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Understanding health and well-being of young people living in informal urban settlements inFreetown, Sierra Leone: A qualitative study

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Abstract

Background

Young people living in informal urban settlements face complex health and well-being challenges shaped by poverty, environmental hazards, and limited access to services. Despite their growing numbers and vulnerability, young people's perspectives on health and well-being remain underexplored in Sierra Leone. This study investigates how young people in two informal settlements in Freetown, Moyiba and Cockle Bay, define health and well-being, the issues they face, and their healthcare-seeking behaviour and coping strategies, through analysis of their lived experience

Methods

A qualitative, participatory approach was taken, using social mapping, well-being ranking with forty-four young people and ten key informant interviews. Data were collected in Krio, transcribed into English, and thematically analysed using NVivo, drawing on White's well-being framework and the WHO-commissioned social determinants of health framework. Four community-based young co-researchers supported data collection and analysis.

Results

Young people described health and well-being as closely interconnected. Health or "Wellbodi" was defined as being free from illness and able to function physically and socially, while well-being or "Beteh Life" referred to overall quality of life. Common health concerns included malaria, typhoid, diarrhoea, respiratory infections, and reproductive health problems, exacerbated by poor housing, environmental risks, limited healthcare access, and influenced by gender. Well-being concerns included unemployment, early childbearing, school dropout, and gender-based violence. Young people primarily relied on self-medication and drug sellers, due to cost, distance, and perceived poor-quality services quality of care and stigma Girls and young women often relied on family members to make healthcare decisions, whereas boys and young men exercised greater autonomy. For well-being issues, young people depended on families, friends, neighbours, and local Non-Governmental Organisations, while some young men reported using illegal drugs as a coping strategy.

Conclusions

This study provides the first evidence on how young people in Freetown's informal settlements understand health and well-being within challenging social and environmental conditions. By applying participatory approaches and centring local perspectives, the research highlights the complex interplay

of social determinants shaping their everyday realities. This analysis offers a practical tool to inform young people-focused interventions and policies in similar low-resource urban settings.

Background

Globally, over one billion people live in informal settlements, with the majority in low and middle-income countries (LMICs) across Africa, Asia, and Latin America (1, 2). The population living in informal settlements in sub-Saharan Africa is projected to increase by 360 million by 2030 (2), contributing to a global total of an estimated 3.3 billion people by 2050 (3, 4). Informal settlements are characterised by insecure land tenure, inadequate housing, and limited access to essential services, including clean water, sanitation, and healthcare (5–8). In Freetown, more than 900,000 of the city's approximately 1.5 million residents live in over 60 informal settlements, many located along the coastline and hillsides (9, 10).

Young people comprise a substantial proportion of the population in these settlements. Globally, over 800 million young people live in precarious urban conditions, and almost one-third of the world's urban population aged under 24 years resides in informal settlements (1). In Sierra Leone, young people are defined as individuals aged 15–35 years, consistent with the African Union framework, and represent more than 45% of the national population (11, 12).

Young people living in informal settlements experience multiple, intersecting health and well-being challenges driven by structural disadvantage. Infectious diseases, including malaria, typhoid, and diarrhoeal disease, as well as and reproductive health problems remain common because of overcrowding, poor sanitation, and inadequate water supplies (13). Poverty and unemployment further undermine young people's health and well-being (14, 15). Gender-based violence, early pregnancy, and school dropout disproportionately affect girls and young women (16, 17).

Healthcare seeking in informal settlements is constrained by financial barriers, distance, medicine shortages, and poor-quality services, alongside stigma, cultural norms, and negative provider attitudes (18, 19). Young people frequently combine formal biomedical care with informal providers, including traditional healers and unregistered drug sellers (20). Girls face additional barriers related to mobility restrictions, confidentiality concerns, and the absence of youth-friendly services for sexual and reproductive health (21, 22). In Freetown, healthcare access is further constrained by weak governance, inadequate infrastructure, and high out-of-pocket costs (23, 24).

Despite growing evidence on health in informal settlements, research has rarely examined these issues from young people's own perspectives. Existing studies predominantly rely on household- or community-level data, providing limited insight into young people's lived experiences, healthcare-seeking agency, coping strategies, and the ways structural deprivation, socio-cultural norms and gender intersect to shape their health and well-being (23, 25).

This study addresses this gap by using participatory approaches to explore how young people in two informal settlements in Freetown define health and well-being, the challenges they face, and their

healthcare-seeking behaviours and coping strategies. The analysis draws on White's (2010) well-being framework which conceptualises well-being across material, social, and human domains, together with the WHO Commission Social Determinants of Health framework (26), which situates health inequalities within structural and systemic conditions. These complementary frameworks provide a lens for understanding how young people's health and well-being are shaped and experienced within informal settlements.

This study aims to generate an in-depth, contextually grounded understanding of health and well-being among young people living in informal settlements in Freetown, Sierra Leone, by examining how structural determinants influence their lived experiences and their agency in navigating healthcare-seeking and well-being-coping strategies.

Conceptual framework

Health and well-being are multidimensional concepts that have been defined from medical, social, psychological, and spiritual perspectives, depending on the context in which they are examined (27). For young people living in informal settlements, these dimensions are shaped by the interaction of structural, social, environmental, and individual factors (28, 29). However, few studies have adopted an integrated conceptual approach to examine health and well-being among this population.

This study draws on two complementary frameworks

The World Health Organization (WHO) Commission on Social Determinants of Health (SDH) framework (Fig. 1) and White's well-being framework (Fig. 2). The WHO SDH framework conceptualises health as being shaped by multiple factors, including socioeconomic position, governance, cultural values and norms, living and working conditions, biological and psychological factors, and the organisation of health systems (26). It provides a useful lens for examining how broader social, political, and economic inequalities influence the health and healthcare experiences of young people living in informal settlements. White's (2010) well-being framework complements this perspective by conceptualising well-being across four interconnected domains: material, social, human, and subjective. Unlike approaches that focus primarily on health outcomes, White's framework emphasises both objective living conditions and individuals' subjective experiences, recognising well-being as a dynamic process shaped by interactions between people and their social environments.

The two frameworks are conceptually complementary (Table 1). Both recognise the importance of living conditions, social relationships, and access to resources in shaping health and well-being. However, the WHO SDH framework primarily explains the structural and systemic determinants that generate health inequalities, whereas White's framework extends this analysis by incorporating subjective experiences, individual agency, and community perspectives. Used together, these frameworks provide a comprehensive lens for understanding how structural disadvantage, social environments, and personal

agency interact to shape young people's health, well-being, healthcare-seeking behaviours, and coping strategies in Freetown's informal settlements.

Table 1
Dimensions of Health and Well-being using White's Well-being and the SDH frameworks

White's conceptualisation of well-being (30)				WHO Commission on Social Determinants of Health (26)
Domain	Category	Individual	Community	
Material well-being: practical welfare and standard of living	Objective	• Income, wealth, and assets • Employment and livelihood activities • Level of consumption	• Income levels; housing quality; tenure status • Employment and livelihoods opportunities • Availability of information and communications • Availability/quality of services and amenities • Infrastructure and accessibility (e.g., public transport) • Quality of environment	• Living and working conditions • Income and employment conditions (labour market) • Food availability • Housing quality and (land) tenure security • Access to basic services (water, sanitation, electricity, health care, education) • Physical environment and infrastructure (transport, neighbourhood conditions)
	Subjective	• Satisfaction with income and wealth • Assessment of one's standard of living compared with others • Assessment of the present standard of living compared with the past	• People's satisfaction and perceptions of practical welfare and standard of living	
Social well-being: Social relations and public goods	Objective	• Social, political, and cultural identities • Violence, conflict, and (in)security • Relations with the state: law, politics, welfare • Access to services and obligation	• Community formation: main majority/minority groups; in-/out-migration; lines of solidarity/conflict • Organizational belonging: churches, mosques, temples, clubs, sports, political parties, gangs, action groups, etc.	• Social (gender, ethnicity, etc.) cohesion, social capital, social protection, and collective action • Macroeconomic policies • Socioeconomic position • Social networks, community

		• Networks of support and obligation • Environmental resources	• Informal association: where different groups get together • Community relations with state law, politics, and welfare • Violence, crime, and (in)security	participation, and group membership • Governance/power relations, inclusion/exclusion, and social stratification • Safety, security, violence, and crime
	Subjective	• Perceptions of safety, respect, and discrimination • (Dis)satisfaction with access to services • Assessment of treatment/support given or received • Perceptions of environmental quality	• People's satisfaction and perceptions of social relations and public goods • Experience of collective action	• Relationships between communities and institutions (governance, welfare, law)
Human well-being: Capabilities, values, and attitudes	Objective	• Household structure and composition • Education, information, and skills • Physical health and (dis)ability • Relations of love and care	• Age distribution; health status; education levels. • Household composition/stability	• Education, skills, and health status • Psychosocial well-being (stress, agency, sense of control) • Values, norms, and cultural understandings (behaviours) • Trust, identity, and sense of belonging • Aspirations, perceptions of well-being, and life satisfaction • Biological factors

Subjective	• (Dis)satisfaction with levels of health, information, skills, education • Self-concept and personality • Sense of competence, (in)capability, and scope for influence • Trust and confidence • Religious faith	• Understandings of “a good community”, “a good society”. • Community self-concept • Community fears and aspirations • Levels of (dis)satisfaction • Trust and confidence in each other • Sense of alienation or connectedness with wider society

In the discussion, these complementary frameworks are used to interpret the determinants of health and well-being inequities experienced by young people in informal settlements. This advances our understanding of how health and well-being are experienced and negotiated in these settings.

