E-ISSN 2709-569X
Vol 06 No 01 June 2021

AFJHMS African Journal of Health and Medical Sciences

Original Article

EVALUATION OF THE AVAILABILITY OF SAFE WATER AND SANITATION FACILITIES IN IDP CAMPs KAHDA DISTRICT IN MOGADISHU SOMALIA

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(Received 29, March 2021; Accepted 28, May 2021; Published 17, June 2021)

Abstract

Background: Water, Sanitation, and Hygiene (WASH) is generally a challenge in Somalia, particularly in IDP settlements where access to water and sanitation facilities is limited. Children, particularly those under the age of 5 years, mostly fall victim to diseases caused by poor sanitation and hygiene practices. The objective of this study was to evaluate the availability of safe water and sanitation facilities in internally displaced (IDP) camps in kahda district Mogadishu Somalia.

Methods: This study was a descriptive cross-sectional baseline assessment. The study areas included 4 IDP camps in Kahda district with a sample size of 163 households, drawn from 270 households from selected 4IDPs. Closed-ended questionnaires and observational checklists were used as data collection tools, and the study employed descriptive statistics with frequencies and percent in tables.

Results: Of the total 163 households, about 84 (51.5%) household's water sources were hand-dug well with pump, and Most of the households 100 (61.3%); spent 3km walk to obtain water from their nearest point source. Regarding water consumption per day, about 66(40.5%) households had consumed 120 liters per day and 39 (23.9%) of households with 61-90 liters of water per day, and 38 (23.3%) households with 40 -60 liters. Besides, more than half of respondents, 113 (69.3%), did not have enough water, with a considerable number of households 105 (64.4%) do not perform water treatment to improve the quality of their drinking water. Many households did not have latrines, with the majority of them sharing latrines with neighbors. Those who had latrines were unhygienic, and a majority of the respondents admitted they do not wash their hands after using toilets.

Conclusion: The study reveals the low availability of water and sanitation facilities among IDPs in kahda districts. Though they were low socio-economic status groups, health promotion related to infection control measures and maintenance of personal hygiene should be provided.

Keywords: evaluation of safe water and sanitation facilities, Somalia.

Introduction

Clean water, availability of toilets, and good hygiene practices are essential for the survival and development of children. Globally, there are 2.4 billion people who live without adequate sanitation, 663 million do not have access to improved water sources, and 946 million still defecate in the open, and Children under the age of five years are the most affected as they are prone to water-borne diseases, especially diarrhea. It is estimated that over 800,000 children die annually from preventable diseases caused by insufficient water, lack of sanitation, and poor hygiene. [1]

Access to safe water, sanitation, and hygiene (WASH) facilities is considered a basic human necessity for survival and wellbeing; without these basic needs, the health conditions of millions of people, especially children, are at risk. However, 2.3 billion and 844 million people across the globe lack access to basic drinking water and sanitation facilities, respectively, causing 842,000 deaths every year, which is undoubtedly a significant public health concern. [2]

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In low-income countries such as Uganda, particularly in slums, Poor water, sanitation, and hygiene (WASH) continue to contribute to the high prevalence of diarrheal diseases. In many African countries, including Uganda, there has been a rapid growth of slum populations that are majorly situated in urban settings such as towns and cities. Slum dwellings are characterized by several problems that only vary in magnitude from one place to another, including poor solid waste management; improper excreta and wastewater management; unequipped drainage, especially of stormwater; poor housing conditions; insufficient drinking water; unsafe food; deficient vector and vermin control; and inadequate personal and general hygiene. [3]

WASH services are considered means of contacting and at the same time preventing diseases. It has been estimated that overall, 9% of the global burden of disease could be prevented through the improvement of inadequate WASH facilities. Children are one of the most vulnerable groups affected by a lack of water, sanitation, and hygiene facilities. In developing countries, the high mortality rate resulting from diarrheal among children under five was majorly due to WASH challenges. [2]

In Somalia, 2.7 million people are still in need of humanitarian WASH support [4]. Over the last two decades, persistent droughts in Somalia have devastated the water sector. Quantities are reduced and unpredictable, the quality deteriorated, and pricing became unregulated to exploitative levels. Primary water sources like open water wells and tube wells drilled to deeper aquifers became highly unreliable. Periodic droughts and uncontrolled discharges depleted the freshwater aquifers, resulting in reduced surface water flow and high livestock deaths, leading to long-term damage to resilience, health, and social wellbeing. From March 2016 to March 2017, the Shebelle river dried out completely, unseen in over 30 years. The water supply and sanitation-related damages include the complete drying up of boreholes, shallow wells, hand-dug wells, beads, dams, water pans, and springs. This resulted in higher water quality access costs to households. [5] Conflicts in Somalia have weakened the water supply and sanitation services. In addition to direct destruction of WASH facilities by inter and intra social groups, a large number of Internally Displaced Peoples (IDP) settlement in urban and semi-urban areas are seriously stressing the existing WASH services by over-pumping of the groundwater, worn out of pumps, generators and distribution infrastructure. [5]

Methodology

The study was a descriptive cross-sectional baseline assessment conducted from December/2017-august/2018 at selected 4 IDP camps in kahda district in Mogadishu –Somalia.

