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Leaving no one behind in informal urban settlements: A qualitative study of access to healthcare services among the urban poor in Kigali, Rwanda

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Abstract

Failure to access healthcare services is both a cause and effect of poverty and defies the universal health access principles. Residents of informal urban settlements live with numerous health threats amidst limited resources. This study analysed the barriers to healthcare access in Kigali's informal urban settlements. We used a descriptive qualitative design, with mixed approaches of data collection including desk review, focus group discussions and key informant interviews with administrative cell leaders, heads of health centres, community health workers and selected household heads in the study area. Results indicate that subscription to health insurance was popular and health facilities were located in close proximity. However, an interplay of structural and financial barriers limited healthcare access. The influx of patients at some evening hours, a dearth of medical supplies and healthcare personnel affect access and quality of healthcare services which compromises universal access to healthcare among the urban poor.

Keywords: Healthcare access, Barriers, Informal urban settlements, Kigali, Rwanda, Africa

Background

Universal access to healthcare is an essential element in human development and poverty reduction as it saves people's time seeking healthcare and enables them to engage in income-generating activities (Gulliford et al., 2002; WHO & UN-Habitat, 2016). Access to healthcare is a fundamental human right rooted in the principle of Universal Health Coverage (Jacobs et al., 2012; WHO & The World Bank, 2017), and the United Nations' pledge of "leaving no one behind" through the Sustainable Development Goals (Klasen & Fleurbaey, 2018). Access to healthcare and poverty is intertwined particularly in low and middle income countries (LMICs) as poor access to healthcare leads to ill-health, a catalyst for poverty. At the same time poverty potentially limits the ability to access quality healthcare and perpetuates illness among populations including older people and children.

Estimates show that more than half of the world's population not only lacks access to essential health services (WHO & The World Bank, 2017), but is also pushed into extreme poverty often caused by out-of-pocket payment for healthcare which, in some contexts, is very expensive (Gyasi et al., 2016). Many people in sub-Saharan Africa face challenges in accessing health services largely because of their inability to afford the required costs, among other factors (Fenny et al., 2018). Subsequently, people with poverty vulnerability characterised by the irregular incomes and limited ownership of resources, usually suffer a number of disease burden and socioeconomic disadvantages (Gyasi et al., 2020; McCracken & Phillips, 2017).

Crucially, social health protection schemes are used as a tool to increase healthcare access and mitigate poverty resulting from catastrophic health expenditures (Gyasi et al., 2020). Unfortunately, majority of people living in informal urban settlements lack health insurance (Lakshman et al., 2017; Uwizeye et al., 2020) which not only limits their access to health services, but also worsens their health status leading to less productivity, lost income, and may lead to life-course destitution (Peters et al., 2008).

Urban poverty manifests in various ways in most cities of developing countries; the most leading forms being the increase of informal urban settlements, and the inability for the city councils to equitably provide healthcare and other human needs to all the residents (Uwizeye et al., 2020). Nearly a billion people live in informal urban settlements globally and the number is expected to double by 2050 (UN-Habitat, 2009, 2016). Most of the informal urban neighbourhoods are characterized by overcrowding, poor sanitation, and lack of access to essential services such as roads and sanitation facilities which

expose the population to severe health risks (UN-Habitat, 2009; van de Vijver et al., 2015). Although urban inhabitants, given their physical proximity enjoy better health access than their rural counterparts in some contexts (Mberu et al., 2016) the benefits are usually inequitably distributed between the rich and the poor (Fenny et al., 2018; Uwizeye et al., 2020).

Despite the global efforts to actualize UHC, healthcare access remains a critical challenge for many LMICs due to the heavy disease burden especially on the poor (Nunn et al., 2008). Like many LMICs, Rwanda has made efforts to ensure financial and geographical access to healthcare for all. In addition to the existing community-based health insurance scheme, Rwanda recently established subsidy contributions to boost sustainability of the Community Based Health Insurance (CBHI) (Government of Rwanda, 2020) and also increased the number of healthcare facilities both in rural and urban areas.