Methods

Study Design

This qualitative study adopted participatory research approaches to explore the health and well-being issues of young people living in informal settlements. Participatory methods were chosen to facilitate meaningful engagement of these marginalized young people in knowledge generation, enhancing the relevance, credibility and ownership of the findings (31). Data were collected using social mapping, well-being ranking, and key informant interviews (KIIs), enabling participants to express their perspectives through visual, narrative, and dialogic ways. This study was part of the Accountability and Responsiveness in Informal Settlements for Equity (ARISE) consortium, a global research partnership that sought to improve accountability and the health and well-being of marginalised people living in informal urban settlements across low- and middle-income countries (32).

Research Team

Four young residents, (two males and two females), one male and one female from each study community were recruited as co-researchers. They supported tool adaptation and piloting, participant mobilisation, and maintenance of ethical standards, including safeguarding and confidentiality. Their local knowledge and peer status enhanced rapport and data quality. Co-researchers received training in

research ethics including informed consent, confidentiality, secure data management and safeguarding. Weekly debriefings enabled the research team to address ethical issues throughout the study.

Study Setting

The study was conducted in two purposively selected informal settlements in Freetown, Sierra Leone: Cockle Bay (West) and Moyiba (East). Selection was based on geographical variation and existing relationships through the ARISE project. Both communities face multidimensional deprivation characterized by large numbers of young people, inadequate housing, limited access to healthcare, poor infrastructure, and environmental risks (24, 32).

Moyiba is a densely populated hillside settlement of over 40,000 residents, with more than 60% estimated to be young people (33). The community is vulnerable to landslides, flooding, and erosion, and is served by a single public health facility with limited services. Livelihoods include petty trading, commercial motorcycle riding, stone breaking, and street hawking (24).

Cockle Bay is a coastal settlement of approximately 20,000 residents (34). The community lacks a health facility and is vulnerable to sea-level rising and flooding. Common livelihoods include stone mining and crushing, fishing, sand mining, petty trading, and commercial motorcycle riding (34, 35).

Sampling and Recruitment

Participants were purposively selected to ensure diversity in language, religion, gender, age, socioeconomic status, education, disability, and duration of residence. Young people were divided into two age groups: 15–17 years (boys and girls) and 18–35 years (young men and women), allowing participants top to discuss sensitive issues within relatively homogenous groups. Community co-researchers assisted with identification, mobilisation and informed consent and assent processes. Four participatory groups comprising 11 participants each were recruited for the social mapping and well-being ranking exercises (Table 2).

For KIIs, ten participants with relevant knowledge of young people's health and well-being were purposively selected including three from each study community and four stakeholders from organisations outside the community (Table 2).

Table 2
Summary of methods and participants recruited

Age group	Social mapping		Well-being Ranking		Key Informant Interviews		Overall Total
Gender	Male	Female	Male	Female	Male	Female	
15–17	11x2	11x2	11x2	11x2	3	2	93
18–35	11x2	11x2	11x2	11x2	3	2s	93
Total	44	44	44	44	6	4	186

X2 *= Participants for both Moyiba and Cockle Bay communities*

Data Collection Methods and Process

Data were collected between September 2023 and June 2024. Participatory activities were conducted in Krio, while a small number of KIIs were conducted in English.

Social Mapping

Four groups (defined by age and gender – see Table 2) independently produced community maps identifying social vulnerabilities and environmental factors affecting young people's health and well-being. Discussions explored how these experiences varied by gender, age, socioeconomic status, and disability. On the following day, participants reconvened to compare and discuss similarities and differences across the maps. Outputs included maps, photographs, field notes, and audio recordings.

Well-being Ranking

The same groups to identified and ranked the factors they considered most important for well-being, generating insights into local aspirations, priorities, and challenges. The groups subsequently combined their rankings through facilitated discussion to produce a single consensus ranking for each community.

Key Informant Interviews (KIIs)

Interviews with community leaders, local stakeholders and governance actors explored young people’s health and well-being, livelihoods, governance, inequalities, and safeguarding issues. Interviews were conducted in private spaces convenient for the participants and lasted approximately one hour.

Data management and analysis

With participants’ consent or assent, data were documented through audio recordings, field notes, photographs, and participatory outputs such as maps, rankings, and diagrams. Krio recordings were transcribed directly into English independently reviewed for accuracy by a second transcriber and the lead author. Where discrepancies were identified, transcripts were revised. Data were analysed using the

thematic framework analysis approach (36). Following familiarisation with the transcripts and participatory materials, a coding framework was developed based on the study objectives, the topic guide, emerging findings and relevant existing literature. Codes were systematically applied to all transcripts and organised into themes through an iterative process. Co-researchers reviewed and refined the themes. Data were managed with NVivo Version 12.0.

Results

The findings are presented in three sections: young people's understandings of health and well-being; the health and well-being issues they experience; and how they cope with these issues. The following abbreviations are used in quotation labels: **WBR** = Well-being Ranking; **SM** = Social Mapping; **KII** = Key Informant Interview; **CBY** = Cockle Bay; **MYB** = Moyiba.

Understanding of health

Across Moyiba and Cockle Bay, young people commonly defined health using the Krio term *"wellbodi"* meaning "well" or "free from illness." Health was primarily understood as the absence of sickness and not requiring healthcare services, for example:

"…we call health here wellbodi. Wellbodi means to all of us that we are well, physically fit, active, functional, and that we have no need to go to the hospital for healthcare services." **– WBR_Young girls_CBY**

However, many participants described health more broadly, linking it to employment, healthy living environments, access to healthcare, adequate housing, food security, and social well-being:

"...being healthy means having a good job, living in an environment that is healthy, and being able to take care of our families. If I can afford good food, a safe home, and good healthcare services, then I am truly healthy." **– WBR_Young men_MYB**

While understandings of health were generally similar across the two communities, some gender differences emerged. Girls highlighted aspects like hygiene, nutrition, sanitation, and mental wellness as interconnected components of health:

"To me, health is part of well-being and not only physical health. When you have a high quality of life, good physical and mental health, a nutritious diet, a hygienic environment, and a comfortable place to rest, you have good health. My health is part of my well-being, where all of them work together to put me in a good status within my community as an individual." **–WBR _Young girls_ CBY**

Most young boys further framed health as preventing illness through self-care, particularly in relation to environmental, sanitation and livelihood risks.

Understanding of well-being

In Cockle Bay and Moyiba, young people described well-being using the Krio term *“Beteh Life”* referring to a good quality of life beyond physical well-being. Well- encompassed psychosocial well-being, safety, secure livelihood, access to basic services such as water, sanitation, healthcare, education, electricity, and the ability to meet personal and family needs.

