



USAID
FROM THE AMERICAN PEOPLE



African Population and
Health Research Center



USAID'S HEALTH EVALUATION AND APPLIED RESEARCH DEVELOPMENT (HEARD) PROJECT

Urban Health Assessment: Nutrition and Water, Sanitation and Hygiene (WASH) Challenges Facing Children and Adolescents in Urban Slums in Nairobi



Photo: 'Photovoice - Right To Food Project, APHRC'

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 under 5 years 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. Furthermore, the current teenage pregnancy rate in Kenya remains at approximately 18% [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 diarrhoea 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. In this policy brief we present findings from a study which aimed to assess:

- a. Policies and strategies that shape urban nutrition and WASH;
- b. Socio-cultural and economic factors that influence behaviors related to child nutrition in urban poor contexts as understood through available literature and data;
- c. Programs and initiatives that shape nutrition and WASH in urban poor areas;

- d. Key actors and platforms that influence nutrition of children in urban poor contexts;
- e. Formal/informal systems for healthcare related to child nutrition in urban poor contexts;
- f. Formal/informal systems for food in urban poor contexts and;
- g. Environmental factors that influence hazardous exposures that can adversely influence child nutrition in urban poor contexts.

Approach

The focus areas were assessed using four methods:

1. A **literature review** which identified 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 quantitative datasets** available to help estimate the magnitude of 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 policies, programs and practices** which 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.
4. A **community case study** which identified nutrition and WASH vulnerabilities faced by children and adolescents based on the perception of slum residents and factors required for successful design and implementation of nutrition and WASH interventions in Korogocho slum. We also collected information on ongoing programs from key stakeholders from government and non-governmental organizations working in nutrition and WASH during a community mapping exercise. This exercise was complemented with key informant interviews with selected stakeholders as well as focus group discussions with adolescent mothers, caregivers of children under five years and adolescents.

Key Findings

What Evidence Exists?

We identified 92 papers from the literature review, 38 of which focused on service (health and WASH) and care vulnerabilities (infant, young child and adolescent feeding). Twenty papers focused on nutrition and WASH vulnerabilities that influence decision making and 22 papers focused on context specific cultural, economic and social factors that influence nutrition and WASH. Only 12 studies highlighted environmental vulnerabilities. The available evidence suggests:

- Most of the health facilities in slums were **unregulated private facilities** which lacked adequate staff and equipment to cater for the needs of women and adolescents [11-13]. These facilities were however preferred by residents because they were easy to access. Among adolescents, poor utilization of health services was associated with lack of adolescent-friendly services and inadequate school health services [14].
- **Environmental pollution** and childhood infections were common in urban poor areas and 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 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 and feeding [23].
- **Potential interventions** that are likely to influence food behaviors and feeding practices included nutrition counselling and maternal support when breastfeeding especially at the 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 refugee children and adolescents.



Photo: 'Photovoice - Right To Food Project, APHRC'

"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

In summary, the literature review suggests limited information 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.
- 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.
- 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.

What Data is Available to Help us Estimate Nutrition and WASH Challenges Faced by Children and Adolescents?

A total of 48 quantitative datasets were identified, which consisted of large nationwide and county surveys such as the Kenya Demographic and Health Survey (KDHS) and the Standardized Monitoring Assessments of Relief Transitions (SMART) survey as well as small surveys (small cross-sectional studies), conducted between 2005-2018. Information collected from these surveys included: child 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. 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.

However, the following indicators, which are critical for decision making about nutrition and WASH were not adequately covered:

1. Undernutrition (stunting, underweight, wasting and micronutrient deficiencies) among adolescents, school aged children, orphans and street children.
2. Access to water and toilets by adolescents, school aged children, orphans and street children.
3. Dietary practices among adolescents.
4. Infant and young child feeding practices inclusive of dietary diversity, meal frequency and minimum adequate diet among adolescent mothers.

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, specifically, urban informal settlements. A total of 84 policy and policy-related documents were identified. Table 1 provides a summary of the types of documents identified.

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

Only three policy documents were designed to specifically address the needs of urban populations. These include: 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 in Nairobi. Five other national policy documents were not urban-centric, but addressed 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, 25 health, nutrition and WASH programs in Nairobi were identified. Nine programs targeting children, mainly focused on breastfeeding, nutrition supplementation and WASH, while two programs targeting adolescents, mainly focused on sexual and reproductive health. The rest of the programs, focused on health, nutrition and WASH in the general population. Three slum improvement programs, which aim to improve housing and infrastructure in informal settlements were also identified; 1) the Kenya Slum Upgrading Programme, which is run by the Ministry of Housing in collaboration with UN Habitat; 2) Mathare IVA housing project, which was managed Amani trust by a faith-based organization and the Government; 3) the Kenya Informal Settlement Improvement Program, which is led by the Kenyan government with support from the World Bank.

Community Case-Study: Addressing Nutrition and WASH Challenges Faced by Children and Adolescents in Korogocho

Korogocho slum, located in the North Eastern part of Nairobi, covers approximately 1.5 square kilometers and is home to about 150,000 people. The following highlight key nutrition and WASH challenges from the community members' perspectives.

