people use NHIF but in this area most people don't have it so they have to use the money which they have got in order to be served''*. **R3 FGD healthcare user Men (18-24) Korogocho**

'*Sometimes our clients especially those who come with emergency cases usually fail to pay and then we just have to let them go because there is nothing much we can do about it so in a way its reducing our income'*. **KII Healthcare Provider Korogocho**

b. Interpersonal level

Attitudes and skills of healthcare workers

Poor attitudes and skills of healthcare workers were reported as impediments to access to quality healthcare by residents in both slums.

*I want also to say that not all of them treat people with respect and if they don't know how to handle people with disability I am requesting the government to give them time to be trained on how they should handle PLWD***. R3 FGD PLWD (Female) Viwandani**

c. Organizational level

Services available

Although a number of health facilities are available, many are only able to provide basic health services. In many instances, residents have to be referred to facilities outside the slums for laboratory, imaging and specialist services.

'*The services we lack in this area of Korogocho and particularly at the public health facility are X-ray and laboratory services. It is very important to have a lab because for a doctor to know what a patient is suffering from they must go to a lab. So we have experienced health workers but there are no tools. They should also stock drugs'*. **R9 FGD Men (25+) Korogocho**

'*We offer medicine for free, the only challenge comes when we want to get lab tests. The lab tests are a challenge because we don't have a lab within so we send our patients to Kenyatta*

hospital so that they can be tested. We get the result after so this requires patients to come back for diagnosis, something that can take hours or days'. **KII Policy actor (Male) Korogocho**

Availability of health workers

The limited availability of healthcare workers is a major concern especially in the public health facilities. Due to the limited numbers of health workers, patients spend a lot of time in the facilities. As a result, some opt to consult and buy drugs from chemists in the slums.

'*As a facility the challenge we face is mostly the human resource. Sometimes we are overwhelmed when giving the services'.* **KII Healthcare Provider (Female) Korogocho**

'We have been having shortages of human resource, so most of time you would find that patient would access quality services the challenges would be in long queues so someone would come to the health facility and spend half the day before they actually get the service. You should also imagine that if we have one clinician who works 8 am to 5 pm and is going to see 120 patients; by the time they are seeing their 50th patient, the quality might not be the as the same as the first 10 patients that this clinician served'. **KII Policy actor (Female) Viwandani**

'You can go to that hospital and queue for a long time' **R1 FGD Women (25+) Korogocho**

Operating hours of health care facilities

Operating hours of facilities coupled with the limited number of public facilities were identified as barriers to regular access to care. The hours do not favour people who work during the day. Each of the slums has one public health facility.

'Let say in public hospitals they operate from 8 AM to 4 or 5 PM but during the weekends they are not available. They close so you will have to go to private since they open every day' **R7 FGD Men (25+) Viwandani**

'So let us say private facilities are okay because they operate twenty four hours but the public hospitals close at 4 PM while on weekends they don't open. They operate from Monday to Friday' **R1 FGD Men (25+) Viwandani**

d. Community level

Poor infrastructure, insecurity and environmental hazards

The hazardous environment in the slums was highlighted as a challenge to accessing healthcare. Poor roads, insecurity and inadequate water and sanitation facilities are major concerns limiting access to care and exposing others to infections.

'*The roads are in bad state when it is raining. The other challenge is that the way houses are structured in this area are congested even sometimes it is very hard for ambulance to access when you have a patient who is severely sick'* **R3 FGD Men (25+) Korogocho**

'*The challenges we face when we are sick and need to go to hospital…you have to pass through those drainages and also at the same time you are afraid of thieves because the security is not good'* **R9 FGD Men PLWD Viwandani**

e. Policy level

Inadequate financial resources

Low budget allocations and erratic reimbursement of NHIF from the government is a barrier to health planning and service delivery.

'*We have the health service fund that comes through the county that is one of our main funding and then the grants that come in from donors or through the government as well and the NHIF reimbursement that is usually given to those facilities that are NHIF accredited. But to be honest the funds have not been quite adequate. Also we have been having challenges with NHIF reimbursements. They delay, so you find like now there are some facilities that have not been paid for many months and they have been offering these services so they are really struggling to see how to continue offering services'.* **KII Policy actor (Female) Viwandani**

Limited involvement in decision making and political interference

The limited involvement of policy actors in decisions that directly affect the communities that they serve is a critical challenge affecting health service delivery.

'*Of course sometimes what you would really want is not what comes on the ground. Sometimes you can prioritise something, maybe finish up a block and then due to political interference you find that some other work started alongside, yet those funds would have gone to a more prioritized initiative'.* **KII Policy actor (Male) Korogocho**

'*Some of the decisions take long while we are not involved in other decisions, and when we make decisions you find that whatever you have decided on has not been acted upon.*' **KII Policy actor (Male) Viwandani**

Accountability mechanisms

Mechanisms to enable community members and health providers to contribute to decisions that are related to their healthcare such as suggestion boxes, health facility committees and other stakeholder forums exist. However, these are not adequately utilised. This was highlighted by community members during the feedback sessions and confirmed by policymakers.