However, a significant percentage of people, including those living in informal urban settlements, do not access healthcare for various reasons. According to the Fifth Integrated Household Living survey (EICV 5), about 43% of people who became ill did not receive the needed care in 2017. Further, data from the 2014-15 Demographic and Health Survey (DHS, 2015) show that 22% of Rwandans face geographical barriers while 77% face financial barriers in healthcare access (NISR, 2018). The persistence of such barriers poses a challenge for Rwanda to maintain its hard-gained achievements in ensuring UHC, and the case of the urban poor is a particular challenge that needs attention (Uwizeye et al., 2020).

Carrillo et al., (2011) suggested the "*Healthcare Access Barriers*" model to study the barriers to accessing healthcare. This model suggests an interplay of financial, structural, and cognitive barriers which may potentially underpin late presentation for care, decrease prevention and general healthcare access leading to inequalities in healthcare access. Financial barriers include lack of financial capacity to afford health insurance or medical bills, time constraints given the need to earn for survival (Stajduhar et al., 2019) and limited time to seek healthcare (Taber et al., 2015). Structural barriers include the institutional and geographical related factors such as the organization of the healthcare system, availability of services, health information, waiting time, and health infrastructure among others, as well as geographical location of the patient (George et al., 2018). Cognitive barriers relate to cultural and attitudinal aspects of healthcare-seeking (George et al., 2018). The demand for healthcare services may be influenced by people's beliefs about diseases, medication (Banerjee et al., 2012) and knowledge towards a particular healthcare modality (Andersen & Davidson, 2014).

Some contemporary studies have analysed barriers to and facilitators of healthcare access especially in the context of health insurance models in Sub Saharan Africa (SSA) region (Finlayson & Downe, 2013;

Gyasi et al., 2020). However, in-depth analysis of the situation in informal urban settlements particularly in Rwanda is far in-between. Using qualitative strand to research, and with reference to the Healthcare Access Barriers (HCAB) model, this study, aimed to explore barriers to healthcare access in Kigali's informal urban settlements to address the gaps in literature and to inform policy reforms responsive to the contextual needs of the population. Thus, the study responds to the following research questions: 1) What is the status of healthcare access in Kigali's informal urban settlements? 2) What are the major limitations to accessing healthcare among residents of informal urban settlements in Kigali, reference to the existing knowledge on barriers to accessing healthcare?

Methods

Study area

The study was conducted in Agatare cell, located in Nyarugenge sector, Nyarugenge district - Rwanda's Central Business District. The study site was selected purposively based on the recommendation by the Nyarugenge district officials who defined the site as the most densely populated among the other informal settlements in the district. This was because of its affordable accommodation within a walkable distance to the city centre. According to a 2015 Ministry of Infrastructure (MININFRA) report, Agatare cell is composed of seven villages made of over 1292 households with a population of over 5000 people, in density of 211 people per hectare. Like many informal urban settlements in SSA, Agatare cell is characterized by old and overcrowded informal housing, surrounded by paved roadways constructed in the efforts to address reachability of the cell (Benken, 2017).

Identification of respondents

The study used a descriptive qualitative research design with a mixed approach of data collection to triangulate the data. Participants were in four groups, namely administrative cell officers, Community Health Workers (CHWs), selected household heads and heads of health facilities that serve the Agatare cell community.

The administrative cell officers were the cell executive secretary and the cell socioeconomic development officer, selected by the virtue of their administrative mandate and position to know first-hand information on the status of healthcare in their cell. These are trusted and qualified public servants whose primary role is to oversee the day-to-day affairs of the cell including quality of life and healthcare services. The second category of community health workers included the cell councillors on health matters, elected by

the community members and trained on health issues by the health centre to advise the community members on health issues and provide first aid health support to the population. Each village has three community health workers; one male and two females. Community Health Workers (CHWs) in the context of the Rwanda's health system are the first point of contact for healthcare services at community level and thus were in position to discuss the status of healthcare, and the existing barriers at the level of their villages.

