

Recommendations for improving access to healthcare for street-connected children and youth in Kenya: A qualitative study

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ARTICLE INFO

Keywords:

Street children
Access to healthcare
Kenya
Universal health coverage

ABSTRACT

Background: Street-connected children and youth (SCY) in Kenya have a high burden of disease and require access to healthcare that is responsive and sensitive to their needs and situation living and working on the streets. However, evidence suggests that SCY in Kenya are facing significant barriers to accessing healthcare, which may be impacting their health and well-being. Therefore, we sought to identify opportunities for ameliorating access to healthcare for SCY in Kenya from stakeholders including healthcare providers, SCY, policymakers, and community members.

Methods: This qualitative analysis focuses on a sub-set of data concerning the delivery of healthcare to SCY and recommendations to improve access to healthcare for this population. We interviewed 100 participants in focus group discussions and in-depth interviews across 5 counties in Kenya from May 2017 and September 2018. We conducted a thematic analysis situated in a conceptual framework for access to healthcare. Our results are presented in five major themes positioned in this conceptual framework's five dimensions of accessibility of care and five corresponding abilities of persons: approachability and ability to perceive the need for healthcare; acceptability of health services and ability to seek healthcare; availability and accommodation of health services and ability to reach healthcare; affordability and ability to pay for healthcare services; appropriateness of care and ability to engage as an empowered patient with the health system.

Results: Our results found three fundamental components of ameliorating access to healthcare for SCY in Kenya including: 1) the need for universal health coverage for SCY to alleviate barriers with respect to affordability, ability to pay, availability, and ability to reach; 2) the need to ensure that healthcare providers are trained and sensitized to provide care to SCY to improve acceptability; and 3) that multidisciplinary, holistic, and community-based approaches to healthcare for SCY are essential in order to adequately meet their distinct needs. **Conclusion:** SCY in Kenya urgently require access to quality healthcare given their substantial morbidities and mortality. Improving access to healthcare for SCY requires addressing a lack of affordability and an inability to pay. It also requires healthcare providers to feel supported and resourced to provide care to SCY to resolve issues of acceptability. Finally, given SCY's multitude of unmet needs, multidisciplinary and community-based approaches to care may be integral to improving short- and long-term health and well-being for SCY.

Abbreviations: SCY, Street-connected children and youth; FGDs, Focus group discussions; IDIs, In-depth interviews; UG, Uasin Gishu; AMPATH, Academic Model Providing Access to Healthcare; MTRH, Moi Teaching and Referral Hospital.

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<https://doi.org/10.1016/j.childyouth.2021.106302>

Received 25 November 2020; Received in revised form 23 May 2021; Accepted 13 November 2021

Available online 16 November 2021

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1. Introduction

Children and youth who find themselves spending a portion or majority of their time living and working on the streets in Kenya have poor health outcomes, including growth and development disparities (Ayaya & Esamai, 2001; Braitstein et al., 2013), mental health and substance use issues (Atwoli et al., 2014; Embleton et al., 2012, 2013; Omari et al., 2021), respiratory problems (Szkwarko et al., 2016), poor reproductive health outcomes (Wachira et al., 2016), and a high prevalence of HIV and sexually transmitted infections (Braitstein et al., 2019; Kaime-Atterhög et al., 2007; Shah et al., 2018; Winston et al., 2015). It is well documented, that street-connected children and youth (SCY), for whom the streets plays a central role in their everyday lives and social identities (Office of the United Nations High Commissioner for Human Rights, 2012), have substantially poorer physical and mental health outcomes in comparison to children and youth of the same age living in different care environments (Atwoli et al., 2014; Ayaya et al., 2021; Braitstein et al., 2013; Embleton et al., 2017; Omari et al., 2021). Furthermore, evidence demonstrates that SCY are dying prematurely due to preventable causes of death, and that their mortality is elevated in comparison to other children and youth in Kenya (Embleton et al., 2018; Kibel et al., 2020). One study found that the underlying cause of death for 60% of street-connected girls and young women and 26% of street-connected boys and young men in Eldoret was HIV and AIDS (Embleton et al., 2018), potentially suggesting a low uptake of and retention in HIV care for SCY, which may be indicative of barriers to accessing healthcare. Overall, the substantial morbidities and mortality experienced by SCY suggest that this marginalized population is underserved, and likely experience distinct and significant barriers to accessing healthcare.

SCY in Kenya face unique barriers to care that other low-income people of a similar age do not face. SCY experience considerable stigmatization and discrimination, and their devalued status in society limits their ability to access services, such as healthcare, in addition to the context of widespread poverty in which they survive (Gayapersad et al., 2020). Additionally, SCY are in many cases orphaned or abandoned and without parental care and support (Ayaya et al., 2021), they lack identification and legal status as minors, they may be completely homeless or precariously housed, and experience high levels of incarceration and several human rights contraventions. Coupled with social and health inequities related to poverty such as, having limited access to and opportunity for education, engaging in precarious low-income informal work, and lacking basic materials needs and experiencing homelessness (Embleton et al., 2020a; 2020b; Sorber et al., 2014), SCY face significant and distinctive barriers to care.

In Nakuru, street-connected boys have reported that the cost of medications is prohibitive when seeking care at public facilities and have discussed delaying seeking treatment until they have money or until the condition is severe (Kaime-Atterhög et al., 2007). Similarly, in other Kenyan cities, SCY have reported substantial difficulties accessing health care due to an inability to pay for services (Embleton et al., 2021). Research has also demonstrated that SCY experience negative patient-provider interactions, which the authors theorized was driven by healthcare providers' adverse emotional responses to SCY associated with the process of stigmatization, thereby contributing to inadequate health systems responsiveness (Embleton et al., 2021). Taken together, these findings illuminate that SCY face several barriers to accessing healthcare, and that the health system may not be adequately responsive to this population given their unique needs and circumstances of living and working on the streets. Yet, SCY urgently require access to healthcare that is responsive and sensitive to their needs and situation living and working on the streets given their high burden of disease.

