ORIGINAL ARTICLE

EVALUATION OF ACCESS TO WATER, HYGIENE AND SANITATION IN CARE STRUCTURES IN THE PROVINCE OF TANGANYIKA IN THE DEMOCRATIC REPUBLIC OF CONGO

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ABSTRACT

Background: The Democratic Republic of Congo did not achieve the millennium development goals related to water and sanitation in 2015 with only 52% of the population having access to an improved water point and 29% to improved sanitation facilities. This study is a part of a search for some of the problems related to access to water, hygiene and sanitation in health care facilities in Tanganyika Province, Democratic Republic of the Congo. **Objective**: Its purpose is to assess access to water, hygiene and sanitation in health structures in Tanganyika province, Democratic Republic of Congo. **Methods**: To do this, we set up a descriptive study of the period from June to September 2021, covering 92 Medical structures distributed in the health areas of Tanganyika province. **Results**: After analyzing the data collected, we found that 81.5% of the health care facilities are not in permanent use, they remain either undeveloped springs or a lake or river. In addition, the users, i.e. the patients, their guards and health workers will have to go more than 30 minutes to be prosecuted. The structures of Tanganyika province do not have sinks in every pavilion or room Sick, they store their water in uncovered containers and they do not have soap or ashes for hand washing. But the parties have makeshift toilets, but those that have not yet left, the sick, their guards as well as the staff are forced to get rid of themselves in the open, with all the risk associated with this practice. The presence of weeds and stagnant water in the courtyard and around many structures, the lack of hygiene, but also many cases of water-related diseases, such as cholera, typhoid fever, schistosomiasis, diarrhea, dysentery and polio.
Keywords: *Water, Hygiene, Sanitation, Care Structures.*

1. INTRODUCTION

It is very important for public health to have easy access to safe water, whether for drinking, for domestic use, for food production or for recreation. Improved water supply and sanitation and better management of water resources can boost the economic growth of countries and contribute significantly to poverty reduction. In 2010, the United Nations General Assembly explicitly recognized the right to safe drinking water and sanitation as a human right. Everyone has the right to sufficient, continuous, safe, acceptable and affordable access to water for personal and domestic use. Being the third component of primary health care resulting from the ALMA ATA international conference in 1978, and constituting the seventh millennium development goal to be achieved between 2000 and 2015 [1], the supply of drinking water and basic sanitation for all remains one of the concerns at the heart of decision-makers and constitutes to this day, not only the sixth sustainable development goal, but water is present in seven other sustainable development goals, either mentioned directly or indirectly [2]. In this area, Africa today displays an unprecedented level of commitment. Programs are developed by national services, associations and organizations both national and international to inform populations on the one hand and promote their access to water, hygiene and sanitation on the other hand [3]. And while household access to safe drinking water and basic sanitation remains the primary concern of international consultations, recommendations now appear in the goal tracking documents monitoring documents for institutions, including schools, health structures and workplaces, where the lack of access to drinking water, hygiene and sanitation also have impacts on the health, well-being and productivity of populations [4].

The Democratic Republic of Congo did not achieve the millennium development goals related to water and sanitation in 2015 with only 52% of the population having access to an improved water point and 29% to improved sanitation facilities, against 71% and 51% respectively expected under the Millennium Development Goals, with the adoption of the Sustainable Development Goals for the period 2016 - 2030, with regard to Goal No. 6, the National Strategic Development Plan (PNSD) 2017 - 2022 has been put in place [4]. This reflects the country's commitments and thus aims to "ensure equitable access for the entire population to drinking water, at an affordable cost, as well as to adequate sanitation and

hygiene services". The PNSD thus aims to increase drinking water coverage from 52% to 65% and sanitation coverage from 21% to 40% by 2022 [4]. It is in this perspective that, given on the one hand the scale of the mobilization for good access to water, hygiene and sanitation, and on the other hand the consequences of the lack of this access, more particularly in the health structures which become by this effect places at high risk of infection, we, as Expert in public health considered useful to carry out a study on this aspect of the things. Worldwide, 2 billion people use water sources contaminated with faeces. Contaminated water can transmit diseases such as diarrhea, dysentery, cholera, typhoid, hepatitis A and poliomyelitis. Contaminated drinking water is estimated to cause more than 502,000 deaths from diarrhea each year. By 2025, more than half of the world's population will live in water-stressed regions. In low- and middle-income countries, 38% of health facilities have no access to a water point, 19% have no improved sanitation facilities and 35% have no water and soap for washing hands [5].