Thirdly, household heads were selected and interviewed using predefined criteria. Thus, a household should have at least one member that visited a healthcare centre 15 days before the data collection. We identified and interviewed nine household heads that met the inclusion criteria. We analysed the data simultaneously with data collection and determined the completion of data collection exercise based on the data saturation. We were guided by the CHWs to know the households that satisfied the inclusion criteria because the CHWs were in position to know them partly as they are neighbours. Finally, we interviewed the heads of the two health facilities located in the study area for them to reflect on the barriers faced in the process of providing care.

Data collection

We used different data collection techniques for each category of participants. For primary data, we conducted key informant interviews with the two cell officers from the study area. These reflected on the general status of healthcare access with focus on CBHI enrolment rates and geographical access of healthcare services in the study area.

We conducted focus group discussions (FGDs) with 18 of the 21 Community Health Workers (CHWs) from the seven villages of the cell selected based on their availability. We divided the team into two subgroups of nine people each to run the FGDs, mixing both male and female. Although some CHWs were not available given their working schedules, each village was represented in each of the two sessions which lasted for around one hour. The discussants were requested to reflect on the Community Health Insurance scheme (CBHI) with focus on how people afford the required fees, the benefits and challenges (if any) of subscribing to CBHI or in seeking and accessing healthcare. We also requested the CHWs to reflect on the alternatives of healthcare at the health centre facility that people may be using. The discussions were conducted and transcribed in the local language, Kinyarwanda, and translated into English for analysis.

Furthermore, we conducted in-depth interviews with nine household heads, drawn from five villages namely; Umucyo, Agatare, Meraneza, Inyambo and Amajyambere selected with the guidance of CHWs based on inclusion criteria as earlier described. The interviews were set to discuss the upcoming constraints of seeking and accessing care at the health centre, the alternatives to healthcare at the health centre facility and their reflection on how to improve healthcare services in the context of informal urban settlement in which they live. We requested the household heads to reflect based on their experiences during their most recent visit to a health facility (which must be 15 days before the interview). Each household head was interviewed separately at their homes to ensure their privacy and comfort while responding.

Key informant interviews (KIIs) were also conducted with 2 heads of healthcare centres, one available in the cell and the other in the neighbouring village and serving people from the selected cell. Particularly, heads of the healthcare centres were requested to reflect on the resources at the centre (material and human) and the number of patients they receive daily. Finally, we conducted several transect walks in the study area to observe the physical constraints of seeking and accessing healthcare as raised by the discussants in different sessions. Interviews were conducted in Kinyarwanda, for around one hour, and were transcribed and translated into English for analysis.

For Secondary data, we conducted desk review and collected secondary data on community health insurance subscription from the cell office, and the healthcare seeking data registered with Community health workers and the nearby health centre.

Data analysis

Primary data was transcribed and analysed using thematic analysis approach. The data was synchronised and analysed in relation to the three main themes, financial, structural and cognitive barriers to accessing healthcare, defined by the Healthcare Access Barriers (HCAB) model. Responses in each category were triangulated to identify common trends and contrasts within the same theme or across the themes. Specific quotations characterising the main opinion over a topic were presented to illustrate key points of interest. The data was analysed as they it was collected allowing the focus on the main themes.

For secondary data, we used descriptive analysis on the status of health insurance enrolment and place where people sought healthcare 15 days prior to the study, to determine the common forms of health insurance adopted in the cell and the preferred place to seek care when sick.

Ethics

The study received ethical clearance from the Research and Ethics Screening Committee (RES-C) of the University of Rwanda, College of Arts and Social Sciences. Respondents provided verbal consent before the interviews, and the consent was recorded together with the interviews. Oral consent was preferred because some of the informants could not read and write, and were more comfortable in providing oral consent.

Results

Enrolment to the Community Based Health Insurance scheme (CBHI) and the preferred place of seeking healthcare

Table 1 shows the rate of enrolment to CBHI per village. The data shows that the enrolment was popular across the villages where 87% paid the subscription fee, 4% who were indigents had their subscription fee paid by the government, and only 9% of the total population did not pay the subscription to CBHI or subscribed to other forms of health insurance.