'*We have barazas (community meetings) during which we share our experiences and suggestions on health and other matters like security. But what we say does not matter. Those private facilities are personal businesses. You cannot tell them what to do*.' **Male, FGD (Feedback workshop) Viwandani**

'*The public is willing to give information but what we have noticed is that they give information and it's not acted on. When you call them again, they tell you that you are wasting our time as we gave you suggestions which have not been implemented.'* **KII Policy actor (Female) Viwandani**

'*The contributions we make take a long time because they involve so many people after the meeting. When we attend the meetings we have different stakeholders whom those who are chairing the meeting need to discuss with about what have been shared by the participants. That is the part that will take time before concrete decisions are reached'*. **KII Policy actor (Male) Korogocho**

Need factors

Community members related that the main reasons for seeking primary healthcare were respiratory conditions, injuries and care for pregnant women and children. This was confirmed by the health providers who also added that chronic health conditions were reasons for seeking care by slum residents. Korogocho and Viwandani differ in some of their characteristics with Korogocho being home to the largest dumpsite in Nairobi City County (Dandora) hence more prone to infectious diseases related to poor hygiene

'*The common illnesses in Korogocho are diarrhoeal diseases, such as cholera and the rest. We also have cases of pneumonia and other respiratory tract infections because of the dump site that is just close to the hospital'*. **KII Healthcare Provider (Female) Korogocho**

'*The common illnesses are diarrhoea, pneumonia, accidents, and we have TB nowadays. The others one are diabetes and hypertension'*. **KII Healthcare Provider (Male) Viwandani**

The Covid-19 pandemic

Following the declaration of the global pandemic and the national restrictions to curb the spread of the disease that followed, the challenges above were heightened. Detailed analyses of the impact of the pandemic on healthcare access have been reported and published elsewhere (4, 32). In addition to reduced access to care as a result of fear and curfews, community members lost means of livelihood making it harder for them to pay for healthcare directly or keep up to date with their health insurance premiums. Furthermore policy actors reported that the supply of essential medicines was disrupted and available resources reallocated to respond to the pandemic crisis.

'*We have had to do a balance here and there especially since the Covid-19 pandemic started. We didn't have a budget allocated for it so we really had to pool the resources to procure extra masks, gloves, sanitizers; things that were not required in large numbers before. So that affected our finances*.' **KII Policy actor (Female), Viwandani**

Recommendations to reduce healthcare access barriers

Several suggestions were made to address the barriers and improve health service utilisation at different levels and by different stakeholders.

Recommendations included community, provider and system-level responses to address the identified barriers. The recommendations are cross-cutting and applicable to different levels.

At community level, members and their leaders strongly called for financial and risk protection including access to affordable health insurance and more economic opportunities as well as health education to improving health-seeking were made.

For health services to be better government should consider reducing the amount of money people pay for the NHIF card so that everybody can be able to afford to pay. There are those people who are not employed and they need that card but because they have low income they can't afford to get it. **R3 FGD PLWD Korogocho**

Provider level suggestions included increasing the number of public health facilities, the variety of health services and health workers' numbers and their skills, equipping facilities with necessary equipment and regular drug supplies, among others.

For us to have better health services a hospital should be constructed near us. The hospital should have enough drug stocks of drugs, have qualified nurses and doctors and operate twenty four hours because a person can get sick anytime. **R8 FGD PLWD Viwandani**

While system level suggestions included regulating the health providers' work with more regular quality checks, more funding for health initiatives and better and effective decision-making processes.

'I think building the policies from bottom-up would also be important rather than a top down kind of an approach. Because we have some policies which have been cascaded from up and implementing is challenging. The devising of these policies and involvement from bottom-up would be important'. **KII Policy actor (Male) Korogocho**

Discussion

We explored current barriers to access to quality healthcare in two urban slums, highlighting several challenges that urban slum residents encounter in their pursuit of quality healthcare. We identified the predisposing, enabling, and need factors that together negatively impact the way residents of urban slums access healthcare. In addition, existing barriers were heightened by the Covid-19 pandemic. Across different population and stakeholder groups there was agreement that the socioeconomic status of individuals and their families such as poverty and lack of health insurance interact with community factors like poor infrastructure, limited availability of health facilities and insecurity and health system factors such as limited facility opening hours and health providers' attitudes and skills and limited public health resources to limit healthcare access in this setting and perpetuate health inequities. It is also important to note that the factors are interrelated, as for instance, high levels of prevailing poverty contribute to high crime rates seen in the environment that in turn prevent community members from moving to health facilities and health providers shunning employment in the areas.

Previous studies in the slums and other underserved areas in Kenya have identified similar barriers at individual and community levels (19, 20, 33). In our study, context specific barriers to quality healthcare in the slums included heightened insecurity, poor infrastructure

and poor sanitation and hygiene. These are in line with findings by other studies done in slum settings (9, 10). In the 2000 (9) and 2012 (10) Nairobi Cross-Sectional Slum Surveys (NCSS) the hazardous environment in the slums characterised by the near absence of the public sector, limited access to healthcare and water and sanitation services, among others. As such, these challenges persist in spite of two decades of targeted investments in initiatives to reduce inequalities in the slums.