"To me, well-being is ‘Beteh life’. When you have ‘Beteh life’ you can take care of yourself, especially when you feel safe and have access to necessities. These necessities include having a stable livelihood activity, clean water, good sanitation, a healthy environment, good housing, and quality healthcare." **– WBR_ Young women _ CBY**

Understandings of wellbeing varied by gender and age. For younger boys and girls, well-being meant feeling safe, having enough food, and having access to play areas. Girls stressed reproductive health, menstrual hygiene, and the need for safe spaces and healthcare services. They often described their experiences with poor sanitation and lack of menstrual support as indicators of poor well-being:

“…well sir… when we think about well-being, we [girls] get serious well-being problems as a result of our menstrual health pain. Due to poor toilet facilities, lack of healthcare services, eating all types of food [no nutritious food], and germs [from the toilet] described our well-being within this community…” **– SM_Young girl_CYB**

Boys, on the other hand, linked well-being to their labour-intensive lifestyles, such as stone mining, fishing, and how these affect their physical condition and ability to access healthcare:

“...but well-being itself, in my understanding, is related to most of the different things/work we do. Well-being means a less labour-intensive lifestyle; my work is also affecting my well-being. We are always exposed to well-being problems not because we are sick, but because we are exposed to the risks of health problems themselves.” **– SM_Young boys_MYB**

Young men and women more often associated well-being with financial security, housing, social inclusion, participation in community development, access to education and the ability to support their families. .. As one young man explained:

“Well-being, to me, means having a stable income, being able to own or pay for my home, and being able to provide for my wife and children. True well-being, in my view, is having financial security and ownership of a home without the fear of eviction or harassment.” **– SM_young men_MYB**

Environmental factors also shaped understandings of well-being. For instance, flooding, sea-level rise and sanitation problems in Cockle Bay posed particular challenges to well-being. Whereas in Moyiba, situated on a hillside, landslides, water access issues, and hazardous infrastructure were frequent issues. These challenges are illustrated in the following quotations:

“For us, well-being is not just about feeling healthy; it is about surviving the floods, the landslides, and the broken toilets that surround our homes. In Cockle Bay, every heavy rain means our houses fill with dirty

water, mud, and anything that comes with it, including sickness. This is how this community is year in year out.". **– WBR_young woman_MYB**

In Moyiba here, the hillside is full of stones, rolling boulders, and hanging hills, which are really unsafe paths, making even walking dangerous. As young girls, we carry water every day up these difficult paths to clean the homes, and we care for our siblings, so when the environment collapses, it is our bodies and our futures that suffer first. Wellbeing, for us, means safety from the land and wind that threaten us every day."– **SM_Young girls_CBY**

Young people also discussed social discrimination and substance abuse in relation to their understanding of well-being. Girls in Cockle Bay highlighted how drug and alcohol use led to safety concerns and mental well-being issues:

"In this community, they normally discriminate against gangsters, school dropouts, teenage mothers, people suspected of being thieves, prostitutes, the mentally challenged, persons with disabilities, orphans, and the aged. This is what well-being means to us as a community. No support, no work, no healthcare access, and no money." – **SM_Young girls_CBY**

Health and Well-being Challenges

Health challenges

Young people in both Moyiba and Cockle Bay reported experiencing a wide range of health challenges. Across ages and genders, common illnesses reported included malaria, typhoid, diarrhoea, cholera, pain, malnutrition, respiratory conditions, and mental health challenges. Participants linked these conditions to poor housing and environmental conditions. As one youth leader from Moyiba explained, malaria and typhoid were so common that they had become normalised within their community:

"…. the common health issues that we have here are mostly malaria, typhoid, pain, cold, diarrhoea, cholera, and malnutrition in children…. These are issues we will live with because of the environment we live in. You cannot meet two or three young people without someone telling you that I feel I have malaria or typhoid ……" **–KII_Young female youth leader_MYB**

Although both settlements shared many health challenges, participants described place-specific risks associated with their physical environments. In Cockle Bay, exposure to sea winds, overcrowding, poor-quality housing, and inadequate sanitation contributed to respiratory illnesses, malaria, typhoid, and sexually transmitted infections (STIs). Young people also highlighted the health impacts of extreme weather. Heavy rains frequently caused flooding, house collapse, injuries, drowning, and cholera outbreaks, while strong coastal winds damaged homes constructed from temporary materials, further increasing risks of injury and displacement.

"When the rains come, our houses sink, and sometimes they fall apart, leaving us drowning or even with serious injuries. When there is heavy wind, especially from the sea, most of the houses also fly away as they

are either made of zinc or wood. These issues leave us with serious health issues that are difficult to deal with, especially when there is no health facility to go to within our community." **– WBR_Young men_CBY**

In Moyiba, the settlement's steep terrain and unpaved roads created different health risks. Motorcycle accidents and falls were common, particularly during the rainy season when roads became slippery. During the dry season, dust from unpaved roads was associated with respiratory problems, including asthma. As one participant observed, avoiding injury while travelling around Moyiba was considered a matter of luck, reflecting the hazardous nature of the local environment.

Health experiences also differed by gender. Girls and young women consistently identified sexual and reproductive health (SRH) as one of their most significant concerns. Participants attributed frequent urinary tract infections to the use of unsafe sanitation facilities, including buckets, plastic bags, and hanging toilets built over the sea.

There were differences in health issues amongst girls and boys. Most girls in both communities reported that sexual and reproductive health issues were the most significant challenges they faced. Girls reported urinary tract infections as common ailments because they had to use unhygienic toilet facilities, such as buckets, bags, and hanging toilets built over the sea. These practices, often used at night because of security concerns, were perceived to increase the risk of infection and menstrual complications. Participants also described limited knowledge about menstrual health and infection prevention, compounding the burden of poor sanitation.

From outside the community, key informants identified STIs, HIV, and menstrual complications as important concerns, particularly among young women engaged in commercial sex work. One informant suggested that informal settlements attracted sex workers because of affordable housing and limited regulation, increasing opportunities for STI transmission. This narrative reflected broader societal stigma that associates informal settlements with disease, immorality, and exclusion from government services. Such perceptions risk reinforcing negative stereotypes of young women living in these communities, regardless of their individual circumstances.

"When we talk about diseases here STD (sexually transmitted disease) is one, under STD you have gonorrhoea, syphilis, chronic cold, people living in these communities are prone to I think STDs like I mentioned earlier, these are communities that people have classified as communities living on their own, do things on their own, they are been perceived as not been part of what happens at governmental level. They sort of have their own rules and regulations, and that is where you see these commercial sex workers harbouring". **KII_Female youth_Outside MYB_CBY**

Girls further emphasised the lack of accessible SRH services and safe spaces where they could seek information, support, or care. Several participants described the closure or absence of community spaces that had previously provided advice on menstruation, family planning, and sexual health. Without these resources, girls felt ill-equipped to manage SRH concerns, increasing their vulnerability to

unintended pregnancy, sexually transmitted infections, early marriage, and sexual violence. As one young woman explained:

"We used to have a place where we could talk and get help as girls about our sexual and reproductive health, but now there's nowhere to go or no one to talk to. Even outside the community, we are not aware of where to go or what to do if we require services related to menstrual hygiene and family planning," **– WBR_Young girl_MYB**

Girls stressed that safe spaces would enable girls to exchange knowledge, access support, and make informed decisions about their health. As another participant noted, learning collectively would improve both confidence and wellbeing, whereas the absence of such spaces left girls to manage SRH challenges independently.

Livelihoods also shaped gendered health experiences. Young women frequently reported chronic body pain and headaches associated with petty trading, which involved carrying heavy goods on their heads over long distances, often across steep and uneven terrain. These physically demanding activities produced persistent musculoskeletal pain that affected their daily lives and ability to work. Similarly, young men described work-related pain resulting from physically intensive livelihoods, including stone breaking and manual labour. Long hours performing strenuous work under extreme heat caused chronic body aches and exhaustion, despite their young age. As one participant reflected, after a day of stone breaking he "feel[s] after work like an old man" (WBR_Young men_MYB).

Well-being challenges

Young people described well-being challenges as encompassing education, health, social connections and networks, family life, security, employment, and many other areas. Well-being challenges were discussed as interconnected, with deficits in infrastructure, livelihoods, and social protection directly shaping health outcomes. As one youth leader explained, "Well-being is health, but health is not well-being," emphasising that economic resources, supportive family relationships, and access to essential services are fundamental determinants of health and quality of life (KII_Female Youth Leader_MYB).

Young people reported that macroeconomic and national development policies had failed to improve their living conditions in informal settlements. Investments in healthcare, water and sanitation, housing, and urban infrastructure had largely bypassed these communities, while employment and social protection programmes remained limited. Poverty, insecure livelihoods, and inadequate public services therefore emerged as structural determinants of poor well-being among the growing urban youth population.

Young women and men identified unemployment, inadequate healthcare, unreliable electricity and water supply, poor roads, and insecurity as major well-being concerns. These challenges interacted to create conditions that heightened vulnerability, particularly for young women. One mixed-gender discussion highlighted how financial insecurity compelled many girls to enter relationships in order to meet basic needs, including food and menstrual hygiene products, resulting in unintended pregnancies and school

dropout. Participants also described insecurity associated with gang activity, which further restricted young women's mobility and access to livelihood opportunities.