Table 1: CBHI scheme Enrolment in Agatare cell per village by the end of the 2019/2020 financial year

Village	*Total Population*	*Percent individual enrolment*	*Percent enrolment through the government support (Indigents)*	*Percent not enrolled to CBHI*
Agatare	1151	90	2	8
Amajyambere	1003	88	4	8
Inyambo	846	91	3	6
Meraneza	814	92	3	5
Uburezi	575	88	2	10
Umucyo	399	75	9	16
Umurava	514	85	5	10
Total Population	***5302***	***87***	***4***	***9***

Source: Primary data, 2019

The data in Table 1 shows that the status of health insurance enrolment varies from village to village depending on the financial status of its residents which was directly linked to the position of the village vis-à-vis the city centre (see appendix 1). Umucyo village, despite its close proximity to the health centre

had lower rates of CBHI enrolment and a high percentage of indigents supported by government. On the contrary, villages like Agatare, Meraneza, Inyambo and Amajyambere all closer to Kigali city centre scored highly in insurance enrolment.

Presumably, being subscribed to CBHI scheme would easy access to healthcare at the nearest health centre when one is sick. To assess this assumption, the study collected data on the preferred place of seeking healthcare per village when one is sick. Table 2 shows the frequency of seeking care at the health centres and the community health workers 15 days before the study.

Table 2: Households with at least one member that sought healthcare 15 days before the study

Village	*Frequency*	*At the health centres (%)*	*At the CHW (%)*
Agatare	60	38.33	61.67
Amajyambere	67	37.31	62.69
Inyambo	74	41.89	58.11
Meraneza	71	38.03	61.97
Uburezi	75	37.33	62.67
Umucyo	69	43.48	56.52
Umurava	67	35.82	64.18
Total Population	***483***	***38.92***	***61.08***

Source: Primary data, 2019

Table 2 shows that nearly 61% of those who sought healthcare 15 days prior to the study went at the Community health workers while nearly only 39% went at the health centres. Residents of the villages of Umucyo and Inyambo had attended to the health centres at slightly higher than 40% while for the other villages the attendance was less than 40%. The small number sought care at the health centre while overall 91% of the residents were enrolled to the CBHI scheme (Table 1), considering those who pay subscription fees and those who paid through the Government subsidy. As earlier indicated, subscription to the CBHI scheme would encourage people to seek care at the health centre as the access would be easy.

Barriers to accessing healthcare

Responds reflected on financial, structural and cognitive barriers to accessing healthcare with reference to the Healthcare Access Barriers" (HCAB) model during the Interviews and group discussions.

Financial barriers

During the interviews, prominent issues raised include difficulties in timely payment for the community health insurance annual premiums and also paying for medicine which is not covered through the insurance or simply out of stock at the health facility. These were raised during the sessions with CHWs, administrative cell officers and the household heads. Responds indicated that although paying annual medical insurance subscription is mandatory for all households in Rwanda, some households fail to pay on time and they cannot access healthcare until the total required fees for the health insurance subscription is paid. Further, CBHI members still have to co-pay 10% of their medical bill and a medical consultation fee of 200 Rwandan Francs (approximately 0.25 USD). One of the respondents during the interviews

indicated difficulties to pay the required money though it is less than what would be paid without the coverage of the CBHI. The question "*what is your experience in the co-payment of medical care and medicine required for CBHI members when they visit a healthcare centre?*" raised concerns on financial barriers to healthcare.

> *I pay a consultation fee of 200 Rwanda francs (approximately 0.25Usd). After consultation, I have to co-pay 10% for the laboratory test and the medicine bills. In case one is transferred to the district hospital, the bills increase. One is required to pay for transport and at every step they request you to pay the 10%. This is too much money for some of us… I cannot afford it… and people like me cannot afford as well. Therefore, most of people like me prefer to see the community health worker than going to the health centre (Female, Elderly).*

Similar concerns were raised in several interview sessions on the same question. A follow-up question to that was "*what do you do when somebody is sick at home and cannot afford to pay the required medical bills?*" Respondents indicated to opt for self-medication or stay home and use herbs and wait to heal naturally. Alternatively, people with malaria symptoms get treated at the CHW by only paying the medical service fee of 200 Rwandan Francs. This services people with low income to some extent given that malaria is the primary cause of morbidity as it was indicated during the interviews with all the groups.

