

Health Evaluation and Applied Research Development (HEARD) Project

Urban health assessment: Nutrition and Water Sanitation and Hygiene (WASH) challenges faced by children and adolescents in urban slums in Nairobi

POLICY BRIEF
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Introduction

Kenya's urban population is rapidly increasing, with approximately 32% of the population residing in urban areas. This increase has put pressure on basic facilities such as water, sanitation, security, housing and transportation [1].

In Nairobi, for example, over half of the population resides in slums which have extreme poverty levels and poor access to nutritious food, water and hygiene, and sanitation facilities [2]. These challenges have a negative impact on the growth and survival of children and adolescents who make up close to half (41%) of the urban population [3].

Chronic undernutrition rates among children in slums ranges between 26% and 50% [4-6]. There are currently no definite numbers about the proportion of adolescents who are undernourished in urban slums, but figures from the Kenya Demographic and Health Survey (KDHS) show that nationally, 17% of adolescent girls are malnourished [7]. Given the poor living conditions in slums, it is possible that a large proportion of adolescents in urban slums are also undernourished.

Teenage pregnancies in Kenya are also high as approximately 18% of adolescent girls are pregnant [7]. This has a negative impact not only on their survival, but also on the health and survival of their children.

Poor access to WASH services also remains a challenge in urban slums. Approximately 75% of slum dwellers buy water from kiosks and only 3% of residents have access to public taps [8]. Furthermore, the water that is available is contaminated and requires treatment before use, but many households are not able to afford fuel to boil water [8]. In Nairobi, children living in slums are more likely to die from diarrhea and pneumonia than children in non-slum and rural areas [9, 10]. Considering that poor health and nutrition during childhood and adolescence is associated with poor health outcomes during adulthood, a better understanding of nutrition and WASH challenges facing these two groups as well as current interventions/solutions put in place is required.

The Approach

In this policy brief we present findings from a study which aimed to assess:

- Factors which contribute to poor nutrition (undernutrition, overnutrition and micronutrient deficiencies) and WASH among children and adolescents (0-19 years) living in urban informal settlements.
- Current policies and programs put in place to address poor nutrition and WASH in children and adolescents, with an aim of identifying current effective interventions as well as key areas which require interventions.

The focus areas of this study included:

- Policies and strategies that shape urban nutrition and WASH;
- Socio-cultural and economic factors that influence behaviors related to child nutrition in urban poor contexts;
- Programs and initiatives that shape nutrition and WASH in urban poor areas;
- Key actors and platforms that influence nutrition of children in urban poor contexts;
- Formal/informal systems for healthcare related to child nutrition in urban poor contexts;
- Formal/informal systems for food in urban poor contexts;
- Environmental factors that influence hazardous exposures that can adversely influence child nutrition in urban poor contexts..

The focus areas were assessed using four methods:

1. A **literature review** which aimed to document the evidence available on nutrition and WASH challenges as well as services/ programs and interventions targeting children and adolescents (0-19 years) living in slums in Nairobi. We also documented information gaps related to child and adolescent nutrition.
2. A **review of datasets** available to help estimate nutrition and WASH challenges faced by children and adolescents. We identified and listed characteristics of in-country, city and community-scale datasets that could contribute to enhanced analysis and identification of nutrition-related vulnerabilities to inform decision-making.
3. A **review of existing** which aimed to identify policies, programs and practices that exist or are underway, to address nutrition and WASH vulnerabilities faced by children and adolescents. This was complemented by a stakeholder mapping exercise, which involved identification of nutrition and WASH programs targeting children and adolescents and challenges faced during program implementation.



"These pipes are used to transport clean water and sometimes there are broken sewer pipes right next to clean water pipes that are used in homes to cook and clean. Due to the demand for water it's hard for people to know whether the water they are consuming is good or bad. So they end up using that water without treating it."-Photovoice, Kibera resident

4. We also conducted a **community case study** in Korogocho slum. The aim of the case study was to identify nutrition and WASH vulnerabilities faced by children and adolescents based on the perception of slum residents. We also wanted to find out factors required for successful design and implementation of nutrition and WASH interventions in Korogocho.