Gender strongly shaped experiences of well-being. Young women and key informants reported that girls frequently experienced early marriage, school dropout, and unpaid domestic labour as consequences of household poverty. Families sometimes arranged marriages for daughters to reduce household expenses or secure financial support, while girls were expected to undertake most domestic responsibilities, leaving little opportunity for education or paid employment. Some participants also described transactional sex and sex work as survival strategies adopted to support themselves and their families. The following quotations illustrate how constrained livelihood opportunities and gendered social norms shaped young women's decisions, with relationships functioning as important, albeit precarious, mechanisms of economic survival.

"Due to poverty, parents marry off their daughters... Teenage pregnancy and prostitution are common among girls as young as 15–17 years… Many girls are sent out onto the streets to sell to feed their families. This issue remains a well-being problem within these communities." **– KII_NAYCOM**

“If I have a man, I will go and stay there with him. That way, I will have a good place to stay and be able to support my family, especially when I have someone who provides for me. I may not be able to go to school, but I will be able to learn business by doing small businesses at the marketplace. I can also contribute to taking care of my children, especially for school and healthcare”. **WBR_Young Women MYB**

Young men's accounts reflected different but related pathways of disadvantage. Their principal concern was limited access to education resulting from household poverty. They reported that many children left school early because families were unable to pay school-related costs. Early school leaving reduced opportunities for vocational training and formal employment, reinforcing cycles of unemployment and economic insecurity. Young men also highlighted the scarcity of local schools, limited skills development opportunities, and the absence of stable employment as major barriers to improving their well-being:

"We have very few schools here... school is very expensive, and most of us drop out early because our parents cannot afford to pay the bills… We also do not have jobs nor skills training to seek jobs." **– WBR_young men_CBY**

Healthcare-seeking behaviour and well-being coping strategies

Healthcare-seeking behaviour

Most young people in informal settlements in Moyiba and Cockle Bay reported that they rely on informal sources for healthcare, including unregistered drug shops, drug peddlers, home-based healthcare providers, traditional healers, and spiritual healing. Self-diagnosis and self-medication with over-the-counter medicines from local drug shops and drug peddlers were common practices, with formal health

facilities generally viewed as a last resort. One young woman described diagnosing common illness using symptoms and purchasing drugs without consulting trained health professionals:

"If I have malaria or typhoid, I will know by the way I feel or even from my urine colour. I will feel hot (fever) and will have a cold all over my body. So, I will just get the medications from the pharmacy and take them." **– SM_Combined young woman_CBY**

Several interconnected factors shaped these healthcare-seeking practices. First, affordability was the most commonly cited barrier to accessing formal healthcare. Participants explained that public health facilities often lacked essential medicines, requiring patients to purchase drugs separately while also paying consultation fees. Private healthcare services were considered prohibitively expensive, leaving many young people to rely on cheaper alternatives, including informal drug vendors, traditional medicines, and spiritual healing.

"When we fall sick, we mostly go to the pharmacies [patent/unregistered shop], sometimes buy drugs from people who sell them, and some people go to churches for prayers. We do not initially choose to go to the hospital because of the care provided there and the cost of the services requested by the providers. Many of us rely on traditional medicines from our community herbalists. There is no hospital here within the Moyiba community, and taking care at the hospital is very expensive and time-wasting." **– WBR_ Combined Young men_MYB.**

Second, stigma associated with some illnesses discouraged young people from seeking formal healthcare. Participants reported that illnesses perceived as shameful, particularly sexual and reproductive health conditions, were often concealed and treated through traditional healers or not treated at all. Young women described having limited access to confidential and non-judgemental healthcare services and therefore relied heavily on peers, family members, or traditional practitioners for advice and treatment.

"…. Most times these men will have a boson (hydrocele) and will be ashamed to say it, so they used to come to me, and when they come to me, I will boil the herbs and will give them to drink before they become cured" – **KII_Female youth leader_CBY**

Third, participants expressed widespread concerns regarding the quality and responsiveness of formal healthcare services. Young people perceived government, private, and charitable facilities as constrained by shortages of medicines, inadequate staffing, insufficient infrastructure, and limited capacity to manage serious illnesses. These shortcomings reduced confidence in formal healthcare and reinforced the use of informal alternatives. Participants also emphasised the absence of youth-centred services that could provide confidential, respectful, and age-appropriate care. Rather than focusing solely on treatment, young people wanted healthcare providers who could offer advice and support for broader health and well-being concerns, particularly sexual and reproductive health

Fourth, geographical accessibility further shaped healthcare-seeking behaviour. Formal healthcare facilities were absent in Cockle Bay and remained difficult to access from Moyiba. In Cockle Bay, young people depended primarily on drug shops and home visits by nurses while advocated for a youth-friendly healthcare centre that would provide confidential services tailored to their needs. In Moyiba, the nearest public hospital required a two-hour walk, making timely access to care particularly difficult during medical emergencies. Although private "Arab Clinics" [Egyptian-owned private hospitals] were available, consultation fees placed them beyond the reach of many households. These delays had serious consequences as one young man explained:

“We do not have a health center in this community. Sometimes when someone becomes sick, they will struggle to get them to the health center, and some even die on the way.” -**SM_ Combined young Man MYB.**

Fifth, cultural understandings of illness shaped practices. Traditional medicine remained an important component of healthcare, particularly in Cockle Bay. Participants viewed herbalists as affordable, accessible, and effective, especially for conditions perceived to be inadequately treated through formal services. Young women frequently sought herbal remedies for menstrual pain and reproductive health concerns, commonly referred to as "blockages."

“Young females with side pains from menstruation, I can use local herbs, grind, boil, or heat them to a certain temperature, and apply them. I receive many young people, both male and female, who come to me for stomach aches and other issues.” **-KII_Female Herbalist_CBY.**

Well-being coping strategies

Young people reported that families were the primary source of support for young people’s well-being, providing food, shelter, and medication. However, financial constraints often forced families to prioritise basic survival over healthcare:

"Sometimes, you choose between feeding yourself and family and buying medication with the money you have available. If you have 50 Leones (SLE50) and need to buy food or seek healthcare to stay well, I will get food first and think about my health later… If the illness becomes too severe, maybe I will have to die, or other family members and friends will take me to the hospital and pay the bills." **– WBR_Combined young men_MYB**

Beyond the household, neighbours, extended family, and peer networks provided emotional and material support, particularly in child-headed households. Sharing food, water, and small financial contributions-built community resilience:

"I have a good relationship with my neighbours, and they sometimes help me with food, water, and small amounts of money, especially when I need to buy them. I have extended family, but they live outside this community, so these are my family now." **– WBR_Young boys_MYB**

Young men had created informal sports and cultural clubs, which generated income through events and concerts used to fund community development, including road paving and education fees. However, participants noted that girls were largely excluded from these activities, reflecting broader gender inequalities in access to community resources and opportunities.

For many young women, petty trading represented the principal livelihood strategy for coping with economic hardship. After completing unpaid domestic responsibilities, girls engaged in informal street trading, often selling goods obtained on credit from local shopkeepers and returning unsold items at the end of the day. Although this provided a modest source of income, participants described it as precarious, reinforcing dependence on informal labour characterised by low returns and limited economic security.

Discussion

This is the first study to engage directly with young people living in urban informal settlements in Sierra Leone to explore their understandings of health and well-being, the challenges they face, and how they cope. Using participatory methods and drawing on White's (2010) well-being framework alongside the WHO Commission on Social Determinants of Health (2008), we show that health and well-being are produced through the interaction of material conditions, social relationships, and individual capabilities. Using participatory methods and drawing on White's (2010) well-being framework and the WHO (37) Commission Social Determinants of Health we show that health and well-being are produced through the dynamic interplay of material conditions, social relations, and individual capabilities. These findings demonstrate that young people's health and well-being cannot be understood solely through service access or individual behaviours; rather, they are shaped by the broader social, economic, and environmental conditions that structure everyday life.

Understanding health and well-being

Young people in both communities defined health using the Krio term "wellbodi," signifying freedom from illness and the ability to function physically and socially. Well-being was articulated as "Beteh Life", encompassing financial security, social safety, access to services, and freedom from environmental threat. These locally grounded definitions extend beyond the biomedical model and align closely with the WHO's definition of health as a state of complete physical, mental, and social well-being (38). Gendered differences were evident with young women emphasised reproductive health, hygiene, and mental wellness, while boys linked health and well-being to their ability to work and generate income. These findings are consistent with studies in Nairobi and other informal settlements in Sub-Saharan Africa, where young people's understanding of health is commonly associated with sanitation, clean water, and access to services (39–41).