An important challenge to tackling the barriers to access to quality healthcare in our context is related to policy formulation and key stakeholder engagement in that process. Service providers and other key stakeholders reported about their inability to respond to the needs of the communities as most of the decisions about caregiving and services were made higher up, with significant implications on how limited health system resources are managed. It appears that devolution of health services through the 2010 constitution has not resulted in the much needed empowering reforms at subnational level or translated into effective care delivery for the most vulnerable, who are also the majority. Thus, bureaucracy and ineffective accountability mechanisms persist and continues to entrench health inequalities that devolving health was to help resolve (34, 35). In a devolved health system, paying attention to health managers' abilities to assess population health needs and respond to them is necessary. In addition, the barriers reported as regard to the limited use of existing accountability mechanisms need further attention to ensure that the mechanisms work for the greater good of the urban slum residents. For example, a recent systematic review demonstrated that inadequate human resources for health and limited funding of county health initiatives is a persistent barrier dating from the pre-devolution era (35).

The identified challenges reinforce the need to understand and respond to social determinants of health. As such, innovations to respond to existing health inequities need to be multi-sectoral in nature. This is also in line with the recommendations made by study participants to address existing gaps. Multi-sectoral strategies are needed to address individual, community and system-level barriers to quality healthcare in this slum settings to ensure health access for all.

Limitations

The nature of the study resulted in information from this setting and based on perspectives thus might not necessarily be applicable in other settings. Interviews conducted in Kiswahili- loss of meaning during translation. However, we triangulated information from different

sources (FGDs, IDIs, and KIIs) and sought feedback from different stakeholders who validated the results. Furthermore, similar results have been demonstrated in other low resource settings.

Conclusion

In spite of many targeted interventions to improve the health and wellbeing of the urban poor, many slum residents are still unable to receive quality healthcare because of persistent and new barriers due to the Covid-19 pandemic. Multi-sectoral innovations are needed to reduce existing service delivery gaps.

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Author Contributions

PB conceptualised and designed the study, contributed to the analysis and interpretation of the data and drafted the manuscript. LK and PK contributed to the design of the study, coordinated the data collection, analysis and edited the manuscript. MA and IK contributed to the analysis and interpretation of the data, and reviewed drafts of the manuscript. CK and CKy contributed to the design of the study and reviewed drafts of the manuscript. All authors read and approved the final manuscript.

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Standards for Reporting Qualitative Research (SRQR)*

http://www.equator-network.org/reporting-guidelines/srqr/

	Page/line no(s).
Title and abstract	
Title - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	1/1-2
Abstract - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions	2/21-48
Introduction	
Problem formulation - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	4-6/60-111
Purpose or research question - Purpose of the study and specific objectives or questions	5/91-103
Methods	
Qualitative approach and research paradigm - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**	5/114-121
Researcher characteristics and reflexivity - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	6/134
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Ethical issues pertaining to human subjects - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	7/163-169
Data collection methods - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**	6/130-145

Data collection instruments and technologies - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	6/141-145
Units of study - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	7-8/171-179
Data processing - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	6/147-148
Data analysis - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	6-7/147-162
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Results/findings

Synthesis and interpretation - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	7-14/170-359
Links to empirical data - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	7-14/170-359

Discussion

Integration with prior work, implications, transferability, and contribution(s) to the field - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	14-16/360-413
Limitations - Trustworthiness and limitations of findings	16/402-407

Other

Conflicts of interest - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	17/443
Funding - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	187/444-448

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

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Title: **Demand and supply-side barriers and opportunities to enhance access to healthcare for urban poor populations in Kenya: a qualitative study**

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Abstract (298)

Objective: To explore the barriers to and options for improving access to quality healthcare for the urban poor in Nairobi, Kenya.

Design and participants: Qualitative approach. In-depth interviews (n=12), focus group discussions with community members (n=12), and Key informant interviews with health providers and policymakers (n= 25) were conducted between August 2019 and September 2020. Four feedback and validation workshops were held in December 2019 and April-June 2021.

Setting: Korogocho and Viwandani urban slums in Nairobi, Kenya.

Results: The socioeconomic status of individuals and their families, such as poverty and lack of health insurance, interact with community-level factors like poor infrastructure, limited availability of health facilities and insecurity; and health system factors such as limited facility opening hours, health providers' attitudes and skills, and limited public health resources to limit healthcare access and perpetuate health inequities. Limited involvement in decision-making processes by service providers and other key stakeholders was identified as a major challenge with significant implications on how limited health system resources are managed.

Conclusion: Despite many targeted interventions to improve the health and wellbeing of the urban poor, slum residents are still unable to obtain quality healthcare because of persistent and new barriers due to the Covid-19 pandemic. In a devolved health system, paying attention to health services managers' abilities to assess and respond to population health needs is vital. The limited use of existing accountability mechanisms requires attention to ensure that the mechanisms enhance, rather than limit, access to health services for the urban slum residents. The uniqueness of poor urban settings also requires in-depth and focussed attention to social determinants of health within these contexts. To address individual, community, and system-level barriers to quality healthcare in this and related settings and expand access to health services for all, multi-sectoral strategies tailored to each population group are needed.