Most respondents in the study areas attribute their financial difficulties to the low paying, informal and irregular nature of their jobs. The income generated from these economic activities is not sufficient to pay for healthcare, including annual insurance premiums, co-payment for medical bills, and buying medicine. This was the common observations in responding to the question: "*how do you get money that you spend on medical bills?*" One of the respondents noted:

> *I do not have a job, so to say; I survive on temporary jobs like washing clothes for others, with little pay. My husband used to look for casual work at construction sites to make ends meet but he left me. It is not easy for me to pay the CBHI premiums for all these children. Previously when one was sick, I just went to see of community health worker for assistance. I still have to pay some money but is not the same amount I would pay, may I have gone at the health centre (Separated, mother of 4).*

It emerged from the data that most of the households live with financial competing needs such as rent, food, and school fees, before thinking of medical insurance premium and healthcare bills. We asked a follow up question to know how people afford medical annual premium in the context of competing needs:

> *We are facilitated to pay the medical insurance fees in instalments; otherwise, few people are able to pay medical insurance in one instalment (married man, head of a family of 6).*

It was raised in several interview sessions that facilitation to pay medical insurance fees in small instalments help many families to cover the required fees. However, a concern was indicated that one cannot access healthcare before paying their full premium, making a limitation to access healthcare for households with inconsistent income.

Structural barriers

Structural barriers were identified in three subthemes that are availability of services (medicine, healthcare personnel, and infrastructure), patients' waiting time, and limited vehicular access. Medicine availability appeared irregular as many people complained to be required to buy medical prescriptions from private pharmacies. The data from the interviews with leaders of the health centres also shows that medicine supplies are sometimes available and some patients may be required to buy the medicine at private pharmacies. The irregularity in medicine supplies was attributed to financial hiccups caused by delayed payment by insurance providers, which also associated with the delay in medical annual premium recovering process (the data earlier indicated that people are allowed to pay in small instalment). As such, availing all necessary healthcare services becomes a challenge:

> *Medicine is a problem here…some patients go without medicine; we ask them to buy from private pharmacies...We have borrowed medicine from the district pharmacy until we can borrow no more. Insurance reimbursements take long, meaning we take long without stocking medicines and it affects the quality of services we give to our patients, majority of whom are CBHI members. (Healthcare provider, Health centre).*

Further, the data shows that some specialised medical services are not available at the health centre that serve the Agatare cell communities. These include dental services, ophthalmology and radiology among others. When asked to *describe the services that people get from health centres*, one of the respondents replied:

> *They don't have some services. If I have dental issues, I can't not be treated from the health centre but I have to go there to get a transfer to a hospital. Or else, I buy medicine from a nearby pharmacy or I go to a private clinic if I have money (Female, Head of household).*

People at times are hesitant to seek healthcare services because of the missing services, equipment and infrastructure. On a follow up question to ask: "*what would you do in case you or family member had such a problem?*" Respondents unanimously indicated that in such cases, they visit a healthcare centre to seek transfers to the district hospital and therefore they do that when they have money. Otherwise, many households go for self-medication buying medicine at pharmacy or use herbs.

Also, the data shows healthcare staff wished to have more infrastructure to meet the demands of the community. One of the health centre staff indicated a concern on the materials at the healthcare centre:

> *Our health centre has only 12 staff that alternate day and night shift plus weekends and yet we receive over one hundred patients a day from the neighbouring villages and beyond, and majority come during evening hours when they leave work; we try our best but it's very exhausting (Healthcare provider).*

Respondents described the situation as an overstretched utilization of the few available infrastructure and healthcare workers which affects the quality of health services.

Waiting time was also raised as a key structural barrier to accessing healthcare in informal urban settlements as people are torn between finding the day's meal and going to seek healthcare services. Some of the interviewed household head indicated repeatedly that they chose to work first and seek healthcare services later after working hours.