Key findings

What evidence exists?

We identified 92 papers from the literature review, most of which, 38, focused on service (health and WASH) and care vulnerabilities (infant, young child and adolescent feeding). Only 12 studies highlighted environmental vulnerabilities. The available evidence suggests:

- There was **poor access and utilization of health facilities** for nutrition services partly because most of the health facilities in slums were unregulated private facilities which lacked adequate staff and equipment to cater to the needs of women and adolescents [11-13]. These facilities were however preferred by residents because they were affordable and easy to access. Among adolescents, poor access to health services was associated with lack of adolescent-friendly services, inadequate school health services, and lack of adequate awareness on available preventive reproductive health services [14].
- **Environmental pollution and childhood disease**, was common in urban poor areas and is associated with diarrhea, iron deficiency and soil transmitted parasitic infections among pre-school and school aged children. Soil samples from slum areas were shown to contain high levels of fecal bacteria [15]. This can be attributed to lack of safe and hygienic toilet facilities and lack of proper sewerage systems, which in turn leads to exposure to human waste [8, 16, 17]. Poor utilization of toilets was attributed to insecurity in slums which limits access especially at night, proximity and cost of toilets [8, 16].

There was also evidence of heavy metal contamination [18], but little is known about its impact on the health of children and adolescents in this context. Poor access to safe portable water was also reported as water samples from slums contained fecal bacteria [17].

- **Maternal perceptions about infant feeding**, and socio-economic and cultural factors played a key role in influencing how mothers choose to feed their infants [19]. Exclusive breastfeeding was influenced by maternal need to look for employment after giving birth, single motherhood, myths about infant feeding and lack of social support [20-22]. As a consequence, caregivers opt to leave their children in daycare centers which were reported to provide sub-optimal child care [23].
- **Potential interventions** that are likely to influence food behaviors and feeding practices included nutrition counselling and maternal support when breastfeeding especially at community level [24, 25].
- There was evidence to show that refugees living in urban slums were vulnerable to nutrition and WASH vulnerabilities, but the data was not disaggregated by age. It was therefore difficult to establish challenges faced by children and adolescents.



There was limited information on nutrition and WASH challenges related to:

- Adolescent nutrition as most studies on adolescent health mainly focused on sexual and reproductive health. There was also limited information about vulnerabilities faced by orphans and street children in urban slums.
- Infant and young child feeding and care among adolescent mothers and the impact of child care practices on child growth and development. This is important given the increasing pregnancy rates among adolescents.
- The quality of child care practices in daycare centers and its impact on child health in informal settlements. This is important given that that daycare centers are widely used by slum residents for child care.
- Nutrition and WASH challenges faced by children and adolescent refugees. Refugees make up a relatively large proportion of the urban informal settlement population [26] and there is therefore a need to assess the challenges they face.

What Data is available to help us estimate nutrition and WASH challenges faced by children and adolescents?

A total of 48 quantitative datasets, which consisted of large nationwide and county surveys such as the Kenya Demographic and Health Survey and the Standardized Monitoring Assessments of Relief Transitions (SMART) survey as well as small surveys (small cross-sectional studies), conducted between 2005-2018 were identified. Information collected from these surveys included child anthropometric measurements (weight and length/height), age, socio-economic status, infant and young child feeding practices (breastfeeding and complementary feeding), water, sanitation and hygiene indicators such as access to water and toilets (Table 2). Some datasets also had information on infections such as diarrhea and parasitic infections.

This data is important as it will help determine the nutrition and WASH needs of children and adolescents. This information will in turn inform programming in urban informal settlements. The following indicators, which are critical for decision making about nutrition and WASH were not adequately covered:

1. Child development (cognitive and psychosocial skills).
2. Undernutrition among adolescents, school aged children, orphans and street children.
3. Access to water and toilets by adolescents, school aged children, orphans and street children.
4. Overweight/obesity and micronutrient deficiencies among children and adolescents
5. Dietary practices among adolescents.
6. Socio-cultural beliefs and practices
7. Infant and young child feeding practices among adolescent mothers.