Keywords: Healthcare, Access, Urban Slums, Covid-19, Nairobi

Strengths and limitations of this study

- The study triangulated information from different sources (FGDs, IDIs, and KIIs) to enhance the validity of the results.
- Structured and urban poor participatory approaches were used to obtain feedback from different stakeholders and validate the findings.
- Most of the themes mentioned by the participants correspond very well with those found in the literature.
- The study was conducted in urban poor settlements, limiting the applicability of the results to the study area or similar settings.

Introduction (4701)

In many low- and middle-income countries, common barriers to accessing quality healthcare include geographical access, availability, affordability, and acceptability of services (1-3). These barriers result in high levels of health inequities in countries and are thus major drivers of poor health outcomes and a significant challenge to health systems. The ongoing Covid-19 pandemic has exacerbated health inequalities (4, 5). If these countries are to 'build back better' and get their health systems goals back on track, renewed commitments to reduce health inequalities, especially for vulnerable populations, are necessary.

Kenya has invested in several initiatives to reduce health inequalities and improve access to adequate care for its population (6, 7). Key among these initiatives is Universal Health Coverage (UHC), meant to anchor government health investment efforts to reduce health inequities. However, these initiatives rarely benefit the urban poor, who make up over two-thirds of Kenya's growing urban population (8, 9). Despite their physical proximity to the national government and public and private services, slum areas are disadvantaged and expose residents to health, social and financial vulnerabilities (10). Past research has shown that many slum residents of Nairobi, Kenya's capital, experience poor health outcomes, including higher maternal and child morbidity and mortality compared to other urban and rural areas (9, 10).

Based on this evidence, the Government of Kenya and its partners made critical investments such as the Slum Upgrading Programme (11) the Reproductive Health Voucher (RH-OBA) (12) to respond to the needs of the urban poor. The RH-OBA and Free Maternity care policy showed an increase in facility-based deliveries in public hospitals and highlighted the impact of cost as a barrier to healthcare utilisation, particularly by women (13-15). However, audits of these programmes identify many persistent challenges. For example, a review of the Reproductive Health voucher programme in two slums revealed that 22% of the intended beneficiaries did not use the vouchers (13). Similarly, recent data on the Free Maternity Care programme showed that many disadvantaged groups are not benefitting from the services (16). Some of the challenges are related to how the programmes are implemented, while others are ingrained in broader societal and health system structural challenges (17, 18). Solutions, which enhance access to care, should be informed by an in-depth understanding of the barriers to access, as these are often context and population-specific and keep evolving.

As Kenya makes more investments towards UHC, it is essential to understand and document current, and if any, persistent barriers to access to quality healthcare by the most disadvantaged population groups such as urban slum residents to identify measures to redress the inequities. Such an assessment needs to go beyond the current limitations in many studies on barriers to healthcare access that tend to focus on demand-side barriers (19, 20). Instead, an integrated approach, bringing together demand and supply-side analyses, is likely to yield a holistic understanding of healthcare access challenges (1, 21). Taking the unique context of urban slums in Kenya, this study explores persistent and current demand and supply-side barriers to optimum delivery and access to quality healthcare. The findings are used to identify opportunities that can be harnessed to reduce these barriers for better health and wellbeing in two urban slum communities in Nairobi, Kenya. The study draws on data collected as part of a multi-country study to assess current healthcare services in seven informal settlements in Africa and Asia to identify viable service delivery models relevant to the slum setting (22). The study explored preventive and curative healthcare services for all population groups in the urban slums (22).

With due consideration for the unique context of slums in Kenya (as elsewhere), this study utilised the Andersen Behavioural Model (ABM) to conceptualise the barriers to access to healthcare (23, 24). The model describes predisposing, enabling and need factors that influence people's decisions to utilise health care services. Predisposing factors are pre-existing socio-cultural characteristics of an individual; enabling factors serve as a means to accessing care, while the need factors refer to the immediate reason why health care is sought. The ABM has undergone several iterations, as presented by Andersen that modifications could be made to fit different purposes without distorting the original framework.

Methods

Design and participants

The study used a qualitative approach. Healthcare users, providers and policy actors were purposively selected. Data were collected through 12 Focus Group Discussions (FGDs) and 12 In-depth Interviews (IDIs) with healthcare users representing persons living with physical disabilities (PLWD), younger (18-24 years old) and older (25+) women and men and 25 Key Informant Interviews (KIIs) with healthcare providers (formal and informal), chemists and policy actors. The FGDs and IDIs were conducted in-person to seek perspectives from

healthcare users on the provision of healthcare services in the community (*Table 1*). While KIIs were conducted remotely via telephone interviews (*Table 2*).

Setting

The study was conducted in two urban slums, Korogocho and Viwandani, in Nairobi County, the capital city of Kenya. They are located 7 to 12 kilometres away from the Nairobi Central Business District (CBD) and about 7 kilometres away from each other. Viwandani has an ethnically diverse migrant population mainly seeking economic opportunities in the surrounding industries, whereas Korogocho has a more settled population that has lived there over several generations (25). The slum areas in Nairobi are characterised by a polluted environment, overcrowding, poor infrastructure, poor sanitation, a marked absence of the public services and debilitating poverty (26-28). These conditions, which exacerbate morbidity and mortality, disproportionately affect vulnerable groups such as children and the elderly (26, 29).