> *The problem is not distance. No, it's the time I spend there. If I go to the health centre at 8am, I usually come back at 2pm or even 4pm depending on how many people I find there. With a family waiting to eat out of my work, spending all that time waiting is not the first choice unless the sick child (or myself) is seriously ill. I work first, then go to the health centre in the evening" (Female, head of family of 7).*

Overcrowding was also identified as one of the structural barriers, with majority residents of the settlements using CBHI, and seeking healthcare at the two available public health centres. As such, these facilities get overcrowded, and people spend many hours of waiting for health services as one of the residents indicated during the interviews:

> *Last time, I spent 5 to 6 hours at the health centre, waiting to be served. Lines were long but I had to be patient. It is usually required to sacrifice almost a day to get service at our health centre (Female, Elderly).*

Despite close proximity of health facilities, findings from field observations and transect walks revealed that majority of the houses in the study area are accessible by footpaths as in Figure 2 (appendix 2) which limits access to vehicles like ambulances in case of an emergency. This is partly attributed to the informal and unplanned nature of the houses which makes vehicular access a challenge.

We asked the residents to describe how they take a patient to the healthcare centre:

> *Sometimes we look for strong men to carry the patient, pregnant mothers and others, to the ambulance in case of emergency. If the patient is not so weak, we assist to slowly climb to the main road and get a motorcycle or simply walk to the health centre (CHW, Female).*

The pathways within the neighbourhoods were not accessible by any automobile, not even a bicycle or motorcycle can easily use them.

Cognitive barriers

The data shows mixed attitudes towards modern and traditional medicine. Some household heads mentioned diseases which are only healed by herbs such as skin allergies commonly referred to as "*amahumane*", witchcraft, "*amarozi*", paralysis and joint pains, "*imitsi na rubagimpande*" among others:

> *We still trust traditional medicine can help; people take it and get healed. I know traditional medicine that I take and get healed depending on the diseases. I have health insurance but can't waste time going to the health centre when I know the disease needs traditional healing…. all the medicine is available in the swamps (Male, household head*

Some respondents were even more radical in their choices of traditional medicine:

> *I don't believe in modern medicine...one lady was paralyzed; she went to all health facilities in Kigali but did not get healed. She only got fine after taking traditional medicine…" (Female, household head)*

On the other hand, some respondents said they first visit health facilities to seek for diagnosis and later consult traditional healers for treatments. Nevertheless, we observed in the data an emerging belief that modern medicine treats disease faster and more efficiently than traditional medicine and thus give preference to visiting healthcare centres or to the CHWs.

Discussion

This study aimed to contribute knowledge on the limitations of accessing healthcare among residents of informal urban settlements in the context where the government established the pro-poor policies such as the establishment of the community-based health insurance scheme. The CBHI scheme is a financial protection mechanism which aims to address the exclusion of the most destitute people from accessing health services (Government of Rwanda, 2020). It is expected to play an essential role in establishing equity in accessing healthcare as described in the SGD 3 (United Nations, 2016; Klasen & Fleurbaey, 2018).

The study findings generally indicate that the status of healthcare access among informal urban dwellers in Kigali was optimistic. This is largely due to close proximity of health facilities, higher enrolment on the health insurance, trust of the modern medicine, and the availability of community health workers at the village level to complement services of health facilities. However, building on the concept of potential and realized healthcare access, the study area is a characteristic of potential demand but realised access is limited. The findings of this study align with the previous literature to confirm that availability and proximity of the health centres does not guarantee access (Elsey & Agarwal, 2016). Not even having health insurance subscription is enough for someone to access healthcare due to demanding for co-

payments for medical services and medicine, and these are sometimes very expensive for the urban poor (Devoe et al, 2007; Uwizeye et al., 2020).