Access to healthcare in Kenya occurs through public, private, and faith-based health facilities. Faith-based facilities are generally located in rural, remote, and underserved locations, while private facilities are typically located in urban affluent areas. Public facilities are organized

based on tiers of care that include community health services, primary health services, county referral services, and national referral services (Republic of Kenya, n.d.; World Health Organization, 2017). Two factors that influence an individual's ability to access to healthcare are their geographic location and the type of health services that are required. Within the public system, National Referral Hospitals (Level 6) and Country Referral Hospitals (Level 5) are located in urban areas and are able to provide specialized inpatient and outpatient services, and curative health services. Whereas sub-county (Level 4) community and primary health services (Level1-3) are typically located in rural locations and provide basic primary care, prevention, and health promotion services, and make referrals for more specialized care (Republic of Kenya, n.d.). Access to healthcare in Kenya is also determined by an individual's, economic circumstances, their ability to pay for services, and insurance coverage, regardless of the type of facility (public, private, or faith-based). Universal health coverage seeks to ensure that all people have access to the healthcare they need, including prevention, treatment, rehabilitation, and palliative care across an individual's life course, without enduring financial hardship (World Health Organization, 2021). Kenya has made a commitment to achieve universal health coverage by 2022 in alignment with Sustainable Development Goal 3.8; however, research has demonstrated significant gaps remain to achieve this goal (Barasa, Nguhiu, et al., 2018). Universal health coverage in Kenya is limited, with only 15% of the Kenyan population covered by the National Health Insurance Fund (NHIF) (Owino et al., 2020). The NHIF in Kenya is a State Parastatal that provides medical insurance to members and dependents. NHIF members pay a monthly premium, which ensures health coverage at NHIF accredited facilities (public and private) (Abuya et al., 2015; Munge et al., 2018). Kenyans are eligible for NHIF if they are over the age of 18 years and have a monthly income of more than 1000 Kenyan Shillings (Ksh) (NHIF, 2020). This eligibility criteria excludes the majority of SCY, many of whom are less than 18 years of age, are often not living with or in the care of a parent(s)/guardian(s), and have no fixed income (Sorber et al., 2014).

Access to healthcare has been conceptualized by Levesque et al (2013) as *"the possibility to identify healthcare needs, to seek healthcare services, to reach the healthcare resources, to obtain or use health care services, and to actually be offered services appropriate to the needs for care."* (Levesque et al., 2013). Access to healthcare can be influenced by differences in the perceptions of needs for care, healthcare seeking practices, in reaching, delaying and obtaining care, and type of services received. Levesque et al (2013) propose a conceptual framework for access to healthcare that situates access around five dimensions of accessibility of health services (approachability, acceptability, availability and accommodation, affordability and appropriateness) and five corresponding abilities of persons (ability to perceive, ability to seek, ability to reach, ability to pay, and ability to engage), which interact to generate access. The framework takes a person-centered approach to access and considers the process that an individual undergoes to seek and receive care as the central factor that facilitates access (Levesque et al., 2013).

As a result of SCY's substantial morbidities (Atwoli et al., 2014; Ayaya & Esamai, 2001; Braitstein et al., 2019; Embleton et al., 2012; Kaime-Atterhög et al., 2007; Winston et al., 2015), experiences of stigma and discrimination (Gayapersad et al., 2020), and a lack of health systems responsiveness and other social and economic inequities (Embleton et al., 2020a; 2021; Kaime-Atterhög et al., 2007; Sorber et al., 2014) that create barriers to SCY accessing healthcare, it is vital to explore and identify patient-centered approaches to improve access to healthcare for this underserved population. To date, very little research has explored how to improve access to healthcare services specifically for SCY in Kenya, and few interventions have been tested to improve access to and delivery of health services for this group (Kibel et al., 2019; Shah et al., 2018). Improving access to healthcare and health systems responsiveness for SCY will require multiple approaches with input from patients, families, communities, policymakers, and healthcare providers and

managers, thereby taking a person-centered approach (Alpert et al., 2020; World Health Organization (WHO), 2015). Therefore, we engaged healthcare providers, SCY, community members, and policymakers in focus group discussions and in-depth interviews to identify opportunities for ameliorating person-centered access to healthcare for SCY in Kenya. We situate our findings within Levesque et al's (2013) conceptual framework for access to healthcare.

2. Material and methods

2.1. Study design

From May 2017 to September 2018, we conducted a qualitative study using multiple methods including focus group discussions (FGDs), in-depth interviews (IDIs), archival review of newspaper articles, and analysis of a government policy document. The study sought to explore and describe the public perceptions of, and proposed and existing responses to, the issue of SCY in Kenya. The present analysis seeks to explore and identify recommendations to improve access to healthcare for SCY in Kenya and is restricted to a sub-set of data from the FGDs and IDIs. In-depth details regarding the choice of qualitative methods, and the study's design and methodology have been reported elsewhere (anonymised for peer review).

2.2. Study setting

Eldoret, the administrative capital of Uasin Gishu (UG) County, was the primary study site. Additional study sites included: Trans-Nzoia, Bungoma, Kisumu, and Nakuru, where we interviewed participants in the respective capital of each county. These study sites were selected given that SCY are known to live and work in these towns in Kenya (Braitstein et al., 2019; Goldblatt et al., 2015; Kaime-Atterhög & Ahlberg, 2008; Save the Children, 2012). Eldoret, the primary study site, is home to Moi University, Moi Teaching and Referral Hospital (MTRH), and the Academic Model Providing Access to Healthcare (AMPATH), a long-standing partnership between Moi University, MTRH, and a consortium of universities from North America (Einterz et al., 2007). Over 15 years, the study investigators have built a participatory and rights-based programme of research with SCY in this region of Kenya through AMPATH. The investigators chose the study sites given their existing relationships and research infrastructure in this setting, the significant number of SCY in this region of Kenya, and due to the substantial health disparities and barriers to care that SCY experience in these settings that have been identified.