Data collection procedures

Trained research assistants collected data in August 2019 and September 2020. The research assistants had prior experience conducting qualitative interviews, were familiar with the slum communities and were fluent in English and Kiswahili, the two most common languages spoken in the study areas. The research assistants had no prior interactions with participants. The FGDs and IDIs were conducted before the Covid-19 pandemic in a central location within the community convenient for all the participants. The selected locations also ensured privacy and minimum disruptions. Data collection procedures for KII participants were adapted to include remote telephone interviews during the Covid-19 period. Participants were contacted a few days before the interviews to select a date and time that was most convenient for them to participate in the interviews. Participants were also briefed and encouraged to position themselves in a place that ensured privacy and minimal disruptions. Interviews were conducted using a structured study guide. The interviews lasted between 30 to 60 minutes for IDIs and KIIs, and up to 90 minutes for FGDs. The FGDs consisted of eight to ten participants. All interviews were audio-recorded and complemented by handwritten notes.

Data management and analysis

Audio-recorded files were transcribed verbatim and translated into English (FGDs and IDIs). NVivo software (QRS International 2018) was used to code the data. The data were analysed

using content analysis method through the stages suggested by Graneheim and Lundman (2004) (30). We applied a deductive component informed by the Andersen Behavioural Model (ABM) (23, 24) approach and an inductive one allowing for the identification of new themes from the data (31). The ABM provided the main guiding framework of analysis, enabling us to code and sort the data and identify the categories, predisposing, enabling and need factors driving the barriers to access to quality healthcare services in the urban slums. Because the ABM is flexible, we were able to add factors specific to the slum context as a new level of vulnerability. At the same time, the inductive approach identified recommendations to improve access to quality healthcare. Two researchers identified themes from the coded data. Two other researchers independently reviewed the themes. All the authors agreed on the themes. Additional recommendations were identified during participatory workshops in December 2019, April and June 2021 convened by the research teams and attended by community representatives, health providers and policymakers. Data saturation was achieved during the analysis.

Ethical considerations

This study involved human participants and was approved by an Ethics Committee(s). Approval was granted by AMREF Health Africa's Ethics and Scientific Review Committee (ESRC) under protocol ID number AMREF-ESRC P440/2018. The research permit was received from the National Commission for Science Technology and Innovation (NACOSTI). Additional clearance was obtained from AMREF Health Africa's ESRC to conduct telephone interviews following the declaration of the Covid-19 pandemic and its restrictions in the country. Study participants gave written informed consent for interviews that were conducted face-to-face or verbal audio-recorded informed consent for interviews conducted remotely via telephone interviews. The study did not involve animal subjects.

Patient and Public Involvement

Participants were involved in the reporting and dissemination of our research. Recommendations were identified during participatory workshops in December 2019, April and June 2021 convened by the research teams and attended by community representatives, health providers and policymakers.

Results

Participants

The total number of participants for FGDs and IDIs were 127 (66 females and 61 males) for both Korogocho and Viwandani (*Table* 1). About half the participants had always lived in the slums. The majority had received some healthcare service in the six months before the interview. On average, the key informant participants had served in the communities for 11 years (*Table* 2). Most of the healthcare providers had attained tertiary education. On the other hand, most alternative caregivers had only attained primary level education.

Table 1: Focus Group Discussion/In-depth Interview Participant Characteristics

Site	Average age	Sex		Always lived (born) in the area	Needed healthcare in the month before the interview	Received healthcare in the six months before the interview
		Female	Male			
Korogocho	28	37	34	34	62	60
Viwandani	29	29	27	19	44	42
Total		**66**	**61**	**53**	**106**	**102**
		127				

Table 2: Key Informant Participant Characteristics

Category	Highest level of education	Occupational Background	Years served in this capacity	Years worked in the community
Healthcare providers (public/private sector) (n=4)	Tertiary	Clinical, Nursing Public Health	3-14 years	3-7 years
Chemists/pharmacist (n=8)	Tertiary	Nursing, pharmaceutical (pharmtech/pharmacist)	5-15 years	5-15 years
Alternative/informal care providers (n=8)	Secondary (only 1) the rest had primary	Traditional healers, faith healers, herbalists	18-40 years	16-30 years
Policy actors (n=5)		Clinical, psychology, community development, medical	8-17 years	0.5-15 years

Barriers identified are grouped according to the thematic areas in the ABM and are described below:

Predisposing factors

a. Cultural norms

Health seeking behaviours and beliefs informed by the cultural norms of some of the community members were identified as a barrier to timely access to healthcare

‘‘*The late medical seeking behaviours and some people from certain cultures that believe in witchcraft are challenging. They wait and do other things until the last moment when they come to us to seek medical services’’.* **KII Healthcare Provider (Female) Viwandani**

b. Religious beliefs

Membership in some religious groups were flagged as a deterrent to seeking services from formal medical sources. Despite the health promotion and sensitisation activities conducted by community health volunteers and the availability of free maternity health services, some community members are not willing to take up any of the services driven by their religious beliefs.