Well-being was understood as a balance between available resources and life's challenges, resonating with Dodge et al.'s (2012) conceptualisation of well-being as the equilibrium between resources and

challenges. Persistent deficits in water, sanitation, housing, food security, and income disrupted this balance, forcing young people to make difficult trade-offs between healthcare, education, and basic subsistence. Similar findings have been reported in studies of urban informal settlements in Bangladesh and Nairobi where structural deprivation constrains young people's opportunities to achieve and maintain well-being (42, 43).

Health and well-being issues

Health and well-being challenges in Moyiba and Cockle Bay were shaped by the interaction of structural deprivation and the distinct environmental characteristics of each settlement. Cockle Bay's coastal location heightened exposure to flooding, housing collapse, and waterborne diseases, while Moyiba's hillside terrain contributed to injuries, respiratory illnesses, and water scarcity. Young people, who constitute over 60% of residents in both communities, bore a disproportionate burden, consistent with evidence from informal settlements elsewhere in sub-Saharan Africa (44–46).

Health and well-being vulnerabilities were also strongly gendered. Young men and boys were primarily exposed to occupational hazards associated with physically demanding informal work, while young women and girls faced risks arising from unpaid domestic labour, reproductive health challenges, early pregnancy, and gender-based violence. These findings reinforce evidence from Sierra Leone and Kenya demonstrating that gender inequalities amplify health and social disadvantages for adolescent girls living in informal urban settlements (17, 47, 48). The closure of NGO-supported safe spaces had reduced access to trusted sources of sexual and reproductive health information, counselling, and support, echoing evidence on the importance of community-based safe spaces for improving young women's health and well-being (49, 50).

These challenges were reinforced by broader structural conditions. Macroeconomic policies and national development initiatives had largely failed to benefit informal settlements. Limited social protection and inadequate investment in water, sanitation, housing, and urban infrastructure perpetuated poor living conditions, reinforcing cycles of poverty, environmental risk, and ill health among young people.

Healthcare-seeking behaviour and well-being coping strategies

Healthcare-seeking among young people was characterized by a strong reliance on informal providers, reflecting the absence of health facilities in Cockle Bay and severely limited access in Moyiba. Self-medication, unregistered drug sellers, traditional healers, and spiritual healing were commonly used as first-line sources of care. These findings are consistent with evidence from Sierra Leone, South Africa, and Bangladesh, where structural barriers including facility absence, cost, and drug shortages drive reliance on informal care (23, 51–53). High out-of-pocket healthcare costs deterred use of formal services, reinforcing broader evidence that financial hardship remains a major barrier to healthcare among urban poor populations (54).

Healthcare-seeking was also shaped by sociocultural factors. Stigma surrounding sexual and reproductive health, hydrocele, and mental health discouraged young people from attending formal health facilities, increasing reliance on trusted community networks including herbalists, spiritual leaders and peers. These findings support previous research demonstrating that stigma and provider attitudes are important determinants of adolescent healthcare utilisation in sub-Saharan Africa (55). Young people advocated for confidential, youth-friendly health services tailored to their needs, reinforcing international calls for more responsive and adolescent-centred health systems (22).

Despite these challenges, young people demonstrated considerable resilience through diverse coping strategies. Families, neighbours, and peer networks provided essential material and emotional support, while young men generated income through sports and cultural associations, and young women relied on petty trading and other informal livelihood activities. Although these strategies illustrate young people's agency and the importance of community social capital, they also underscore the limited reach of state social protection and support. These community-level coping mechanisms, while demonstrating agency, also reveal the extent to which structural support from the state was absent. Consistent with Dodge et al.'s (2012) balance model of well-being, participants' accounts suggest that well-being was sustained through the continual negotiation of scarce resources across multiple domains of everyday life rather than through the availability of adequate structural support.

These findings demonstrate that objective structural deprivation, as conceptualised by the WHO Commission on the Social Determinants of Health, and subjective lived experience, as captured in White's well-being framework, are inseparable in shaping young people's health and well-being. Material scarcity, inadequate services, gendered social relations, and constrained capabilities interact to produce cumulative disadvantage, particularly for girls, while many of the health and well-being challenges identified affect entire communities, young people experience these conditions in distinct ways that reflect their everyday realities and social identities. Integrating White's well-being framework with the SDH perspective therefore provides a more comprehensive and contextually grounded understanding of health and well-being in informal settlements, illustrating how structural inequalities are experienced and negotiated in daily life. These findings reinforce evidence from low- and middle-income countries that young people's health and well-being are fundamentally rooted in the social, economic, and environmental conditions in which they live (23, 56). Table 3 summarises the relationships between the SDH and White's well-being frameworks identified in this study.

Table 3: Linking study findings with the SDoH and White’s well-being frameworks

White's conceptualisation of well-being (30)				WHO Commission on Social Determinants of Health (26)
Domain	**Category**	**Individual**	**Community**	
Material well-being: practical welfare & standard of living	Objective	***Employment & livelihood activities*** No formal employment opportunities in either communities. ***Income, wealth, & assets*** Dominated by informal work e.g. petty trading, stone mining, fishing, caregiving, exposing them to pain, injuries, and respiratory conditions. ***Level of consumption*** Constrained by poverty, precarious livelihoods, health challenges, and limited education.	***Income levels, housing quality & tenure status*** Lack adequate housing. ***Infrastructure & accessibility*** In Moyiba, steep hills and unpaved roads cause accidents and respiratory issues. ***Quality of environment*** Cockle Bay's proximity to the sea, exposes to flooding, housing collapse, and sanitation-related illnesses. ***Availability/quality of services*** Limited formal health services	***Living & working conditions*** Livelihoods are precarious and lead to ill health. ***Housing quality & land security*** In Cockle Bay weak houses collapse during storms and floods; in Moyiba's hillside terrain causes landslides and dangerous falls. ***Access to basic services*** Water scarcity is acute. Limited health facilities. ***Physical environment & infrastructure*** Environmental hazards, including winds, flooding, dust and overcrowding, exacerbate health issues e.g. malaria, typhoid, respiratory issues. ***Macroeconomic policies*** Investments in healthcare, water and sanitation, housing, and urban infrastructure largely bypassed these communities; employment and social protection programmes are limited. ***Food availability*** Food insecurity forcing young people to
	Subjective	***Satisfaction with income & wealth*** Satisfaction with material well-being tied to ability to provide for family and secure housing. ***Assessment of standard of living compared with others*** Young men equated well-being with financial security	***Availability of information & communications*** Young people have limited information about health and well-being, especially SRH issues. ***Employment & livelihoods opportunities*** Precarious livelihoods. Without basic education, young people find it difficult to access skills	

		and home ownership; young women stressed the burden of water collection. ***Assessment of present standard of living compared with the past*** Community grown in numbers and increased in vulnerability.	training and get paid employment.	choose between healthcare and food.
Social well-being: Social relations and public goods	Objective	***Social, political, &cultural identities*** Discrimination against teenage mothers, school dropouts, sex workers, and persons with disabilities shaped their identities and contributed to social exclusion. ***Relations with the state: law, politics, welfare*** Poor relationship with state actors; young people seen only as tools for voting in elections. ***Access to services & obligation*** Absence of health facilities were seen as symbols of government neglect, reinforcing alienation from state institutions.	***Social, political, & cultural identities*** Social discrimination widely reported e.g. exclusion of teenage mothers, school dropouts, and sex workers. ***Community formation: lines of solidarity/conflict*** Gang activity and drug use linked to insecurity and stigma. Informal support networks exist, but formal state relations are weak, leaving youth feeling abandoned. ***Organizational belonging*** Informal networks of peers and communities provided support, but formal safety nets largely absent. Young people linked to sports and social clubs, and religious groups. ***Environmental resources*** Flooding, landslides, dust, and poor sanitation linked to	***Social network cohesion, social capital, social protection, & collective action*** Informal support networks (friends, peers, herbalists) exist, but formal state relations are weak. Young people feel abandoned by authorities, with absent water tanks and health facilities as symbols of neglect. ***Safety, security, violence, & crime*** Girls face gender-based violence, early marriage, and exclusion from education. Boys report school dropout due to unaffordable fees, limiting access to skills training. Discrimination is widespread against teenage mothers, school dropouts, persons with disabilities, and sex workers. Insecurity is heightened by gang activity, drug use, and harassment during water collection.