In fact, the study indicated that several families could not access healthcare even in the context when they had a valid subscription to the CBHI scheme. Access to clinical consultation is guaranteed upon full payment of annual premiums and co-payment of the consultation fee. Individuals from households that pay medical premiums in instalments cannot access clinical consultations until full premium is paid. Further, the study argued that having a health facility closer to people did not contribute to services use without active health insurance especially when people cannot afford the required co-payments for clinical consultations or buy medicine from a private pharmacy in case the healthcare centre has exhausted its medicine stock, which was likely to happen. Earlier studies recommended to do extra work to alleviate these and other barriers to accessing healthcare for the deprived families as subscription to a health insurance scheme and accessing to care are far difference (DeVoe et al., 2007; Fenny et al., 2018). Also, failure to afford transport to health facilities during referral/transfers also appeared as a limitation to accessing healthcare as were discussed in earlier studies conducted in similar settings (Varela et al., 2019).

Similarly, long waiting time at the healthcare centre occasioned by insufficient number of the available health professionals discouraged people to seek care during the normal working hours. Therefore, they preferred to seek care only when they are seriously ill or in the evening hours which contributed to influx of people who need care at the same time, and the increased number challenged to the few healthcare givers. Although the distance to the healthcare facility may be short in informal urban settlements such as in Kigali, limited vehicular access impedes movement especially when one is too ill or requires an ambulance. Previous studies argue that such barrier potentially influence whether or not individuals attempt to access healthcare (Carrillo et al., 2011).

Further, the mixed beliefs and attitudes towards modern versus traditional medicine compromised seeking care at the health centre as people would choose traditional healers over modern medicine for some diseases. The belief that "*some diseases cannot be cured by modern medicine*", though it was less common, is likely to impede healthcare access as it was discussed in earlier studies (Andersen & Davidson, 2014; Banerjee et al., 2012; Gyasi et al., 2016).

The study showed that the theoretical limitations to healthcare access that are financial, structural and cognitive (Carrillo et al., 2011) are highly interconnected with structural and financial barriers taking a

strong hold. That is, one barrier is a cause and/or effect of the other, leading to inequalities in healthcare access. Affordability of the healthcare service, the nature of jobs and competing needs emerged as the most pressing factors in the context of Kigali's informal settlements. This finding is consistent with earlier studies indicating that payable services are more likely to exclude the urban poor (Nikuze et al., 2019; Uwizeye et al., 2020). The general low-income levels and the casual or irregular nature of jobs intensify poverty among most urban slum dwellers. Given many competing demands for the erratic incomes, individuals are plunged into a dilemma of choosing between paying for health services or other basic needs. This is consistent with the concept of the '*survival imperative* (Stajduhar et al., 2019) whereby people prioritize daily survival to healthcare access or act as "strategic managers" in negotiating their livelihood outcomes (Tincani, 2015). The more money one has, the more options available and the reverse might be true.

In addition, structural factors characterized by scarcity of medicine and limited healthcare staff are typical of supply side barriers (Huot et al., 2019) observed in informal urban settlements as in Kigali which stream from the healthcare providers and the healthcare system as a whole. Also, excessive waiting time is partly attributed to shortage of healthcare professionals and heavy workload of the few available staff (George et al., 2018) due to the large population size in informal urban settlements. Consequently, people resort to alternative choices such as untrained traditional healers and self-medication with their concomitant advent effects to their health outcomes (Anwar et al., 2015).

Our findings contend the interconnectedness of structural, financial and cognitive barriers in impacting healthcare access among the residents of informal urban settlements such as in Kigali, though not at the same level as we discussed earlier. For example, limited access to medicine (structural barrier) happened due to inability to co-pay the required fees (financial barrier) (DeVoe et al., 2007). or the health clinic had not received funds for the insured on time to restock enough medicine (structural and financial). Failure to get medicine encouraged people to think of alternative care such as unapproved herbs and self-medication. This may relate well to financial hardships since people have to divert their limited resources to purchase medicine from private pharmacies. Also, the consequence of self-medication puts people at a greater risk of wrong diagnosis and related effects such as prolonged illness.

Further, excessive waiting times (a structural barrier) limits healthcare access as people choose not to go to health facilities for fear of losing productive time (financial barrier) or choose to go during evening hours after work hours, which leads to overcrowding and overwhelming workload for the few available healthcare staff (structural barrier), thus compromising the quality of healthcare. It is no wonder that

some people, due to previous experiences have negative attitudes (cognitive barrier) to health facilities and tend towards self-medication or traditional medicine.