‘‘*There was one incident that happened recently. A sick child died because their religion does not allow them to go to the hospital. They thought that when a child is prayed for, they would heal’’.* **R2 FGD Healthcare user Women (18-24) Viwandani**

Enabling Factors

a. Individual level

Poverty and unaffordable healthcare

Limited financial resources and the relatively high cost of care were highlighted as challenges, given that most community members earn very little money from their workplaces.

‘‘*It’s no easy. People struggle to get that money when they are sick. Most people do casual jobs or go to the industrial area to look for menial jobs. So the money in informal settlements is limited, people cannot afford so many things’’.* **KII Policy actor (Female) Viwandani**

Many residents do not have health insurance and/or are unable to make payments to cover their premiums due to poverty. As a result, they have to make out of pocket payments when they need to access healthcare services.

''*You see, to pay for those services, people pay out of their pockets because most people in this area don't have NHIF [referring to the National Health Insurance Fund]. In this area, most people don't NHIF to be served, so they pay out of their pockets''*. **R3 FGD healthcare user Men (18-24) Korogocho**

'*Sometimes our clients, especially those who come with emergency cases, usually fail to pay and then we just have to let them go because there is nothing much we can do about it so in a way it is reducing our income'*. **KII Healthcare Provider (Male) Korogocho**

b. Interpersonal level

Attitudes and skills of healthcare workers

Poor attitudes and skills of healthcare workers were reported as impediments to access to quality healthcare by residents in both slums.

I also want to say that not all of them [health workers] treat people with respect and if they don't know how to handle people with disability, I am requesting the government to give them time to be trained on how they should handle PLWD. **R3 FGD PLWD (Female) Viwandani**

c. Organizational level

Services available

Although several health facilities are available, many can only provide basic health services. In many instances, residents have to be referred to facilities outside the slums for laboratory, imaging and specialist services.

'*The services we lack in this area of Korogocho and particularly at the public health facility are X-ray and laboratory services. It is imperative to have a lab because for a doctor to know what a patient is suffering from, they must go to a lab. So we have experienced health workers, but there are no tools. They should also stock drugs'*. **R9 FGD Men (25+) Korogocho**

'*We offer medicine for free; the only challenge comes when we want to get lab tests. The lab tests are a challenge because we don't have a lab within, so we send our patients to Kenyatta*

hospital to be tested. We get the result after, so this requires patients to come back for diagnosis, something that can take hours or days'. **KII Policy actor (Male) Korogocho**

Availability of health workers

The limited availability of healthcare workers is a major concern, especially in public health facilities. Due to the limited number of health workers, patients spend a lot of time in the facilities. As a result, some opt to consult and buy drugs from chemists in the slums.

'*As a facility, the challenge we face is mostly the human resource. Sometimes we are overwhelmed when giving the services'.* **KII Healthcare Provider (Female) Korogocho**

'We have been having shortages of human resources, so most of the time you would find that patient would access quality services the challenges would be in long queues so someone would come to the health facility and spend half the day before they get the service. You should also imagine that if we have one clinician who works 8 am to 5 pm and is going to see 120 patients, by the time they are seeing their 50th patient, the quality might not be the same as the first ten patients this clinician served'. **KII Policy actor (Female) Viwandani**

'You can go to that hospital and queue for a long time' **R1 FGD Women (25+) Korogocho.**

Operating hours of health care facilities

Operating hours of facilities coupled with the limited number of public facilities were identified as barriers to regular access to care. The hours do not favour people who work during the day. Each of the slums has one public health facility.

'Let's say in public hospitals they operate from 8 AM to 4 or 5 PM, but they are not available during the weekends. They close, so you will have to go to private since they open every day' **R7 FGD Men (25+) Viwandani**

'So let us say private facilities are okay because they operate twenty-four hours, but the public hospitals close at 4 PM and don't open on weekends. They operate from Monday to Friday' **R1 FGD Men (25+) Viwandani**

d. Community-level

Poor infrastructure, insecurity and environmental hazards

The hazardous environment in the slums was highlighted as a challenge to accessing healthcare. Poor roads, insecurity and inadequate water and sanitation facilities are major concerns limiting access to care and exposing others to infections.

'*The roads are in a bad state when it is raining. The other challenge is that the way houses are structured in this area are congested even sometimes it is very hard for an ambulance to access when you have a patient who is severely sick'* **R3 FGD Men (25+) Korogocho**

'*The challenges we face when we are sick and need to go to hospital…you have to pass through those drainages and also at the same time you are afraid of thieves because the security is not good'* **R9 FGD Men PLWD Viwandani**

As regards insecurity, healthcare users noted that women were more at risk of being mugged

The challenge with insecurity in this place is that the two health facilities we have are located in dangerous spots. Young boys hide in alleys and snatch your phone and bag. They usually target women. In addition, my home is far from those hospitals. **IDI Female Healthcare user Korogocho**

e. Policy level

Inadequate financial resources

The governments low budget allocations and erratic reimbursement of the countries National Health Insurance Scheme - NHIF is a barrier to health planning and service delivery.