	Violence, conflict, & (in)security Girls highlighted gender-based violence, harassment during water collection, and early marriage as key social well-being challenges. ***Networks of support & obligation*** Boys reported school dropout due to unaffordable fees, limiting access to skills training and employment. They depend mostly on friends for support. ***Environmental resources*** Limited availability and poor quality of environmental resources expose young residents to health risks.	malaria, typhoid, respiratory illness, and challenges to everyday well-being. ***Violence, crime, & (in)security*** Gang activity, drug use, harassment during water collection, and gender-based violence created insecurity, especially for young girls. ***Community relations with state law, politics, & welfare*** Poor relationship with state actors; seen only as tools for voting.	***Governance/power relations, inclusion/exclusion, & social stratification*** Informal settlements are stigmatized as places of vice and disease, reinforcing alienation.
Subjective	***Perceptions of safety, respect, & discrimination*** Perceptions of safety and respect central to all discussions. Called for youth-friendly centres. ***Dissatisfaction with access to services*** Financial constraints, long wait times, distance, and	***People's satisfaction &perceptions of social relations & public goods*** Informal settlements are stigmatized as places of vices and disease. Dissatisfaction with unsafe toilets, scarce water, poor housing, and exclusionary attitudes, linking these deficits to feelings of neglect and insecurity in their communities.	

		perceived discrimination as key barriers. ***Assessment of support given or received*** Some describing respectful care while others perceived neglect, stigma, or inadequate attention. ***Perceptions of environmental quality*** Overcrowding, inadequate sanitation, waste accumulation, and flooding as threats to health and well-being.	***Experience of collective action*** Football fields and informal peer networks as spaces of collective action, fostering solidarity.	
Human well-being: Capabilities, values, and attitudes	Objective	***Physical health and (dis)ability*** Health challenges included malaria, typhoid, diarrhoea, respiratory conditions, and reproductive health issues. Girls reported urinary tract infections from unsafe sanitation practices, while boys linked ill health to labour-intensive lifestyles. ***Education, information, and skills*** Education levels were low, and many dropped out early.	***Age distribution, health status, and education levels*** Both settlements lack youth-focused health facilities. In Cockle Bay, drug shops and nurses' home visits are primary sources of healthcare. In Moyiba, informal drug peddlers dominate. ***Household composition/stability*** Young people lived in often overcrowded household arrangements, including extended family and friends.	***Education, skills, and health status*** School dropout common due to costs. Boys lament lack of training opportunities, while girls burdened with household chores and early marriage, reducing their educational prospects. Common illnesses include malaria, typhoid, diarrhoea, cholera, respiratory conditions, and reproductive health issues. ***Aspirations, perceptions of well-being, and life satisfaction*** Young people defined health as “wellbodi” and well-being as “beteh life”. Girls emphasized menstrual hygiene and reproductive health,

	Relations of love and care Family and peer relationships as central sources of emotional support. ***Household structure and composition*** Overcrowded arrangements including extended family and friends.		while boys stressed physical fitness and prevention. Mental stress, stigma, and lack of agency were recurrent themes. ***Psychosocial well-being (stress, agency, sense of control)*** Aspire to financial security, education, safe housing, and respectful healthcare. ***Trust, identity, and sense of belonging*** Trust in formal institutions is low; hopelessness about their future. ***Values, norms, and cultural understandings (behaviours)*** Gender norms, cultural expectations, and community beliefs shaped young people's healthcare-seeking practices, risk exposure, and perceptions of acceptable conduct. ***Biological factors*** Highlighted age and sex as biological factors that affect girls during menstruation, and susceptibility to illness and environmental conditions that shape their health and well-being.
Subjective	***Self-concept and personality*** Health and well-being were defined as "wellbodi" and "beteh life". Young people linked well-being to feeling safe, having enough food, employment, and healthcare. ***Dissatisfaction with levels of health, information, skills, and education*** Girls emphasized reproductive health; boys emphasized physical fitness and earning a living. ***Sense of competence, (in)capability, and scope for influence*** Young people were seen as influential because of large	***Understandings of "a good community", "a good society."*** Safe housing, clean water, education and healthcare. ***Community self-concept*** Seen as resilient yet burdened by poverty, unsafe environments, and neglect by authorities. ***Community fears and aspirations*** Feared violence, exploitation, and poor health, while hopeful of financial stability, education, and youth-friendly services. ***Levels of dissatisfaction*** Widespread due to water scarcity, unsafe sanitation, unemployment, and inadequate healthcare services. ***Trust and confidence in each other***	

	numbers, but only during elections. ***Trust and confidence*** Aspirations included financial security, education, and participation in development. Trust in institutions were low; young people expressing hopelessness about their future. ***Religious faith*** Offering young people meaning, moral guidance, emotional comfort, and hope.	Varying levels of trust within communities, with strong peer support for issues. ***Sense of alienation or connectedness with wider society*** Marginalized from wider society, yet aspirations for inclusion and opportunities.	

Strengths and limitations

The key strength of this study is its participatory approach, which generated contextually grounded insights into how young people in Freetown's informal settlements understand health and well-being. By documenting locally meaningful concepts such as *Wellbodi* and *Beteh Life*, the study contributes novel evidence to the literature. The involvement of young community co-researchers and the use of multiple qualitative methods enhanced trust, cultural sensitivity, and credibility of the findings. The study has several limitations. It was conducted in only two informal settlements, limiting the transferability of the findings, and did not systematically examine seasonal variation in health and well-being. Although the lead researcher's positionality may have influenced participants' responses, reflexive practice, collaboration with community co-researchers, and data collection in familiar settings were used to minimise these effects.

Conclusion

This study is the first to document the lived experiences of young people in Freetown’s informal settlements, revealing how they define and navigate health (“Wellbodi”) and well-being (“Beteh Life”) amidst structural and environmental difficulty. By integrating participatory methods, lived experiences,

and local perspectives, we uncovered the complex relationships among social determinants shaping young people's health and well-being. Integrating White's well-being framework with the WHO Commission's SDH framework provides a contextually grounded analytical resource to support youth-centred health and well-being interventions and policies in similar low-resource urban settings. Young people's voices must be placed at the centre of policy design and service delivery in informal settlements not as beneficiaries, but as knowledgeable agents of change.

Declarations

Ethics approval

Prior to the study, ethical approval was obtained from the Research Ethics Committee (REC) of Liverpool School of Tropical Medicine, UK (protocol number 21-051) and the Sierra Leone Ethics and Scientific Review Committee (SLESRC) in Sierra Leone (protocol dated 20 October 2021). This study was conducted in accordance with the principles of the Declaration of Helsinki, including voluntary participation, informed consent, protection of vulnerable participants, confidentiality, and approval by the Sierra Leone Ethics and Scientific Review Committee.

Consent to participate

Verbal and written informed consent and assent were obtained from all participants. For young people aged below 18 years, parental or guardian consent and participant assent were obtained. Study information was provided in English and verbally translated into Krio where required.

Consent for publication

Consent for participation and future anonymised publication of results was sought from all participants. The consent form and participant information sheet are available as Supplementary Files 1 & 2

Not Applicable

Data collection tools used

All data collection tools used including social mapping, wellbeing ranking and key informants interview were originally developed for this study

Availability of data and materials

The dataset generated and/or analysed during the study is not publicly available to maintain the confidentiality of participants' information. Data that support the findings of this study are, however, available upon reasonable request from the corresponding author.

Competing interests

The authors have no competing interests to declare

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Author’s contributions

SS conceptualised and designed the study, collected the data, performed the data analysis, interpreted the results, and drafted the initial manuscript. LW, JK and IO contributed to the conceptualisation and design of the study, supported interpretation of the results, reviewed the manuscript; JR contributed to the conceptualisation and design of the study, supported interpretation of the results, reviewed the manuscript, and supervised the study. All authors read and approved the final manuscript.

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References

1. Boanada-Fuchs A, Kuffer M, Samper J. A global estimate of the size and location of informal settlements. Urban Sci. 2024;8(1):18.
2. UN-HABITAT. United Nations Sustainable Development Goals Report: Goal 11 – Sustainable Cities and Communities. 2025 [Available from: https://unhabitat.org/sites/default/files/2025/09/hsp-oewg-h.2025-inf-4_proposed_recommendations_on_informal_settlements.pdf?utm_source=chatgpt.com
3. UN-DESA. Make cities and human settlements inclusive, safe, resilient and sustainable 2026 [Available from: https://sdgs.un.org/goals/goal11
4. UN. Tracking Progress Towards Inclusive, Safe, Resilient and Sustainable Cities and Human Settlements. 2018.
5. Atek AA. Trine Kjørholt Young people, Participation, and Sustainable Development in an Urbanizing World. 2012.
6. Sharpe D, Rajabi M, Chileshe C, Joseph SM, Sesay I, Williams J, et al. Mental health and wellbeing implications of the COVID-19 quarantine for disabled and disadvantaged children and young people: evidence from a cross-cultural study in Zambia and Sierra Leone. BMC Psychol. 2021;9(1):79.