2.3. Study participants, recruitment and enrolment

In Uasin Gishu we sought to engage a wide range of social actors in this study including the County Children's Coordinator (government official who coordinates Department of Children's Services activities at the county-level), Children's Officers (government official for Department of Children's Services at the county-level), police officers, community leaders (Chiefs and Elders), vendors, general community members, stakeholders, parents of SCY, former and current SCY, peer navigators (young people with lived experience of street-involvement in Kenya who assist SCY to navigate accessing healthcare) (Shah et al., 2018), and healthcare providers at MTRH and AMPATH. In Kisumu, Kitale, Nakuru and Bungoma, we engaged Children's Officers, police officers, and SCY.

We purposively sampled and recruited a total of 100 participants. In UG County we contacted community leaders, vendors, police officers, general community residents, parents of SCY and stakeholders in person or by phone to introduce the researchers, explain the purpose of the study and invite them to voluntarily participate. We contacted government officials initially with a formal letter introducing the researchers and informing them of the purpose of the study and followed up in

person. We invited social workers, clinical officers, nurses, and HIV testing and counselling practitioners from MTRH and AMPATH through our established networks and contacts.

In all counties SCY aged 15–24 were purposively sampled in locations called "bases/barracks" where they are known to live, work, and congregate. Study sensitization and outreach occurred at each site, where the purpose of the study was explained and SCY were invited to voluntarily participate. In UG, SCY were invited to the Rafiki Centre for Excellence in Adolescent Health at MTRH to undergo enrolment and consent. In other counties, SCY were enrolled and gave consent in street venues. No prospective participants declined to participate or withdrew from the study after the data were collected.

2.4. Data generation

We conducted 41 in-depth interviews and seven FGDs. The breakdown of participants and type of interview is presented in Table 1. Data were collected at various places depending on the participants, including the Rafiki Center of Excellence in Adolescent Health (SCY), or in a location of mutual agreement (e.g., their office for those with offices, in a hotel or quiet place for others). A team of eight trained, mixed gender interviewers of varying ages (anonymised) conducted FGDs and IDIs in either English or Swahili. In total, 22 interviews were conducted in English and 26 were conducted in either Swahili or a mix of Swahili and English. On average, FGDs took one and a half hours and IDIs 40 min. [Anonymised] are faculty members holding Doctoral degrees from recognized institutions, while [anonymized] holds an undergraduate degree in a relevant field. Other interviewers were working as research assistants and had prior experience in conducting and facilitating qualitative interviews, all holding at least an undergraduate degree. No repeat interviews were carried out.

FGDs and IDIs used an interview guide that asked participants about

Table 1
Participants, interviews, and location.

Social Actors	# of interviews	Location	Gender of Interviewees
Community leaders	4	Uasin Gishu	4 Men
County Children's Coordinators	1	Uasin Gishu	1 Man
Police Officers	6	Uasin Gishu, Nakuru Trans-Nzoia, Kisumu, Bungoma	3 Women, 3 Men
Children's Officer(s)	6	Uasin Gishu, Nakuru Trans-Nzoia, Kisumu, Bungoma	2 Women, 4 Men
Vendors	2	Uasin Gishu	1 Woman, 1 Man
General Community	3	Uasin Gishu	1 Woman, 2 Men
CBO / Stakeholders & SCY Advocates	6	Uasin Gishu	2 Women, 4 Men
Peer Navigators	2	Uasin Gishu	1 Woman, 1 Man
Parents of Street children	1	Uasin Gishu	1 Woman
Former Street-connected youth	3	Uasin Gishu	2 Women, 1 Man
Street-connected youth	7	Uasin Gishu, Kisumu, Trans-Nzoia	5 Women, 2 Men
Total In-depth Interviews	41		18 women, 23 men
AMPATH Clinicians	FGD	Uasin Gishu	2 women, 3 men
AMPATH Nurses, Social Work, Counsellors	FGD	Uasin Gishu	4 Women, 2 Men
MTRH Clinicians	FGD	Uasin Gishu	6 Men
MTRH Nurses	FGD	Uasin Gishu	6 Women
SCY Males FGD	FGD	Uasin Gishu	12 men
SCY Females FGD	FGD	Uasin Gishu	12 women
Mixed gender SCY Nakuru	FGD	Nakuru	6 Young women, 6 Young men
Total Number of FGDs	7		30 women, 29 men

their general perceptions of the population, their experiences interacting with SCY, their perceptions of their needs, and their thoughts on SCY accessing healthcare, how they are treated, and what kind of healthcare services and care are important and feasible for the population. For healthcare providers, additional questions were included in relation to the provision of healthcare and improving care for SCY. A separate interview guide was developed for SCY, which asked about their experiences and interactions with the community, their needs, and their ability to access healthcare, what would improve access, and how they are treated when coming for care. The interview guides have been published elsewhere (Embleton et al., 2020a). Minimal field notes were collected and were used to inform analysis but were not themselves coded or analyzed.