'*We have the health service fund that comes through the county that is one of our main funding and then the grants that come in from donors or through the government as well and the NHIF reimbursement that is usually given to those facilities that are NHIF accredited. But to be honest, the funds have not been quite adequate. Also, we have been having challenges with NHIF reimbursements. They delay, so you find like now there are some facilities that have not been paid for many months and they have been offering these services, so they are really struggling to see how to continue offering services'.* **KII Policy actor (Female) Viwandani**

Limited involvement in decision making and political interference

The limited involvement of policy actors in decisions that directly affect the communities they serve is a critical challenge affecting health service delivery.

'*Of course, sometimes what you would really want is not what comes on the ground. Sometimes you can prioritise something, maybe finish up a block, and then, due to political interference, you find some other work started alongside. Yet, those funds would have gone to a more prioritised initiative'*. **KII Policy actor (Male) Korogocho**

'*Some of the decisions take long while we are not involved in other decisions, and when we make decisions, you find that whatever you have decided on has not been acted upon.*' **KII Policy actor (Male) Viwandani**

Accountability mechanisms

Mechanisms to enable community members and health providers to contribute to decisions related to their healthcare, such as suggestion boxes, health facility committees and other stakeholder forums, exist. However, these are not adequately utilised. This was highlighted by community members during the feedback sessions and confirmed by policymakers.

'*We have barazas (community meetings) during which we share our experiences and suggestions on health and other matters like security. But what we say does not matter. Those private facilities are personal businesses. You cannot tell them what to do*.' **Male, FGD (Feedback workshop) Viwandani**

'*The public is willing to give information, but what we have noticed is that they give information, and it's not acted on. When you call them again, they tell you that you are wasting our time as we gave you suggestions which have not been implemented.'* **KII Policy actor (Female) Viwandani**

'*The contributions we make take a long time because they involve many people after the meeting. When we attend the meetings, we have different stakeholders whom those chairing the meeting need to discuss what has been shared by the participants. That is the part that will take time before concrete decisions are reached'*. **KII Policy actor (Male) Korogocho**

Need factors

Community members related that the main reasons for seeking primary healthcare were respiratory conditions, injuries and care for pregnant women and children. This was confirmed by the health providers, who also added that chronic health conditions were reasons for seeking care by slum residents. Korogocho and Viwandani differ in some of their

characteristics. Korogocho is home to the largest dumpsite in Nairobi City County (Dandora), hence more prone to infectious diseases related to poor hygiene.

'*The common illnesses in Korogocho are diarrhoeal diseases, such as cholera and the rest. We also have cases of pneumonia and other respiratory tract infections because of the dumpsite that is just close to the hospital'*. **KII Healthcare Provider (Female) Korogocho**

'*The common illnesses are diarrhoea, pneumonia, accidents, and TB nowadays. The others are diabetes and hypertension'*. **KII Healthcare Provider (Male) Viwandani**

The Covid-19 pandemic

Following the declaration of the global pandemic and the national restrictions to curb the spread of the disease that followed, the challenges above were heightened. Detailed analyses of the impact of the pandemic on healthcare access have been reported and published elsewhere (4, 32). In addition to reduced access to care due to fear and curfews, community members lost their means of livelihood, making it harder for them to pay for healthcare directly or keep up to date with their health insurance premiums. Furthermore, policy actors reported that the supply of essential medicines was disrupted and available resources reallocated to respond to the pandemic crisis.

'*We have had to balance here and there, especially since the Covid-19 pandemic started. We didn't have a budget allocated for it, so we had to pool the resources to procure extra masks, gloves, sanitisers, things that were not required in large numbers before. So that affected our finances*.' **KII Policy actor (Female), Viwandani**

Recommendations to reduce healthcare access barriers

Several suggestions were made to address the barriers and improve health service utilisation at different levels and by different stakeholders. Recommendations included community, provider and system-level responses to address the identified barriers. The recommendations are cross-cutting and applicable to different levels. At the community level, members and their leaders strongly called for financial and risk protection, including access to affordable health insurance and more economic opportunities and health education to improve health-seeking were made.

For health services to be better, the government should consider reducing the amount of money people pay for the NHIF card so that everybody can afford to pay. There are those

people who are not employed, and they need that card, but because they have a low income, they can't afford it. **R3 FGD PLWD Korogocho**

Provider level suggestions included increasing the number of public health facilities, the variety of health services and health workers' numbers and their skills, and equipping facilities with the necessary equipment and regular drug supplies.

For us to have better health services, a hospital should be constructed near us. The hospital should have enough drug stocks, have qualified nurses and doctors and operate twenty-four hours because a person can get sick anytime. **R8 FGD PLWD Viwandani**

While system-level suggestions included regulating the health providers' work with more regular quality checks, more funding for health initiatives and better and effective decision-making processes.