"Vendors go to the market and bring these part of the fish, after the fillet has been removed, the bones is what he brings. They are dried in the open air on an old metallic bed. If you want to flavor your food and you cannot afford fish, this is what you buy and make soup to flavor your food. It is unhygienic and full of flies."

-Photovoice, Kibera residents

What policies and programs address the needs of children and adolescents in urban informal settlements?

Kenya has various policies addressing health and development challenges, but there is currently little information about how supportive the policy environment is when it comes to addressing the nutrition and WASH needs of children and adolescents in urban areas. A total of 84 policy and policy-related documents were identified.

Only three policy documents were specifically designed to address the needs of urban populations.

These included: 1) **The Urban Nutrition Strategy**; 2) **The Urban and Cities Amendment Act 2019**, which provides definitions of urban areas and cities and provides guidance on service provision within urban areas and cities; and 3) the **Nairobi County Urban Agriculture Promotion and Regulation Act**, which provides the framework for the regulation and control of urban agriculture. Five other national policy documents outlined how to address the needs of the urban poor.

These included the Kenya Environmental Sanitation policy, Food and Nutrition Security Policy, Reproductive Health Policy, Reproductive Maternal, New born, Child and Adolescent Health Policy and the Prototype County Environmental Health and Sanitation Bill, 2016. Stakeholders agreed that Kenya had many policies, what was lacking was context specific implementation strategies.

During the stakeholder mapping exercise, approximately 27 programs were identified, most of which targeted children in urban areas. Programs which targeted adolescents mainly focused on sexual and reproductive health. The following were identified as factors which limit successful program implementation: **corruption, lack of sustainability, lack of financial resources and poor coordination and communication between implementing organizations.**

Table 1: Number of Policy and strategy documents classified by target group

Document type	Adolescent specific	Under 5 specific	General (children and adolescent)	Total
National Policies	1	7	8	16
National Guidelines	2	11	8	21
Policy strategies	0	2	15	17
National action plans	1	0	2	3
Framework	0	2	4	6
Legal documents	0	3	10	13
Manuals/protocols	0	4	4	8
Total	4	29	51	84

Community Case-Study: Nutrition and WASH challenges faced by children and adolescents in Korogocho and programs put in place to address them.

Access to health and nutrition services was poor especially among adolescents and school going children, who accessed health facilities only when they were unwell. Poor access and utilization of health facilities was attributed to lack of medical supplies, cost of treatment, waiting times at the facilities and poor staff interactions. Among adolescents, lack of adolescent friendly services was highlighted as a key reason for poor access.

“...Because pregnant adolescents feel the services close to them are not friendly or they require payment, then they go too far off facilities to meet these needs. Adolescents seeking to get health services that they do not pay for due to their limitation with finances. I started going to clinic early but they used to see me as a child, I am 16 years and they were not treating me well, they used to talk to me in a rude way because I am young...” FGD Adolescent Mothers

Poor infants and young child feeding practices such as limited exclusive breastfeeding in the first six months of life as recommended by the WHO were reported and this was mainly attributed to poverty.

“... I am a ‘hustler’. I don’t have anyone to fend for me. So if I don’t eat, what will him/her breastfeed? So you see, I don’t breastfeed him/her... You are supposed to eat so that he/she eats, so you even find yourself giving the child porridge early.” FGD Caregivers of Children Under 5 years (0-59 months)

The type of food eaten was dependent on financial ability and most diets were monotonous. Street foods were commonly eaten because they were affordable and easier to access. Poor access to food due to poverty was reported as a major barrier to good nutrition. Coping strategies reported included: scavenging in dumpsites, involvement in criminal activities, prostitution, consumption of cheap low-quality foods and skipping meals. Among school children, school meals were the main meals eaten by children, but children and parents complained that the meals were monotonous as they mainly consisted of boiled maize and beans. Poor access to water and toilets and poor waste disposal was also reported. This had a negative impact on health and hygiene practices.