2.5. Qualitative data analysis

We developed a codebook in an iterative manner after conducting an in-depth reading of our data. We held multiple collaborative analytic working group meetings, whereby we developed a series of preliminary codes that captured SCY health needs, navigating the healthcare system, healthcare coverage and fees, and recommendations for improving access to healthcare for SCY. We developed the final codebook by repeatedly testing its validity and comprehensiveness through test-coding transcripts. Transcripts were coded by four of the authors (anonymised) and compared for consistency. In a series of interpretive meetings, we documented analytic notes and annotations and further defined and refined themes. We further analyzed and positioned our findings within Levesque et al's (2013) person-centered conceptual framework for access to healthcare. We situated participants' recommendations to improve SCY's access to healthcare in the framework's five dimensions of accessibility of care and five corresponding abilities of persons which interact to generate access: approachability and ability to perceive; acceptability and ability to seek; availability and accommodation and ability to reach; affordability and ability to pay; appropriateness and ability to engage (Levesque et al., 2013). Approachability refers to the requirement that information about health services is available and accessible, services can be reached, and have an impact on the individuals in need. When services are approachable, an individual has to have the ability to perceive the need for care. Acceptability refers to the social and cultural appropriateness and factors that influence whether individuals accept the health services. Correspondingly, the ability to seek healthcare refers to capacity and the autonomy to choose healthcare and be knowledgeable about options. Availability and accommodation mean that healthcare providers and services can be reached and in a timely manner. This requires that health services are physically available with adequate resources and capacity to offer services. Geography (e.g., rural, urban, etc.), characteristics of facilities (e.g., distribution, building accessibility, etc.), services and health systems (e.g., decentralization, tiers of care, type of services), and providers (e.g., presence of qualified providers) influence the dimension of availability and accommodation. Ability to reach refers to an individual's personal mobility, the availability of transportation, the ability to leave work or income generating activities to reach care, and the knowledge about how to physically reach healthcare facilities and providers. Affordability relates to the economic circumstances that influence whether an individual can spend resources and time to access and use services. Correspondingly, ability to pay refers to an individual's ability to pay for services without enduring financial hardship. Appropriateness represents the fit between client needs and services, and encompasses the timeliness, and the quality of care and services provided. Lastly, the ability to engage in healthcare refers to a patient's ability to participate and be involved in the decision-making process regarding their care (Levesque et al., 2013). Data were managed and analyzed using NVivo 11.

2.6. Ethical considerations

This study received ethics approval from MTRH Institutional Research Ethics Committee and University of Toronto Research Ethics Board. Written informed consent was obtained from all participants. The study received a waiver of parental consent for minors for SCY from both of the research ethics boards. Participants were made aware that their interviews would be audio-recorded; nine participants declined to be audio-recorded but agreed to be interviewed and gave the interviewer permission to take notes. Community participants and SCY were compensated for their time with 200 Ksh (~US\$2.00) and government officials 1000 Ksh (~ \$US10.00).

2.7. Results

In total the study included 100 participants, 48 women and 52 men. The median age of community members interviewed was 42 years and SCY 16 years. Using the conceptual framework of access to healthcare, we present our findings in five major themes: approachability and ability to perceive the need for healthcare; acceptability of health services and ability to seek healthcare; availability and accommodation of health services and ability to reach healthcare; affordability and ability to pay for healthcare services; appropriateness of care and ability to engage as an empowered patient with the health system. Fig. 1 situates key recommendations for improving access to healthcare for SCY from participants in Levesque et al's (2013) conceptual framework for access to healthcare.

2.8. Approachability & ability to perceive the need for healthcare

The ability of individuals with health needs to know that services exist, can be reached, and that services are able to have an impact on the health of a person are components of approachability within the conceptual framework of access to healthcare (Levesque et al., 2013). One method consistently suggested by most healthcare providers to augment approachability of health services for SCY was to conduct medical outreach as explained by a nurse:

I think there should be more medical camps for them, because when you get a street child coming to the hospital, trust me they are very sick. Most of them don't seek medical attention until it's maybe too late. So, you see the way we go to the communities to do the health camps, we could also take them [health camps] to the streets for the purpose of preventions of some of these conditions.
(FGD, Nurses)

Stakeholders working with SCY concurred, and in response to asking, 'where should SCY go to seek healthcare?', suggested that providers should go to where SCY are living and working in mobile clinics:

Of course, hospitals and clinics, this is already a rural area, but I have never seen a mobile clinic coming to assist them. There are those who want to get circumcised, and they don't get such services. Mobile clinics should go where these children are.
(IDI, Stakeholder and Religious Leader)

The idea of medical outreach extended to facilitating health promotion and education activities in locations where SCY live and work as described by a clinician:

One, is health education and it should be held where they are found and not in hospitals, medical practitioners can organize and even maybe to have lunch with them to attract them and then people talk to them and they will become responsive otherwise it will be difficult to find them. We need to find a situation in which we come out of our offices comfort and go to where they are, provide them with incentives that will lure them to come and get those health services.