Sample size and Sample procedure

The sample size was 163 households, draw from 270 households from selected 4IDPs using Cochran's formula for calculating sample size when population size is finite, and procedure sampling was used convenience Non-probability technique and proportionate sampling of each IDP.

Data collection tools

Administrated closed-ended questionnaire and observational checklist was used as data collection tools.

Statistical data analysis

All data collected were processed and analyzed using the statistical package for the Social Science technique (SPSS) program (version 20.0). Descriptive statistics were used to present data using frequency, percentage, and graphs.

Ethical consideration of the study

The study obtained ethical approval from the research ethics committee of Jamhuriya University of Science and Technology. District administration granted permission to conduct this study in the hospital. All study populations were included in this study after accepting verbal consent, respecting the ethical values, confidentiality, and moral expectations.

Results

According to demographic characteristics The majority of the respondents 127 (77.9%) were female and 36 (22.1%) were male that means women are more likely to stay houses for caring children and 58(35.6%) were b/w 5-6 members, 57 (35.0%) were b/w 2-4, 34 (20.9%) were 7 and above and rest of households 14 (8.6%) were 2 members only Table 1. also the results showed 84 (51.5%); of the households their source of water were hand dug well with pump, and Most of the households 100 (61.3%); it takes 3km walk to get a water from their nearest point source and 66(40.5%); were used 120 liters per day and 39 (23.9%) of households were used 61-90 liters of water per day and 38 (23.3%) were used per day 40 -60 liters, and more than half of respondents 113 (69.3%) Did not satisfy the water they receive and very large number of households 105 (64.4%) they don't do anything of treatment to improve quality of their drinking water and the study also founded that 21 (12.9 %) of the households do not have latrine and 153 (93.9%) of the households share latrine with their neighbor that can result many unhygienic problems and 117 (71.8%) of the households do not wash their hands after using toilet and Most of the households their water containers 85 (52.1%) were generally dirty and rest others 78 (47.9%) were not generally dirty.

Table 1 Characteristics of study respondents (N = 163) of participants atselected 4IDPs in kahda district, Mogadishu, Somalia

Characteristics	Total (%)
gender	
Male	36 (22.1)
Female	127 (77.9)
household members	
2 only	14 (8.6)
2-4	57 (35)
5-6	58 (35.6)
7 and above	34 (20.9)

Table 2 Availability of safe drinking water among households in IDP camp (N=163) at kahda district, Mogadishu, Somalia.

Variables	Frequency	%
Where is the main source of your household drinking water?		
Piped water	56	34
Hand dug well with pump	84	52
From vendors	16	10
Pond water	7	4
How long does it take you to fetch water from nearest water point?		
less than 30 minutes	19	12
30 m-1hr	100	61
1hr and half - 2hr	35	22
above 2hr	9	6
less than 30 minutes	19	12
Daily water consumption in litters		
40-60 liters	38	23.3
61-90 liters	39	23.9
91-120 liters	20	12.3
120 liters and above	66	40.5
The water you are receiving enough to satisfy your household basic needs?		
Yes	50	30.7
No	113	69.3
Do you perform water treatment to improve the quality of drinking water in your household?		
Yes	55	34
No	108	66

Table 3 Availability of safe sanitation facilities among households in IDP camp (N=163) at kahda district, Mogadishu, Somalia.

Variables	Frequency	%
The availability of latrine in your household		
Yes	142	87
No	21	13
What type of latrine do you have in your household?		
Traditional pit latrine	157	96
Others	6	4
Household usually dispose children feces into the laterine facilitiy		
Yes	153	94
No	10	6
Latrines was clean		
Yes	45	28
No	118	72
The intention to wash hands after use of toilet?		
Yes	46	28
No	117	72

Discussion

Based on the results found in previous studies, The majority of the respondents, 756 (94.4%), were mothers and the remaining 45 (5.6%) were their spouse, and Five hundred eighty-eight (73.4%) mothers and 458 (66.1%) fathers were illiterate whereas the majority (89.5%) of respondents were married and 602 (75%) had a family size of five or more with a mean family size of 5.95 (±1.944 SD) persons. [6]

the study results in Kenya showed, most of the respondents (51%) obtained their water from open sources, and the remaining 49% obtained water from boreholes (41%) and taps (8%), which are relatively safer for drinking as they are less exposed and the majority of households (81%) do not treat drinking water at the household level. Eighty-six percent of households use narrow-mouthed containers for storing drinking water. The respondents were further asked about the water treatment methods they used on the water they perceived unsafe for drinking. [7]