“We do buy water. When you remember that you want the children to eat plus you the mother plus the father you put water in one basin, and not even a lot of water, and soap. Whoever comes from out there having touched any dirt washes there, even one who is from the toilet washes there. You see there, there is no cleanliness you are maintaining because whoever is from the toilet brings his/her dirt there, a young child like this one, you don’t pour that water, you wash him/her in that water...Even the containers we store that water in sometimes we don’t get time to wash them because how will you wash that container and yet that is money, you are still using someone else’s water and you must pay for that water. Sometimes you don’t have money to use to wash that container.” FGD Caregivers of Children Under 5 years (0-59 months)

Various formal and informal programs and interventions were identified, but a key limitation of the programs was that most were following “trends” rather than addressing the needs of the community as stipulated in the excerpt below.

“You go for where the call is if the donors are looking at SDG 1 then you now go for poverty - you know we have to eradicate poverty so everyone is going to eradicate poverty. They forget their SDG 17 (partnership for goals). So you are just moving within where there is donor funding you know. Even when someone is saying, we want to start something now there is a song on global warming.”

Everyone is almost aligning to global warming. Now there are issues on women and gender so everyone goes there. You know it's like we are taken by the trend so if the current is going this way, we all bend this side...So it is really a challenge..” KII, CBO Member, Korogocho.



Conclusions and Policy Recommendations

This project shows that children and adolescents in slums are exposed to various nutrition and WASH challenges which have a negative impact on their health. It also shows that there is information and policies available on nutrition and WASH challenges faced by children and adolescents and programs put in place to address these challenges, but are still major gaps which limit the utilization of this information to inform action. These include:

- 1. The lack of evidence on nutrition and WASH challenges faced by adolescents. There is therefore a need for enhancement of the evidence in this area.**
- 2. There is data available on nutrition and WASH vulnerabilities faced by the urban poor, but most of the data is from small studies which focus on specific informal settlements. There is therefore lack of a comprehensive overview of nutrition and WASH vulnerabilities faced by slum residents. Data collection in urban poor settings can improved by conducting larger scale slum surveys.**
- 3. Kenya has many Nutrition and WASH policies but most of them are national policies which focus on infants and young children. In order to strengthen the policy environment, contextualization of policies and strategies to address the needs of urban poor is required. Involvement of the urban poor in policy and program development is also vital for the design and implementation of successful interventions.**
- 4. There are several nutrition and WASH programs run by different organizations in urban informal settlements. However, there is lack of coordination between key stakeholders. There is therefore a need strengthened stakeholder involvement and cooperation. This can be achieved by promoting transparency and communication between stakeholders working in informal settlements.**