Access to health and nutrition services was poor especially among adolescents and school going children, who went to 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 to far off facilities to meet these needs. Adolescents look for free health services due to their limited 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 infant 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 he/she 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 characterized by low intake of animal source proteins and regular intake of carbohydrate-based foods. 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 in [to the home] having touched any dirt washes there. Even one who is from the toilet washes there. You see, there is no cleanliness you are maintaining because whoever is from the toilet brings his/her dirt there. You wash a young child like this one there but you don't pour 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,



Photo: 'Photovoice - Right To Food Project, APHRC'

"Many children are left at home without food or just a cup of porridge for the whole day. It is not a surprise to find young children taking care of their siblings as their parents; mostly the mother goes out to look for money to sustain the family" – Women, Mukuru Kwa Ruben.



Photo: 'Photovoice - Right To Food Project, APHRC'

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

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)

Formal and informal programs and interventions were identified, but a key limitation of the programs was that the appropriation of funds from donors changed with time to reflect the global trends on emerging thematic areas of interests forcing many community-based organizations to shift their priorities to align to the trends in order to get funding for their life line. This meant that most project implementation periods were too short to addresses the problems at hand.

"You go where the call is. If the donors are looking at SDG1, then you now go for poverty. You know we have to eradicate poverty so everyone is going to eradicated poverty. They forget their SDG 17, partnership for goals. So you are just moving 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 aligns with 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.

The evidence presented suggests children and adolescents in slums are exposed to various nutrition and WASH challenges, which have a negative impact on their health. This is despite existing policies and programs which aim to address these challenges. It also underscores the need for implementation strategies and research especially in the area of adolescent nutrition.

Recommendations for Researchers

- Limited evidence on nutrition and WASH challenges faced by adolescents. Surveys which quantify malnutrition rates as well as the impact of WASH challenges on the health of adolescents are required. This information will influence funding and the design of adolescent friendly interventions. There is therefore a need for enhancement of the evidence in this area
- There is quantitative 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 lacks a comprehensive overview of nutrition and WASH vulnerabilities faced by slum residents. Data collection in urban poor settings can be improved by conducting larger scale slum surveys so indicators can be tracked on a larger scale over time.

Recommendations for Policy Makers

- 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 the 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.
- More initiatives such as the Kenya slum upgrading project, which encourage multisectoral dialogue, collaborations and partnerships should be promoted. This will ensure the design of comprehensive and sustainable projects.
- A list of organizations and nutrition and WASH projects prepared by the government and development partners to help inform upcoming projects. This will go a long way in reducing duplication and would help identify gaps.

Recommendations for Program Implementers

- 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 an opportunity to strengthen stakeholder involvement and cooperation. This can be achieved by promoting accountability and exchange of information between stakeholders working in informal settlements about on-going programs and interventions.

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 poverty 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.

Contributors

African Population and Health Research Center

- Dr. Elizabeth Kimani-Murage
- Dr. Antonina N. Mutoro
- Dr. Tadesse Zerfu
- Ms. Milka N. Wanjohi
- Ms. Esther L. Anono

Acknowledgements

This project was funded by the United States Agency for International Development (USAID) through University Research Co., LLC (URC), the prime recipient. We acknowledge key stakeholders in Nutrition and WASH from government, county and sub-county level, the Division of Nutrition, Ministry of Health non-governmental and community-based organizations for their participation in the policy and community mapping exercise. We also thank the Nutrition Research Technical Working Group for their contribution, the study community in Korogocho for their participation in the project and the Policy Engagement and Communications team at APHRC for their support. We acknowledge support from the APHRC Right to Food project funded by the Wellcome Trust that shared pictures highlighting the urban nutrition and sanitation conditions highlighted in this policy brief.

Health Evaluation and Applied Research Development (HEARD) is funded by the United States Agency for International Development (USAID) under cooperative agreement number AID-OAA-A-17-00002. The project team includes prime recipient, University Research Co., LLC (URC) and sub-recipient organizations. This report was produced for review by the United States Agency for International Development (USAID). It was prepared by APHRC, and was authored by Dr. Elizabeth Kimani-Murage, Dr. Antonina Mutoro, Dr. Tadesse Zerfu, Milka Wanjohi and Esther Anono. This report is made possible by the support of the American People through the United States Agency for International Development (USAID). The contents of this report and findings of this study are the sole responsibility of APHRC and do not necessarily reflect the views of USAID or the United States Government.

Contact Persons: Dr. Elizabeth Kimani-Murage, APHRC email: ekimani@aphrc.org
Ms Milka N. Wanjohi email: mwanjohi@aphrc.org

About the African Population and Health Research Center (APHRC)

The African Population and Health Research Center is the continent's premier research institution and think tank, generating evidence to drive policy action to improve the health and wellbeing of African people.

Contact details

African Population and Health Research Center
APHRC Campus, 2nd floor, Manga Close, Off Kirawa Road
P.O Box 10787-00100 Nairobi, Kenya
Email: info@aphrc.org | www.aphrc.org