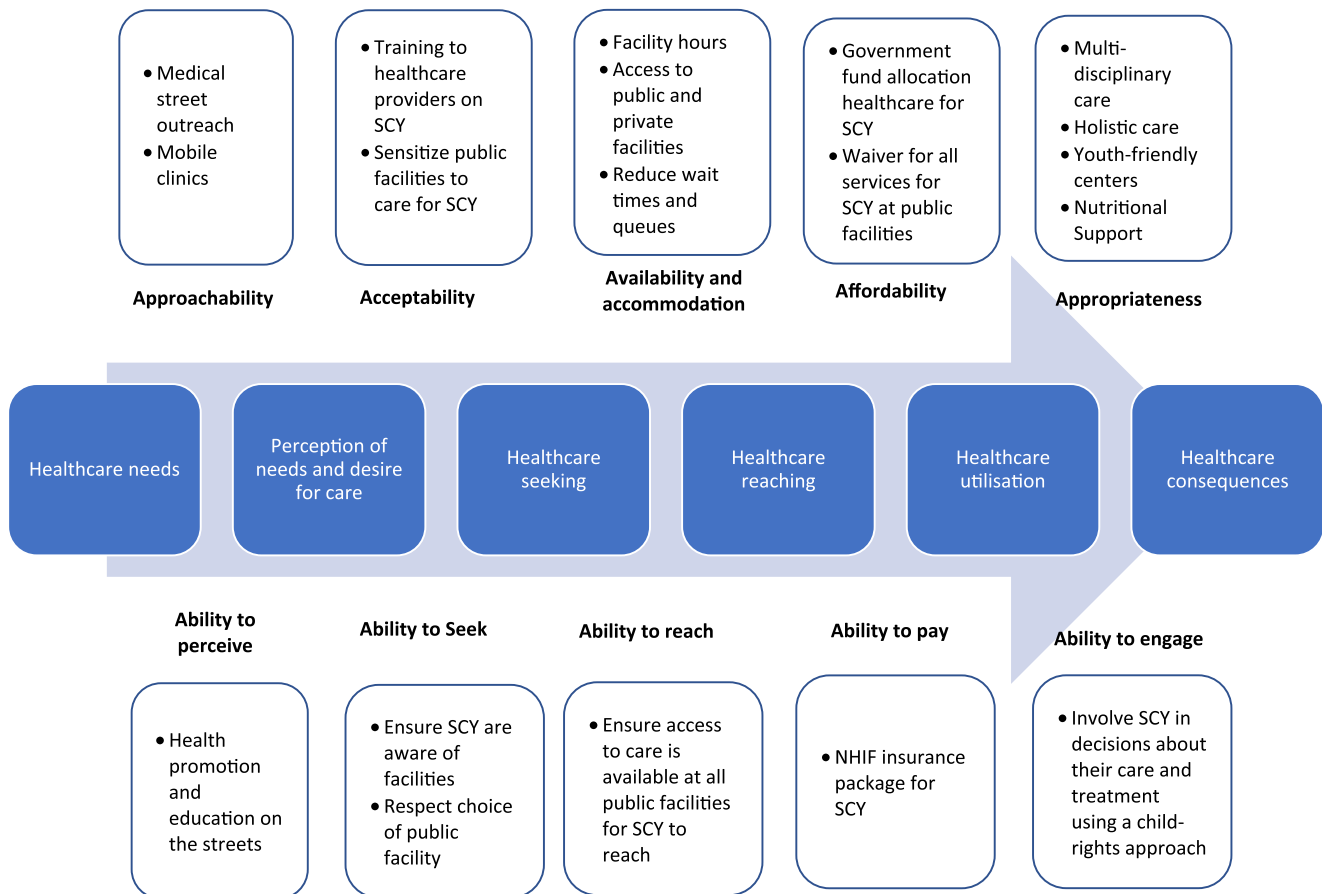


Fig. 1. Conceptual framework of access to healthcare integrating recommendations to improve access for SCY in Kenya.

Organize a health talk and provide maybe lunch then talk to them, you will see that after some days they will follow you to the facility. (FGD, Clinicians)

Advancing the ability of SCY to perceive the need for care was an important component of providing health prevention activities on the streets as explained by a nurse: “As a hospital we should organize and go to the street and give them health talks and that way we will prevent a lot of illnesses. Teach them signs and symptoms so that they seek treatment fast.”

Medical outreach and health promotion and education activities may improve health literacy and beliefs, and trust between SCY and healthcare providers, thereby potentially ameliorating approachability, the perceived need for care, and health seeking practices among SCY at facilities.

2.9. Acceptability of health services & ability to seek healthcare

The acceptability of healthcare services and providers are influenced by social and cultural factors and norms and professional values (Levesque et al., 2013). Healthcare providers felt that they were not adequately prepared to interact with and treat SCY, and therefore the services may be inequitable or unacceptable to SCY. To rectify this, one clinician stated: ‘we need to change our attitude when it comes approaching the street kids.’ Many healthcare providers mentioned that they needed to receive additional training and sensitization about the lives and health needs of SCY as explained by one group of Nurses, Counsellors, and Social Workers: “The healthcare providers need to be trained on how to handle them and have that positivity towards them because we are also human beings.”

If providers are better equipped to understand SCY’s unique needs and are sensitive to the circumstances of this vulnerable population, this

may vastly improve the acceptability of care. Nurses, Counsellors, and Social Workers also put forth ideas for additional training and sensitization which included acknowledging the need to improve communication between SCY and providers: “Also, [HIV] testing requires dialogue between the client and the counselor, so you need to be trained their language because they have their own which we don’t understand.”

The concept of the need for sensitization to improve access to healthcare for SCY expanded beyond only training healthcare providers but to sensitize health facilities as a whole to work with SCY to facilitate access to care. As described by a clinician, there is a need to ensure all public healthcare facilities are equipped and trained to provide care to SCY: “We need to do sensitization in our hospitals because it’s only the Referral Hospital which offer these services [referring to family planning], but if they go to other places, they are chased away and told to go to the Referral Hospital.” When all public facilities are capable and ready to provide healthcare to SCY it will assist in ensuring SCY have the ability to seek care and the option to choose which public facility to receive care at. There was also a recognition by providers about the need to improve patient-centered care and discuss healthcare options with SCY to facilitate improving access, as stated by a nurse:

When we talk of them being aware of the options that they have, even when accessing health, they are opening up their mental capacity. They may have access to rehabilitation services and there should be education programs even within the hospitals so that they are able to help themselves. (FGD, Nurses)

SCY may be unaware of the services available to them in some settings, and therefore are unable to seek out care. As this nurse suggests, health promotion and educational programs within the health system

should aim to raise knowledge and awareness among SCY to ensure they are able to make appropriate choices and are able to seek care. When SCY are knowledgeable about their care options and know what to ask for and how, it may improve their ability to access healthcare. However, raising knowledge and awareness to improve SCY's ability to seek care will be insufficient to generate access if other components of access are not in place or addressed.