References

1. World Bank, Kenya Urbanization Review 2016, The World Bank: USA.
2. APHRC, Population and Health Dynamics in Nairobi's Informal Settlements: Report of the Nairobi Cross-sectional slum survey (NCSS) 2012. 2014, APHRC: Nairobi.
3. National Council for Population and Development Kenya, The state of Kenya Population 2017. 2018, National Council for Population and Development Nairobi.
4. Kimani-Murage, E.W., et al., Evidence of a Double Burden of Malnutrition in Urban Poor Settings in Nairobi, Kenya. PLoS One, 2015. 10(6): p. e0129943.
5. Olack, B., et al., Nutritional status of under-five children living in an informal urban settlement in Nairobi, Kenya. Journal of health, population, and nutrition, 2011. 29(4): p. 357-363.
6. Concern Worldwide, Nutrition Survey Conducted in the Slums of Nairobi County. 2017, Concern Worldwide: Nairobi.
7. Kenya National Bureau of Statistics, et al., Kenya Demographic and Health Survey 2014. 2015, Kenya National Bureau of Statistics, Ministry of Health/Kenya, National AIDS Control Council/Kenya, Kenya Medical Research Institute, National Council for Population and Development/Kenya, and ICF International: USA.
8. Corburn, J. and C. Hildebrand, Slum Sanitation and the Social Determinants of Women's Health in Nairobi, Kenya. Journal of Environmental and Public Health, 2015. 2015: p. 6
9. Mberu, B.U., et al., Health and health-related indicators in slum, rural, and urban communities: a comparative analysis. Global health Action, 2016. 9: p. 33163-33163.
10. Fotso, J.C., et al., Child growth in urban deprived settings: does household poverty status matter? At which stage of child development? Health Place, 2012. 18(2): p. 375-84.
11. Bazant, E.S., et al., Women's use of private and government health facilities for childbirth in Nairobi's informal settlements. Stud Fam Plann, 2009. 40(1): p. 39-50.
12. Izugbara, C.O., C.W. Kabiru, and E.M. Zulu, Urban poor Kenyan women and hospital-based delivery. Public Health Rep, 2009. 124(4): p. 585-9.
13. Ziraba, A.K., et al., The state of emergency obstetric care services in Nairobi informal settlements and environs: Results from a maternity health facility survey. BMC Health Services Research, 2009. 9: p. 46-46.
14. Kamau, W.A., Factors influencing access and utilisation of preventive reproductive health services by adolescents in Kenya. A case study of Murang'a district, in Faculty of Health Sciences 2006, University of Bielefeld, Germany: Germany.
15. Bauza, V., et al., Soil Ingestion is Associated with Child Diarrhea in an Urban Slum of Nairobi, Kenya. Am J Trop Med Hyg, 2017. 96(3): p. 569-575.
16. Corburn, J. and I. Karanja, Informal settlements and a relational view of health in Nairobi, Kenya: sanitation, gender and dignity. Health Promot Int, 2016. 31(2): p. 258-69.
17. Muoki, M.A., D.S. Tumuti, and G.O. Rombo, Nutrition and public hygiene among children under five years of age in Mukuru slums of Makadara Division, Nairobi. East Afr Med J, 2008. 85(8): p. 386-97.
18. Gallaher, C.M., et al., Real or perceived: the environmental health risks of urban sack gardening in Kibera slums of Nairobi, Kenya. Ecohealth, 2013. 10(1): p. 9-20.
19. Wanjohi, M., et al., Sociocultural factors influencing breastfeeding practices in two slums in Nairobi, Kenya. International breastfeeding journal, 2017. 12: p.5-5.

20. Goudet, S.M., et al., How does Vpoverty affect children's nutritional status in Nairobi slums? A qualitative study of the root causes of undernutrition. *Public health nutrition*, 2017. 20(4): p. 608-619.
21. Kimani-Murage, E.W., et al., Patterns and determinants of breastfeeding and complementary feeding practices in urban informal settlements, Nairobi Kenya. *BMC Public Health*, 2011. 11: p. 396.
22. Kimani-Murage, E.W., et al., Factors affecting actualisation of the WHO breastfeeding recommendations in urban poor settings in Kenya. *Matern Child Nutr*, 2015. 11(3): p.314-32.
23. Mwase, I., et al., Poor Infant Feeding Practices and High Prevalence of Malnutrition in Urban Slum Child Care Centres in Nairobi: A Pilot Study. *J Trop Pediatr*, 2016. 62(1): p. 46-54.
24. Ochola, S.A., D. Labadarios, and R.W. Nduati, Impact of counselling on exclusive breast-feeding practices in a poor urban setting in Kenya: a randomized controlled trial. *Public Health Nutr*, 2013. 16(10): p. 1732-40.
25. Kimani-Murage, E.W., et al., Effectiveness of home-based nutritional counselling and support on exclusive breastfeeding in urban poor settings in Nairobi: a cluster randomized controlled trial. *Global Health*, 2017. 13(1): p. 90.
26. Pavanello, S., S. Elhawary, and S. Pantuliano, Hidden and exposed: Urban Refugees in Nairobi, Kenya. 2010, International Rescue Committee: Nairobi, Kenya.

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