7. Ezeh A, Oyebode O, Satterthwaite D, Chen Y-F, Ndugwa R, Sartori J, et al. The history, geography, and sociology of slums and the health problems of people who live in slums. lancet. 2017;389(10068):547–58.
8. UN-HABITAT. Housing, slums and informal settlements Website UN-HABITAT. 2025 [Available from: https://data.unhabitat.org/pages/housing-slums-and-informal-settlements
9. Austin V, Holloway C, Ossul Vermehren I, Dumbuya A, Barbareschi G, Walker J. Give Us the Chance to Be Part of You, We Want Our Voices to Be Heard: Assistive Technology as a Mediator of Participation in (Formal and Informal) Citizenship Activities for Persons with Disabilities Who Are Slum Dwellers in Freetown, Sierra Leone. Int J Environ Res Public Health. 2021;18(11):5547.
10. Lynch K, Nel E, Binns T. Transforming Freetown': Dilemmas of planning and development in a West African City. Cities. 2020;101:102694.
11. MoYA. Sierra Leone National Youth Policy. 2020 [Available from: http://yacansl.org/assets/files/National-YouthPolicy2020.pdf
12. Weekes SB, Bah S. Thematic Report on Population Structure And Population Distribution. Stats SL: Statistics Sierra Leone; 2017.
13. Macarthy JM, Conteh A, Sellu SA, Heinrich L. Health Impacts of the Living Conditions of People Residing in Informal Settlements in Freetown: Report on the Future Health Systems (FHS) Research in Freetown. Sierra Leone Urban Research Centre; 2018.
14. ILO. Investing in transforming futures for young people 2022.
15. ILO. Global employment trends for youth 2022: investing in transforming futures for young people. Geneva: ILO; 2022. p. 297. (executive summary).
16. Conteh A, Sirah Kamara M, Saidu S, Mustapha Macarthy J. Covid-19 response and protracted exclusion of informal settlement residents in Freetown. Sierra Leone. 2021.
17. Decker MR, Latimore AD, Yasutake S, Haviland M, Ahmed S, Blum RW, et al. Gender-based violence against adolescent and young adult women in low-and middle-income countries. J Adolesc Health. 2015;56(2):188–96.
18. Chumo I, Kabaria C, Shankland A, Mberu B. Drivers of vulnerability to health and wellbeing challenges in informal settlements. Front Sustainable Cities. 2023;5:1057726.
19. Kabiru CW, Izugbara CO, Beguy D. The health and wellbeing of young people in sub-Saharan Africa: an under-researched area? BMC Int health Hum rights. 2013;13:1–7.
20. Chuma J, Okungu V, Molyneux C. Barriers to prompt and effective malaria treatment among the poorest population in Kenya. Malar J. 2010;9:144.
21. Malmi AH. Adolescent sexual and reproductive health and rights (SRHR) in informal urban settlements: changes, challenges and life-strategies of adolescent girls living in Kibera, Nairobi. 2016.
22. Hossain SJ, Roy BR, Salveen N-E, Hasan MI, Tipu SMMU, Shiraji S, et al. Effects of adding psychosocial stimulation for children of lactating mothers using an unconditional cash transfer

platform on neurocognitive behavior of children in rural Bangladesh: protocol for a cluster randomized controlled trial. BMC Psychol. 2019;7(1):13.

23. Fullah S, Vangahun D, Gandi I, Tengbe SM, Koroma B, Sesay S et al. The Economic Burden of Healthcare Utilization: Findings from a Health and Well-Being Survey in Informal Settlements of Freetown, Sierra Leone. J Urb Health. 2025:1–21.
24. Sesay S, Sesay IJ, Gandi I, Fullah S, Vangahun D, Conteh A et al. ARISE Sierra Leone - Survey Report 2024.
25. Conteh A, Dean L, Wilkinson A, Macarthy J, Koroma B, Theobald S. Health seeking by people living with non-communicable diseases in a pluralistic health system: the role of informal healthcare providers. Int J Equity Health. 2025;24(1):67.
26. WHO. Operational framework for monitoring social determinants of health equity. World Health Organization; 2024.
27. Fisher J. The four domains model: Connecting spirituality, health and well-being. Religions. 2011;2(1):17–28.
28. Nejad FN, Ghamari MR, Kamal SHM, Tabatabaee SS. Identifying, Measuring, and Ranking Social Determinants of Health for Health Promotion Interventions Targeting Informal Settlement Residents. J Prev Med Public Health. 2023;56(4):327.
29. Shokouh SMH, Mohammad A, Emamgholipour S, Rashidian A, Montazeri A, Zaboli R. Conceptual models of social determinants of health: a narrative review. Iran J public health. 2017;46(4):435.
30. White SC. Analysing wellbeing: a framework for development practice. Dev Pract. 2010;20(2):158–72.
31. Cornwall A, Jewkes R. What is participatory research? Soc Sci Med. 1995;41(12):1667–76.
32. ARISE. Accountability and Responsiveness in Informal Settlements for Equity 2024 [Available from: https://www.ariseconsortium.org/
33. Macarthy JM, Koroma B, Rigon A, Frediani AA, Klingel A. Urban transformations in Sierra Leone: knowledge co-production and. partnerships for a just city: UCL; 2024.
34. Koroma B, Macarthy JM, Rigon A, Frediani AA, Klingel A. Informal settlement profiles: Cockle Bay, Dworzark, Portee-Rokupa and Moyiba. Urban Transformations in.37.
35. SLURC. Change by Design. Participatory design and planning. Cockle Bay community action Area Plan. 2018.
36. Ritchie J, Lewis J. Qualitative research practice: a guide for social science students and researchers. London: Sage; 2003.
37. WHO. Closing the gap in a generation: health equity through action on the social determinants of health: Commission on Social Determinants of Health final report. World Health Organization; 2008.
38. WHO. Constitution of the world health organization. 1948.
39. Mberu BU, Haregu TN, Kyobutungi C, Ezeh AC. Health and health-related indicators in slum, rural, and urban communities: a comparative analysis. Global health action. 2016;9(1):33163.

40. Tsinda A, Abbott P, Pedley S, Charles K, Adogo J, Okurut K, et al. Challenges to achieving sustainable sanitation in informal settlements of Kigali, Rwanda. Int J Environ Res Public Health. 2013;10(12):6939–54.
41. Ashraf S, Kuang J, Das U, Shpenev A, Thulin E, Bicchieri C. Social beliefs and women's role in sanitation decision making in Bihar, India: An exploratory mixed method study. PLoS ONE. 2022;17(1):e0262643.
42. Subbaraman R, Nolan L, Shitole T, Sawant K, Shitole S, Sood K, et al. The psychological toll of slum living in Mumbai, India: a mixed methods study. Soc Sci Med. 2014;119:155–69.
43. Kikwasi G, Mbuya E. Vulnerability analysis of building structures to floods: The case of flooding informal settlements in Dar es salaam, Tanzania. Int J Building Pathol Adaptation. 2019.
44. Frediani AA. Freetown City: Scoping study 2021.
45. CODOHSAPA FEDURP. SLURC. Community profiling & enumeration report, 2019. 2019.
46. CODOHSAPA. CODOHSAPA_FEDURP-Enumeration-Report__2019. 2019.
47. Bukachi SA, Ngutu M, Muthiru AW, Lépine A, Kadiyala S, Domínguez-Salas P. Gender and sociocultural factors in animal source foods (ASFs) access and consumption in lower-income households in urban informal settings of Nairobi, Kenya. J Health Popul Nutr. 2022;41(1):30.
48. Conteh A, Wilkinson A, Macarthy J. Exploring gender, health, and intersectionality in informal settlements in Freetown. Gend Dev. 2021;29(1):111–29.
49. Citaristi I. United nations human settlements programme—UN-habitat. The Europa Directory of International Organizations 2022: Routledge; 2022. pp. 240–3.
50. Ndeda PC. The Role of International Organizations in Slum Upgrading in Africa-a Case Study of Un-habitat in in Kibera's Soweto East Village Slums, Nairobi, Kenya (2005–2018): university of nairobi; 2018.
51. Zerbo A, Delgado RC, González PA. Vulnerability and everyday health risks of urban informal settlements in Sub-Saharan Africa. Global Health J. 2020;4(2):46–50.
52. Hossain MR, Georgi NW, Noor FM, Aktar B, Karki J, Jahan MN et al. Healthcare in the Margins: A Qualitative Study of Healthcare Access and Utilization in Bangladesh's Informal Urban Settlements: MR Hossain. J Urb Health. 2025:1–12.
53. Corburn J, Sverdlik A. Informal settlements and human health. Integrating human health into urban and transport planning: A framework. 2018:155–71.
54. Koroma B, Macarthy JM, Yusuf Y. Urban Infrastructure and Transit-Oriented Development in Freetown, Sierra Leone. Transit Oriented Development in West African Cities. Springer; 2024. pp. 191–215.
55. Ahmed T, Choudhury N, Hossain MI, Tangsuphoom N, Islam MM, de Pee S, et al. Development and acceptability testing of ready-to-use supplementary food made from locally available food ingredients in Bangladesh. BMC Pediatr. 2014;14:164.