The river water users' results were given; 50% used chlorination while the remaining 50% boiled their water. Using tap water, 12.5% used boiling, 50% used chlorination, with 37.7% using filtration. Among the borehole water users, 95% used chlorination, and 5% filtered their water. The average water collection time is 46.5 minutes, and it took less than 30 minutes to collect water (including two-way travel and queuing time) for 48% of households, and more than a third (37%) of households do not have access to toilet facilities (7)

For the people (39%), 28,748 individuals (13,811 Male, 14,937 Females) do not have access to an improved water point. The reason is that they are not stable in a location and regularly change their Locations due to some issues between communities. Also, some area representatives do not allow other Site people to collect the water from Water Tank Installed in the other community. [8]

Most families have fewer water containers than specified by international practice (2 containers, one to collect and one to store). Furthermore, many of HH have less than 75 liters (15 l/p/day for a HH of five persons) of storage capacity; thus, they would cope with eventual shortages of water in their supply in an undesired way (reducing water consumption, significantly reducing water for personal or HH hygiene). (8)

There is an inadequate quantity of improved latrines. The JMCNA additionally found that shared latrines reportedly remain common as reported by 46% of the households with access to latrines, 12 though almost no FGD participants supported having shared latrines because of the lack of privacy and cleanliness. 13 If it cannot be avoided, respondents reported not wanting to share latrines with more than

two other households.14 For households with access to a latrine, more than half nationally (54%) reported having their latrine, while the rest (46%) reportedly use shared facilities.15 Non-displaced households (60%) were reportedly twice as likely to have private latrines than displaced households (31%).16 The majority of FGD participants reported supporting the gender separation of shared latrines [9].

Types of available latrines in the district were 100% simple pit latrines. About 764 (95.4%) latrines were privately owned, and the rest 37 (4.6%) was shared with their neighbors. Five hundred forty-six (68.2%) of latrines were constructed two years. [6]
Defecation practices were investigated for the three populations of concern, with very different results. In general, latrine coverage is deficient, 62% of people (21,573 Male, 22,654 Female) have access to latrines, and just 71% of Latrines are functional, and 81% of interviewed people confirmed availability of some Hygiene Material for their use, but 19% confirmed that they do not have any hygiene materials for their daily use. [8] Based on the result of Ethiopia, up to 60% of the current disease burden is attributable to poor sanitation. Latrine facility coverage is increasing since Health Extension Program started, whereas less attention to the quality and utilization of latrine facilities in rural Ethiopia. Whereas a total of 801 households with latrines were assessed for their latrine utilization status. The extent of latrine utilization among 490 (61.2%) households was satisfactory, and the Types of available latrines in the district were 100% simple pit latrines. About 764 (95.4%) latrines were privately owned, and the rest 37 (4.6%) was shared with their neighbors (10)

As a result of the functional latrines, almost all latrine slabs were made of mainly wood and mud; from this, 464 (76.1%) were sealed with mud, and the remaining 144 (23.6%) have no properly constructed slab and only one cemented. About 290 (52.4%) of latrines had no cover on the squatting hole, and Handwashing practices were measured through proxy indicators that focus on the existence of handwashing devices near the latrine. Only 164 (26.9%) latrines have handwashing devices. Water was observed in 124 (75.6%) households, and among this soap, ash was observed only in 42 (25.6%) and 23 (14.0%) handwashing stations, respectively. Among all functional latrines, only 65 (10.7%) of households with access to a place to wash hands have all essential supplies, and Among the 226 households with 3-5 years of children, only 20 (8.8%) children were children using latrines. Of those households which have ≤5 children, 133 (31.7%) households disposed their children's feces improperly by disposing of out of houses somewhere either in the backyard or in the nearby bush. (11)

The limitation of this study was the language because they were uneducated people, so we tried to translate questions into the Somali language. Also, we did not have water tests such as water test kits.

Conclusion

Water, Sanitation, and Hygiene (WASH) is generally a challenge in Somalia, particularly in IDP settlements where access to water and sanitation facilities is limited, and it proves that the water source is far from. Longer than three times more than the standard, the quality of drinking water was not good, and the knowledge of the dwellers for the treatment of drinking water needs to improve. Some households do not have a latrine, and even those who had latrines were poor hygienic and shared with their neighbors.

Acknowledgments

The writers would like to express gratitude to Jamhuriya University of Science and Technology, Mogadishu, Somalia, for providing the opportunity, guidence, and funding that conducted this study.

Conflict of interests: No conflict of interests is declared.

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