2.10. Availability and accommodation of health services & ability to reach healthcare

The availability of health services requires that they can be reached in a timely manner and that resources are sufficient in the facility to provide care (Levesque et al., 2013). All participants agreed that SCY have a right to access care at public facilities as described by a Children's Officer "yes, it is run [referring to a public hospital] by the government and it is their right [to access care]". The ability to reach, which includes personal mobility, availability of transportation, flexibility to leave work, and knowledge of health facilities (Levesque et al., 2013), may be constrained for some SCY. Additionally, the geographic location of some facilities may present an additional barrier. In some locations, SCY primarily access Referral hospitals, and as one clinician explained they need to be able to access all public facilities which may be in proximity to them: "This is a referral hospital, for a street child to locate his way may be a challenge, but the other facility is close to them so they should be going there."

Some participants suggested that SCY should be covered by the government to access care anywhere as a vulnerable population, including private facilities, as explained by one group of nurses:

Moderator: Where else should they be able to get care?

Participant one: Anywhere.

Moderator: Even private?

Participant one: Even private! They should, because maybe if an accident happens and the nearest hospital is a private one, they should be able to have emergency care and then maybe transferred to a public one. Access to emergency care everywhere.

Participant three: The government should give that provision of street children accessing care because this is a vulnerable group. (FGD, Nurses)

Accommodating the specific needs of SCY as a marginalized and disadvantaged population was discussed by a variety of participants. This included the need to consider clinic hours at specialized youth-friendly centers:

If they have their own clinic, it should be a 24-hour clinic, there was one that came here [adolescent clinic] after being stabbed and the place was not open, and I found him lying there almost the whole day and I took the initiative of talking to my colleagues in casualty to assist him because he was really suffering, and this place was closed for a week. They get hurt at any time.

(FGD, Nurses, Counsellors, and Social Workers)

Given SCY's stigmatized and marginalized status in society in Kenya, it was suggested by some participants that SCY should not queue for care and be given priority for treatment when accessing care:

They should be given first priority because when you tell them to queue, they will think that they will be asked to pay something. If they are given priority, they will even encourage others to go for treatment. These people get ignored a lot... They should not queue, when you see them at the hospital know that they are in so much pain, treat them and allow them to go to rest. If they queue with others, they will feel they are the odd ones so they will just leave. They also fear because they hear that everything at the hospital is just money but if they are given the first priority, they will be okay. (IDI, Vendor)

SCY themselves agreed with this suggestion as they can get frustrated waiting for care as stated by one street-connected young man: "It would be better if we were treated as soon as we arrive so that we don't cross with others. They take us in rounds." Reducing waiting times and queues for SCY, where they may experience stigmatization and discrimination by others, may improve access to care for this vulnerable population.

2.11. Affordability & ability to pay for healthcare services

Access to healthcare requires that people have the economic capacity to afford healthcare and that services are affordable (Levesque et al., 2013). In Kenya, public facilities offer some free outpatient services, but typically in-patient care, laboratory and radiology diagnostic services, and drug prescriptions are fee-for-service healthcare. There was consensus among participants that SCY should not be denied healthcare due to an inability to pay, as explained by one Children's Officer: "They have the right to good health and deserve healthcare. Not everyone can afford health services, we must not deny services because of the inability to pay for services. We are all human beings; we all deserve good health."

The majority of participants stated that healthcare services for SCY should be free. Two approaches to providing free healthcare to SCY were recommended including a National Health Insurance Fund (NHIF) package and a system to waive fees at public facilities for SCY to generate access. The inclusion of SCY in a special NHIF package was suggested by healthcare providers and policymakers:

There is the government initiative of NHIF, we should create a small package of taking care of their health needs that they can be able to access. It should be a social responsibility for NHIF, I am sure they are making profit.

(FGD, Clinicians)

Street children should have a universal healthcare, they should be covered by even NHIF without discrimination, the only problem would be getting their background details which would be required for registration. Before they are even registered, we should have the health facilities treating them without discrimination and give them universal service.

(IDI, Children's Officer)

While some participants suggested that the government should provide a medical cover, such as NHIF for SCY, others disagreed citing the challenges with registration and identification, and suggested in lieu that the government waive medical bills for SCY:

I will have a contrary opinion, you have to be over 18 plus other criteria to get an identity card, majority of them will be locked out without that crucial document. So, the government should waiver any medical bill for them whenever they go to the hospital. Let it be a government policy, no matter the extent of the treatment needed.

(FGD, Clinicians)

Several community members agreed that the government should pay for SCY's healthcare services. As a local vendor explained: "They should not be charged for laboratory tests; the government should pay for their services." This extended to coverage for prescriptions as recommended by a community leader: "They should identify the street children and give them free medication. Let the government take care of that."

It was also recommended that the government should allocate special funding for the provision of healthcare services for SCY at public hospitals. Children's Officers from two counties supported the use of funds for the provision of free healthcare to SCY; however, they cited the need for the National government to allocate funds to the matter:

County government need to be given mandate, national government need to set aside funds, county to provide facilities.

(IDI, Children's Officer)

Programs need to be feasible, sustainable. Like for health, we need semi-autonomous funds to address street children health needs at the

hospital. County and national government and donors can provide the funding.
(IDI, Children's Officer)

2.12. Appropriateness of care & ability to engage as an empowered patient with the health system

The fit between services and patient needs, the timeliness of care, the quality of assessment of health problems and determining treatment needs, and the technical and interpersonal quality of the services provided constitutes appropriateness within the conceptual framework of access to healthcare (Levesque et al., 2013). Many participants discussed that SCY need specialized care and services, given the magnitude of their health and psychosocial issues. In order to fully meet the patient's needs, a multidisciplinary approach to care for SCY is needed as stated by a clinician:

If they come to me, I would feel challenged, because this is a kid coming with multiple health issues, because to be medically fit you have to be well spiritually, physically and mentally well. Most of them come with injuries and then you realize they also need to be dewormed, they need nutrition intervention, and [HIV] counseling and testing. You can't meet all their needs at one point so it's a challenge, it needs a follow up and multi-disciplinary approach.
(FGD, Clinicians)