56. Gruebner O, Khan MMH, Lautenbach S, Müller D, Krämer A, Lakes T, et al. Mental health in the slums of Dhaka - a geoepidemiological study. BMC Public Health. 2012;12:177.

Figures

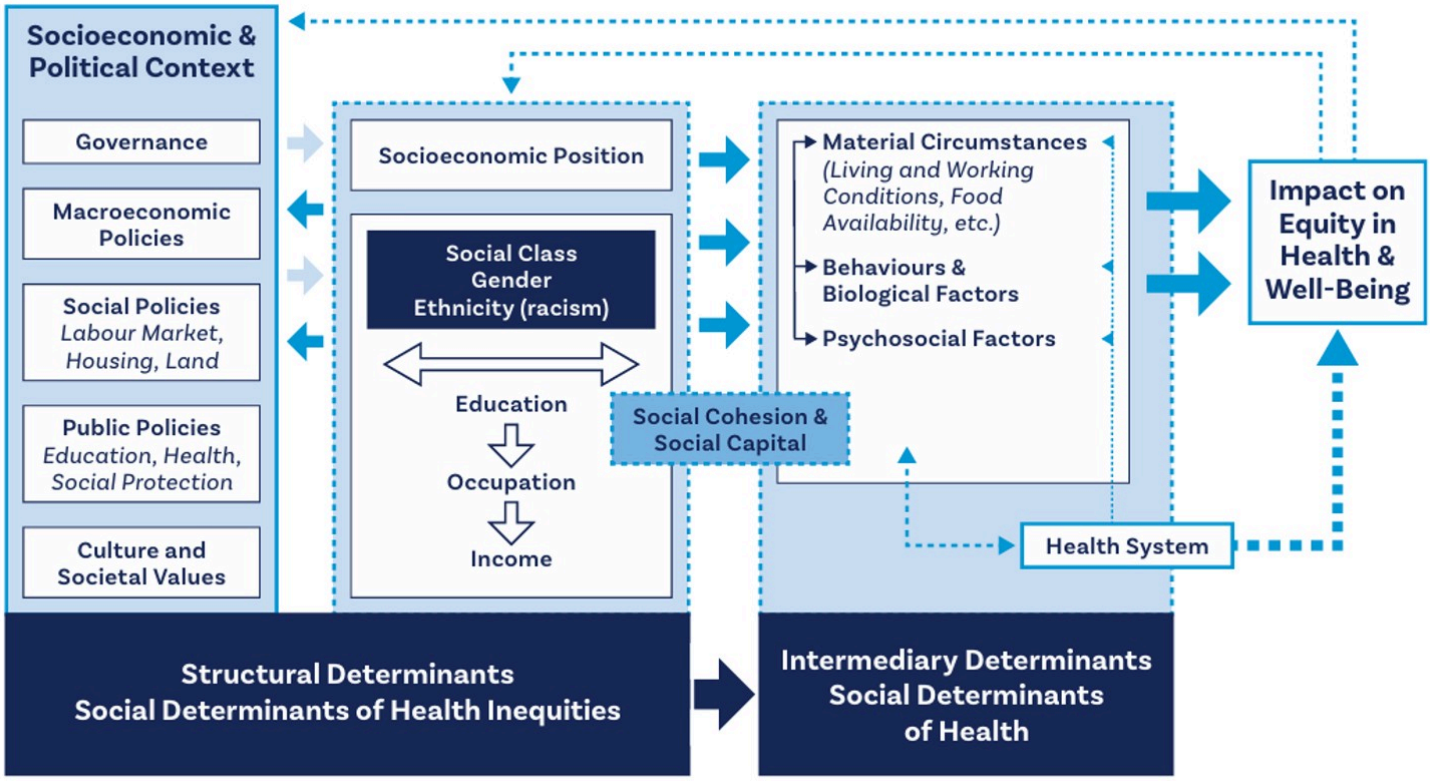


Figure 1

WHO Commission's 2008 conceptual framework on SDH (26)

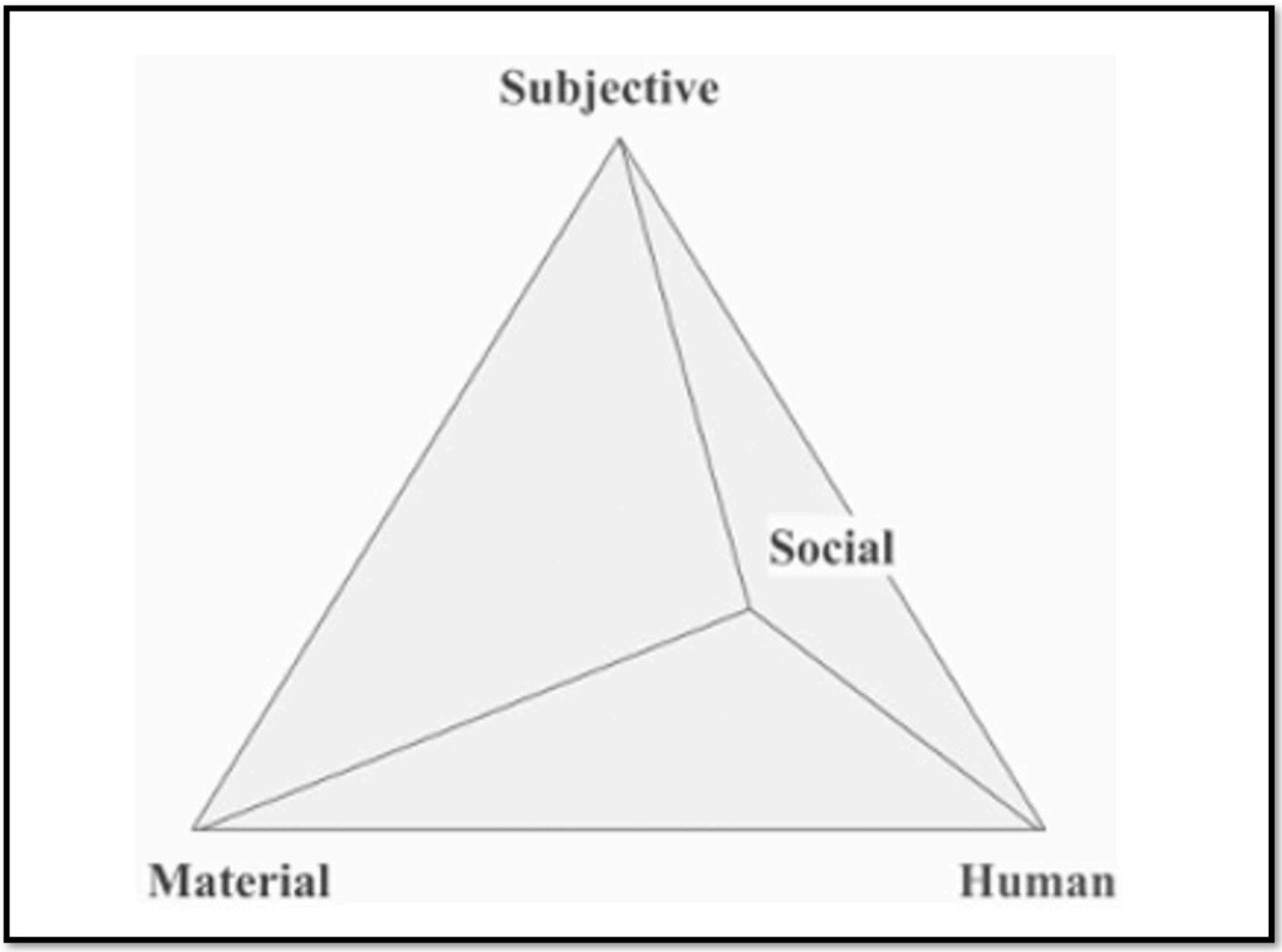


Figure 2

Well-being framework on Health and wellbeing (30)

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