In many countries, water and sanitation-related infections have a high prevalence, causing illness or even death for many people, especially children. Improving hygiene habits is essential to limit the transmission of water and sanitation-related diseases. Although hygiene education can lead to the intention to change behavior, it only happens when people have the right water and sanitation facilities. According to the UNICEF report published in 2017; 2.1 billion people, or 30% of the world's population, still do not have access to domestic drinking water supply services and 4.4 billion, or 60% of the world's population, do not have sanitation services safely managed [6].

This report adds that of the 2.1 billion people who do not have access to a safely managed domestic drinking water supply service, 844 million do not even benefit from a basic water supply service. 263 million live more than 30 minutes from the first water point and 159 million continue to drink untreated surface water drawn from rivers or lakes. And of the 4.4 billion people who do not have access to safely managed sanitation, 2.3 billion still lack basic sanitation facilities and of these, 600 million people share toilets with other households and 892 million who mostly live in rural areas, defecate in the open air, a practice that is increasing in sub-Saharan Africa and Oceania due to population growth [2]. This has the consequence: 2.6 million people die each year due to water-related diseases and an unsanitary environment [7]. Diarrhea is the second leading cause of death in low-income countries and was responsible for 57.2 deaths per 100,000 inhabitants in 2018. And every year, diarrhea causes the death of 760,000 children under the age of 5 worldwide. In other words, a child under the age of 5 dies every 40 seconds in a row from an illness linked to poor sanitation [8].

With regard to sub-Saharan Africa, it should be noted that 319 million or 48% of the people who still do not have access to an improved water source live there. The improved water source coverage rate is 68%. In sub-Saharan Africa, three-quarters of households fetch their water outside the home. In 50 to 85% of cases, women are responsible for this task. 8 out of 10 people who are deprived of access to an improved water source live in rural areas. 102 million people only have access to untreated surface water. Sanitation coverage in sub-Saharan Africa is 30%, 70% of people who do not have access to an improved sanitation facility live in rural areas, 9 out of 10 people who practice open defecation there live in rural areas too, and 46% of diarrhea cases each year are in Africa. At least a third of hospitals in developing countries lack clean running water, leading to unsanitary conditions and further spread of disease in drought-affected areas [9].

As for the Democratic Republic of Congo, the Joint Monitoring Program (JMP) 2017 reveals that 42% of the population has at least basic access to drinking water at the national level, 21% in rural areas and 70% in urban areas. . 10% of the population has access only to untreated surface water at the national level, 16% in rural areas, 2% in urban areas. The rate of access to sanitation varies in level of at least elementary service from 20% at the national level, 18% in rural areas and 23% in urban areas. There is 12% open air defecation at the national level, 18% in rural areas and 4% in urban areas. And for the rate of access to hygiene according to the new levels of service, we note in the Democratic Republic of Congo a level of service at least basic of 4% at the national level, 2% in rural areas and 7% in urban areas. 80% of the population has no sanitation facilities at the national level, 87% in rural areas and 81% in urban areas [10]. The aforementioned situation is not absent in our study environment, the Province of Tanganyika where the Provincial Health Division reports some cases of water-related diseases, as well as those of diseases related to the poor state of hygiene of the following way:

1. Cholera: 4,951 cases with 64 deaths;

2. Simple diarrhea: 68,731 cases with 36 deaths;

3. Typhoid fever: 8,268 cases with 5 deaths;

4. Dysentery: 1,982 cases with 01 death;

5. Malaria: 355,435 cases with 949 deaths.

Faced with this public health problem, several concerns can be raised. And during this study, ours is geared towards healthcare facilities.

The only concern that we make our own and that we put at the heart of this study is that of knowing the state of play of our health care establishments in terms of water, hygiene and sanitation.

GOALS

The purpose of our study is to assess access to water, hygiene and sanitation in healthcare facilities in the Democratic Republic of Congo; with the specific objectives of:

1. Review available data on water, sanitation and hygiene in health facilities;
2. Determine coverage of water supply and sanitation facilities in medical facilities;
3. Assess the rate of water-borne diseases, poor sanitation or hygiene contracted in the hospital by both patients and caregivers.

2. MATERIALS AND METHODS

2.1 Study design

Our study is a descriptive cross-sectional study. The population of our study is made up of private and state healthcare structures in the Province of Tanganyika. The duration of our work is 4 months, from June to September 2021.

- Drawn a sample from health structures in Tanganyika Province;

- Used stratified random sampling, considering 30% of the total population of our study, which includes Eleven Health Zones, with a total of 308 Private and State Health Structures. After drawing lots, ninety-two structures were selected; which is our sample size; this is our studied population

- Drafted a survey questionnaire in accordance with the objectives we set ourselves;

- Collected our data using the survey questionnaire, through a field visit;

- Observed the rules of ethics by respecting the dignity of all our respondents;

- Processed the data using a computer, using Excel, Word and Epi Info software version 3.5.1.