'I think building the policies from the bottom-up would also be important rather than a top-down kind of an approach. Because we have some policies cascaded from up and implementing is challenging. The devising of these policies and involvement from bottom-up would be important'. **KII Policy actor (Male) Korogocho**

Discussion

We explored current barriers to access to quality healthcare in two urban slums, highlighting several challenges that urban slum residents encounter in their pursuit of quality healthcare. We identified the predisposing, enabling, and need factors that negatively impact the way residents of urban slums access healthcare. In addition to these, we noted that existing barriers were worsened by the Covid-19 pandemic. Across different population and stakeholder groups there was agreement that a combination of factors perpetuated health inequalities and limited access to healthcare. This was shown through the interaction of individual and family socioeconomic status (such as poverty and lack of health insurance), with community factors (such as poor infrastructure, limited availability of health facilities and insecurity), and health system factors (such as limited facility opening hours and health providers' attitudes and skills, limited public health resources). It is also important to note that high levels of prevailing poverty contribute to high crime rates seen in the environment. This in turn prevents community members from going to health facilities and health providers shunning employment in these areas. The role of gender in limiting access to healthcare was evident under the nature of the environment, where insecurity played a role in preventing

women from accessing health services. Insecurity has been reported in previous studies in the study sites as a major barrier to access and utilisation of maternal and child health services in the slums (33). The mentioning of non-communicable diseases such as hypertension and diabetes in one of the sites, Viwandani, reiterates the growing evidence on the burden of chronic conditions among the urban poor in this setting and similar settings (34, 35).

Previous studies in the slums and other underserved areas in Kenya have identified similar barriers at individual and community levels (19, 20, 36). In our study, context-specific barriers to quality healthcare in the slums included heightened insecurity, poor infrastructure and poor sanitation and hygiene. These are in line with findings by other studies done in slum settings (9, 10). In the 2000 (9) and 2012 (10) Nairobi Cross-Sectional Slum Surveys (NCSS) the hazardous environment in the slums characterised by the near absence of the public sector, limited access to healthcare and water and sanitation services, among others. As such, these challenges persist despite two decades of targeted investments in initiatives to reduce inequalities in the slums.

An important challenge to tackling the barriers to access to quality healthcare in our context is policy formulation and key stakeholder engagement in that process. Service providers and other key stakeholders reported their inability to respond to the needs of the communities as most of the decisions about caregiving and services were made higher up, with significant implications on how limited health system resources are managed. It appears that devolution of health services through the 2010 constitution has not resulted in the much-needed empowering reforms at the subnational level or translated into effective care delivery for the most vulnerable, who are also the majority. Thus, bureaucracy and ineffective accountability mechanisms continue to entrench health inequalities that devolving health was to help resolve (37, 38). In a devolved health system, it is necessary to pay attention to health managers' abilities to assess population health needs and respond to them. In addition, the barriers reported regarding the limited use of existing accountability mechanisms need further attention to ensure that the mechanisms work for the greater good of the urban slum residents. For example, a recent systematic review demonstrated that inadequate human resources for health and limited funding of county health initiatives are a persistent barrier dating from the pre-devolution era (38).

The identified challenges reinforce the need to understand and respond to social determinants of health. Tackling these challenges requires multisectoral innovations, rather than the current

siloed approach. This is also in line with the recommendations made by study participants to address existing gaps. Multi-sectoral strategies are needed to address individual, community, and system-level barriers to quality healthcare in this slum settings to ensure health access for all.

Limitations

The nature of the study resulted in information from this setting and based on perspectives thus might not necessarily be applicable in other settings. Interviews conducted in Kiswahili may have resulted in loss of meaning during translation. However, we triangulated information from different sources (FGDs, IDIs, and KIIs) and sought feedback from various stakeholders who validated the results. Furthermore, our results resonate with findings from other low resource settings.

Conclusion

Despite many targeted interventions to improve the health and wellbeing of the urban poor, many slum residents are still unable to receive quality healthcare because of persistent and new barriers due to the Covid-19 pandemic. Multi-sectoral innovations are needed to reduce existing service delivery gaps.

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PB conceptualised and designed the study, contributed to the analysis and interpretation of the data and drafted the manuscript. LK and PK contributed to the design of the study, coordinated the data collection, analysis and edited the manuscript. MA and IK contributed to the analysis and interpretation of the data, and reviewed drafts of the manuscript. CK and CKy contributed to the design of the study and reviewed drafts of the manuscript. All authors read and approved the final manuscript.

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Standards for Reporting Qualitative Research (SRQR)*

http://www.equator-network.org/reporting-guidelines/srqr/

	Page/line no(s).
Title and abstract	
Title - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	1/1-2
Abstract - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions	2/21-48
Introduction	
Problem formulation - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	4-6/60-111
Purpose or research question - Purpose of the study and specific objectives or questions	5/91-103
Methods	
Qualitative approach and research paradigm - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**	5/114-121
Researcher characteristics and reflexivity - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	6/134
Context - Setting/site and salient contextual factors; rationale**	6/123-129
Sampling strategy - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**	5/114-121 & 7/162
Ethical issues pertaining to human subjects - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	7/163-169
Data collection methods - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**	6/130-145

Data collection instruments and technologies - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	6/141-145
Units of study - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	7-8/171-179
Data processing - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	6/147-148
Data analysis - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	6-7/147-162
Techniques to enhance trustworthiness - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**	7/157-161

Results/findings

Synthesis and interpretation - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	7-14/170-359
Links to empirical data - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	7-14/170-359

Discussion

Integration with prior work, implications, transferability, and contribution(s) to the field - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	14-16/360-413
Limitations - Trustworthiness and limitations of findings	16/402-407

Other

Conflicts of interest - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	17/443
Funding - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	187/444-448

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

Reference:

O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014
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