Strengths and limitations of the study

This study informs policy drivers on the status of healthcare access in the context of household and community deprivation in urban settings, existing barriers and the potential consequences for health and well-being of the population. It brings to book critical gaps in Rwanda's healthcare system which constitute healthcare access barriers to inform policy interventions towards equitable healthcare for all, and also facilitate rational decisions on servicing residents of the informal urban settlements in Kigali.

We acknowledge some limitations of the study, the main one being the failure to capture individuals did not attend to the health centre of visited the community health worker. The design of the study did not capture that valuable part of the topic, rather relied on the enrolment to the CBHI scheme, and the available data on those who attended the health centres and those who visited the community health workers. This limitation was mitigated through extending the collection of the qualitative data to different people working in the area of community health services who were potential to provide reliable data to answer the research questions. There sufficient confidence that results depict the general status of healthcare and reveal barriers to healthcare access potential to inform policy reforms on informal urban settlements and healthcare services delivery in urban areas.

Conclusion and recommendation

The study concludes that structural barriers, interwoven with financial barriers, leads to limitations in healthcare access among the residents of informal urban settlements in Kigali. The thoughts of long waiting hours, overcrowding and possibility of not finding medicine at the healthcare centre reduce the likelihood of healthcare access even when one can afford the health bills. This is critical for the residents of informal urban settings to achieve the universal access to healthcare amidst conflicting needs of the household survival.

The study recommends that the provision of the health facilities in close proximity should go with the allocation of the adequate number of healthcare personnel, medicine and equipment, aligning to the population size of the informal urban settlements. Equally important, residents in informal urban settlements need to be supported to have sustainable source of income, and sensitized to prioritize healthcare delivered by trained medical professionals. Further studies would quantify the socioeconomic impact of limited access to healthcare among the people living in informal urban settlements.

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Appendix 1

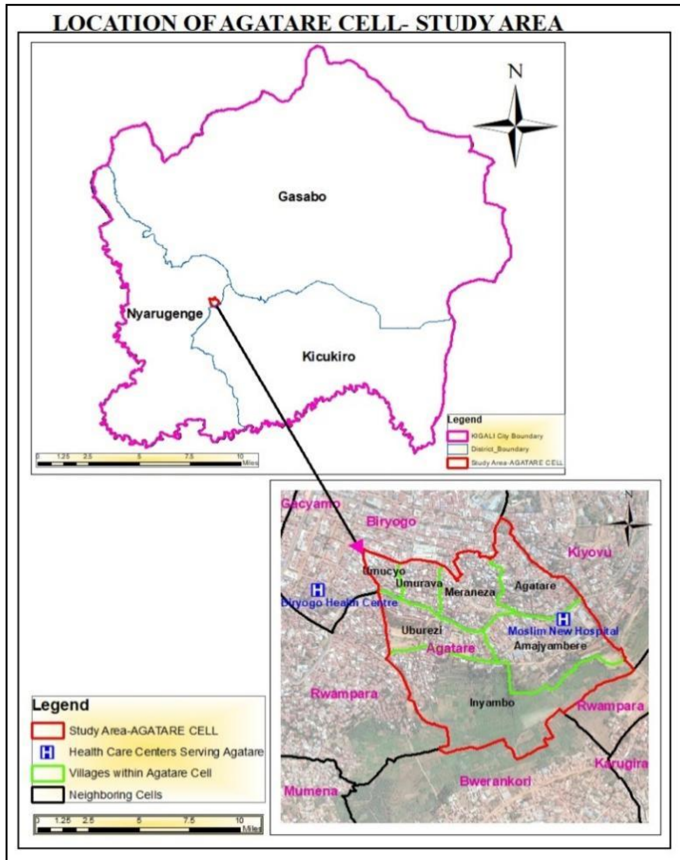

Figure 1: Map of Agatare cell in Nyarugenge district
Source: Author

Appendix 2: Foot paths connecting households in the study area

Figure 2: Foot paths connecting households in the study area
Credit: By the author, 2019