Most healthcare provider participants concurred that a holistic approach to care is required for SCY, involving a social worker and psychological counselor, and that care for SCY should not stop at treating one physical ailment, but should work towards addressing 'upstream' issues and seek to assist them in transitioning from the streets as described by one nurse:

When they come to the hospitals, we should enroll them in different programs and involve the social worker and psychological counselor and try to talk to them in order to get them off the streets and find them a place to go to. Don't just see them and leave them to go back to where they were.
(FGD, Nurses)

Integration of comprehensive health services into youth-friendly health centers was suggested as a means to provide integrated care for SCY:

We used to have centers called youth friendly centers, I don't know what happened to them, they were under some NGO. If we want to help these guys we should come up with such centers, it was a center for them to integrate and the got HIV care also.
(FGD, Clinicians)

The specialized and specific needs of SCY as patients was discussed at length among participants. A number of health needs specific to SCY were identified by participants including substance use and mental health, disabilities, injuries, infectious diseases, sexual and reproductive health, and HIV as explained by two participants:

Yes, rehabilitation from drugs, HIV program for them and they also need counseling.

Family planning.

Emergency treatment.

Psychiatric because most of them are drug addicts, which cause psychotic issues in them. They also need a counselor to avoid further drug addiction.

(FGD, Clinicians)

Reproductive health and services. Also, they have a lot of respiratory issues due to smoking, sleeping next to a burning tire, TB due to HIV or living with someone who has TB. Skin diseases and traumatic

wounds like cuts. But I have seen more dying out of reproductive issues because most of them die due to HIV complications.
(IDI, Stakeholder)

The fit between services and client needs also included the need for additional nutritional support for SCY who are in hospital as explained by a former SCY:

Medical services and be concerned with nutrition, treatment, basic health education and things like that. These are children who are used to eating from the bins and the food may have been there for even three days. In hospitals they can be given things like milk powder and flour to make porridge because I believe the dirty food that they eat affects their health.
(IDI, Former SCY)

3. Discussion

Our findings have highlighted a number of avenues for improving access to healthcare for SCY in Kenya situated in Levesque et al's (2013) patient-centered conceptual framework for access to healthcare (Levesque et al., 2013), which have been suggested by local healthcare providers, policymakers, stakeholders, SCY, and other community members. The results of this analysis demonstrates three fundamental components of ameliorating access to healthcare for SCY in Kenya including: the need for universal health coverage for SCY to alleviate barriers with respect to affordability, ability to pay, availability, and ability to reach; the need to ensure that healthcare providers and health facilities as a whole are trained and sensitized to provide care to SCY to improve acceptability; and third, that multidisciplinary, holistic, youth-friendly, and community-based approaches to healthcare for SCY are essential in order to adequately meet their distinct needs.

Participants in our study unanimously reported that SCY have a right to access healthcare at all public facilities and that government funds should be allocated for healthcare for SCY. Yet, SCY face significant barriers to accessing healthcare at public facilities, including an inability to pay for services (Kaime-Atterhög et al., 2007). It is highly likely that SCY, a marginalized and impoverished population, are being left behind and not covered in many of Kenya's universal health coverage initiatives. Kenya has set a goal to achieve universal health coverage by 2022, to ensure all citizens of the country have access to healthcare services without suffering financially (Barasa, Nguhiu, et al., 2018; World Health Organization, 2010). In Kenya, government allocation of funds to the health sector is limited; however, Barasa et al (2018) found that health coverage for preventative and curative healthcare has increased from 2003 to 2017. Despite this, the authors found that the distribution for health service coverage for prevention interventions was inequitable (pro-rich), with the exception of condom use (pro-poor) (Barasa, Nguhiu, et al., 2018). Likewise, Keats et al (2018) found the coverage for reproductive, maternal, newborn, child, and adolescent health interventions were found to be pro-rich, leaving the poorest 20% of the population behind (Keats et al., 2018). Health insurance coverage in Kenya is approximately 19%, with only 15–16% of citizens being covered by NHIF (Barasa, Rogo, et al., 2018; Owino et al., 2020). Individuals in the highest wealth quintile are 12 times more likely to be covered than those in the poorest quintile, demonstrating vast inequities in health insurance coverage (Kazungu & Barasa, 2017). Those in the poorest quintiles, who often carry a disproportionate burden of health morbidities, such as SCY (Woan et al., 2013), are populations who would benefit the most from universal health coverage and health insurance. In order for SCY and other impoverished populations to benefit from universal health coverage in Kenya, a significant change in health financing and health sector reforms is needed (Barasa, Nguhiu, et al., 2018). For extremely vulnerable child and adolescent populations, such as SCY, who require protection under the Convention of the Rights of the Child (General Comment No. 21 (2017) on Children in Street Situations, 2017;

Convention on the Rights of the Child, 1990), special provisions should be made in all public facilities to ensure they are able to access healthcare, that they are eligible for NHIF without incurring prohibitive member fees, and that their rights are upheld.

Once SCY are able to freely access healthcare, it is imperative that for care to be acceptable to SCY, healthcare providers need to be trained to work with this population and facilities need to be sensitized to provide services to this underserved group. SCY are highly stigmatized and discriminated against in Kenya (Gayapersad et al., 2020), and this extends into the health system (Embleton et al., 2021). Healthcare providers in our study felt they required a change in attitude and additional training on working with SCY to be competent. Other healthcare providers in Kenya have reported lacking competencies when working with youth populations to provide adolescent sexual and reproductive healthcare, and encounter specific challenges regarding counselling and interpersonal communication with this age group (Godia et al., 2013). Training healthcare providers specifically in adolescent care was part of the updated 2015 Kenya National Adolescent Sexual and Reproductive Health Policy (Republic of Kenya, 2015), but it is unclear if this policy has been widely implemented and evaluated. Providing additional comprehensive training in adolescent care for marginalized populations, particularly with respect to issues such as adolescent sexual and reproductive health and substance use, as well as communication and empathy training to healthcare providers may help rectify issues of competency and communication, and achieve acceptability, and thereby improve access. Specifically, empathy training may support healthcare providers to improve patient outcomes when working with marginalized and youth populations, such as SCY. Empathy training, including experiential, didactic, and skills training has been shown to be effective at improving healthcare provider empathy (van Berkhout & Malouff, 2016). Given that evidence has found that adverse emotions and a lack of empathy and compassion influenced negative interactions between SCY and healthcare providers (Embleton et al., 2021), increasing empathy through training may be an effective avenue to increase acceptability and improve access.

Finally, SCY require a multidisciplinary, holistic, youth-friendly, and community-based approaches to healthcare in order to meet their needs and improve access. Providers suggested the need for medical outreach activities and building relationships with the street community by going to where they live and work to improve approachability and access to care. These community-based approaches should be integrated into a multidisciplinary and holistic model of care for marginalized adolescents and youth. A multidisciplinary and holistic model of care should incorporate all aspects of adolescent physical, mental and social well-being. SCY in Kenya have a high prevalence of post-traumatic events and post-traumatic stress disorder (Atwoli et al., 2014; Omari et al., 2021) and adverse childhood experiences are linked to short- and long-term poor physical and mental health outcomes (Oral et al., 2016). As part of a multidisciplinary and holistic model of care, SCY would likely benefit from trauma-informed care, which involves screening, validation and recognition of traumatic events, coping strategies, understanding the effects of trauma, patient-centered care, emphasis on emotional safety, and effective treatments (Oral et al., 2016; Roberts et al., 2019). Models of trauma-informed care should be culturally adapted, piloted, and tested for their effectiveness with SCY in public and youth-friendly health facilities in Kenya, which may improve the fit between services and client needs for SCY when accessing healthcare.

Strengths of this study include engaging a wide range of perspectives on SCY's access to healthcare from local healthcare providers, policy makers, stakeholders, other community members and SCY. This likely increases the contextual and 'real world' relevance of the recommendations provided. Our analysis was situated in a conceptual framework of access to healthcare, making it appropriate and applicable to addressing healthcare access for SCY. Despite these strengths, our findings may not be generalizable to all counties in Kenya or the situation of SCY in other low and middle-income countries. Additionally, we

were only able to interview healthcare providers in one National Referral Hospital and did not elicit the views of healthcare providers across counties and tiers of health facilities, whom may have made different recommendations. Finally, recommendations regarding the ability of SCY to engage in care, which includes the participation and involvement of the client in decision-making and treatment decisions, was not discussed by participants, including SCY. Our interview guide did not explicitly ask questions in relation to each domain in the conceptual framework for access to healthcare and asked generally about access to care. However, we recommend that SCY be involved in decision-making regarding their healthcare and treatment using a child-rights approach and to uphold their right to be heard (General Comment No. 21 (2017) on Children in Street Situations, 2017).

4. Conclusion

SCY in Kenya urgently require access to quality healthcare given their substantial morbidities and mortality. Improving access to healthcare for this population requires reducing barriers to care, such as a lack of affordability and an inability to pay and ensuring SCY are captured in universal health coverage initiatives in Kenya. Providing ongoing adolescent specific and empathy training healthcare providers may resolve issues of acceptability and ultimately improve patient-centered access to healthcare. Finally, addressing SCY's multitude of needs through a multidisciplinary, holistic, and community-based approaches to care may have important potential for improving their short- and long-term health and well-being.

5. Ethics approval and consent to participate

This study received ethics approval from MTRH Institutional Research Ethics Committee and University of Toronto Research Ethics Board. The study received a waiver of parental consent for minors. Written informed consent was obtained from all participants. Participants were made aware that their interviews would be audio-recorded; nine participants declined to be audio-recorded but agreed to be interviewed and gave the interviewer permission to take notes. Community participants and SCY were compensated for their time with 200 Ksh (~US\$2.00) and government officials 1000 Ksh (~ \$US10.00).

6. Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Funding

This research was funded in part by the Canadian Institutes of Health Research (CIHR), Institute of Public and Population Health, in support of author P. Braitstein, who holds the Research Chair of Applied Public Health (2014–2019). It was also supported by the CIHR Component 1 HIV Implementation Science grant to author P. Braitstein, funding reference number 145367.

This work was also supported in part by the Eunice Kennedy Shriver National Institute of Child Health & Human Development [R01HD060478]; and by the Dalla Lana School of Public Health at the University of Toronto. The content is solely the responsibility of the authors and does not necessarily represent the official views of the Eunice Kennedy Shriver National Institute of Child Health & Human Development or the National Institutes of Health.

Authors' contributions

LE, PB, and DA conceptualized the study. RK, PS, & AG were involved in data collection. LE, PS, RK, PB and AG analyzed the data. LE led writing the manuscript. All authors read and approved the final manuscript.

CRediT authorship contribution statement

L. Embleton: Conceptualization, Methodology, Data curation, Formal analysis. **P. Shah:** Formal analysis. **A. Gayapersad:** . **R. Kiptui:** Project administration, Formal analysis. **D. Ayuku:** Conceptualization, Investigation. **J. Wachira:** Conceptualization, Investigation. **E. Apondi:** Conceptualization. **P. Braitstein:** Conceptualization, Funding acquisition, Methodology, Formal analysis.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

We would like to acknowledge the street community in Kenya, and their on-going struggle on the streets, and thank them for their on-going support and participation in our research activities.

Appendix A. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.childyouth.2021.106302>.

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