2.1 Study area and population

The study was conducted in the Province of Tanganyika. We have included all private and state structures in the Province of Tanganyika. The excluded criteria are all private or state structures not belonging to the Province of Tanganyika. This province is located in the south-east of the Democratic Republic of Congo, between 5° and 7° 04 'south latitude and 26° and 29° east longitude; with an area of 150,823 km2 covering a total population of 3,079,163 inhabitants, with a density of 20 inhabitants/km2. It should also be said that the Province of Tanganyika includes 11 Health Zones, with a total of 308 private structures, health centers, reference health centers, general reference hospitals and university clinics of the University of Kalemie. Thus, our sampling base is 308 structures. But, considering accessibility and time; as well as the limited means, we opted for convenience sampling, by surveying 30% of these structures; which gave us 92 structures that we investigated. It is true that, to approach this theme, many aspects can always intervene; but we focused exclusively on factors related to basic water, hygiene and sanitation in the health facilities we visited.

3. RESULTATS

Our results are presented in the table below:

Table 1: Data related to water, hygiene and sanitation in medical structures.

N°	Parameters	Explosion of parameters	Number	%
01	Faucets in the yard	No	75	81,5
		Yes	17	18,5
	Total		**92**	**100**
02	Origin of the water used in the structure	Other specify	1	1,3
		At the neighbors of the structure	9	12,0
		Lake or River	18	24,0
		Furnished wells	22	29,3
		Undeveloped springs	25	33,3
	Total		**75**	**100**
03	Distance traveled between the water point and the outward and return structure	Less than 30 minutes	46	50,0
		More than 30 minutes	46	50,0
	Total		**92**	**100**
04	Washbasins in each Pavilion or each Sick Room	No	74	80,4
		Yes	18	19,6
	Total		**92**	**100**
05	Presence of soap or ash on each sink	No	13	72,2
	Water containers used	Yes	05	27,8
	Total		**18**	**100**
06	Presence of latrines	Covered	33	35,9
		Not covered	59	64,1
	Total		**92**	**100**
07	In the absence of latrines	No	24	26,1
		Yes	68	73,9
	Total		**92**	**100**
08	Separate blocks for men and women	They defecate in the open	15	79,2
		They go to the neighbors of the structure	19	20,8
	Total		**24**	**100**
09	Bins in each Pavilion	No	39	42,4
		Yes	53	57,6
	Total		**92**	**100**
10	Presence of garbage cans in the courtyard of the structure	No	72	78,3
		Yes	20	21,7
	Stagnant water in the courtyard of the care structure			
11	**Total**		**92**	**100**
	Presence of grass around the structure	No	80	87,0
		Yes	12	13,0
	Total		**92**	**100**
12	Case of waterborne diseases	No	74	80,4
		Yes	18	19,6
	Total		**92**	**100**
13	Waterborne diseases encountered in the structure	No	33	35,9
		Yes	59	64,1
	Total		**92**	**100**
14	Illnesses linked to poor sanitation or hygiene Encountered in the medical structure	No	28	30,4
		Yes	64	69,6
	Total		**92**	**100**
15	Cases of nosocomial infections encountered in the structure	Cholera	13	20,3
		Diarrhea	19	29,7
		Dysentery	5	7,8
		Poliomyelitis	6	9,4
		Schistosomiasis	4	6,2
		Typhoid	17	26,6
	Total		**64**	**100**
16		Cholera	12	18,8
		Typhoid	10	15,6
		Malaria	42	65,6
	Total		**64**	**100**
	17	No	50	54,3
		Yes	42	45,7
	Total		**64**	**100**

As presented in the table above, it appears that 81.5% of the structures do not have taps in the courtyard of their structures, 57.3% of the structures use water either from undeveloped springs or from lakes or rivers, 50% of the structures walk more than 30 minutes, and 80.4% of the structures do not have sinks in each ward or in each patient room. Similarly, 72.2% do not have soap or ashes on their sinks, 64.1% of structures store their water in uncovered containers, and 26.1% of structures do not have latrines. Of all the structures, 79.2% defecate in the open air, and of the structures that have toilets, 42.4% do not have separate blocks for men and women and 78.3% do not have trash cans in each ward. In addition, 87% of the health facilities do not have garbage cans in their courtyard, 80.4% have stagnant water in their courtyard and 35.9% have weeds around their health facility. We also found that 69.6% of the structures had cases of waterborne diseases during our visit, 83.4% had patients suffering from waterborne diseases, such as diarrhea, cholera and/or typhoid fever. It should also be noted that there are cases of poliomyelitis (6.7%), malaria being one of the diseases linked to the poor state of sanitation encountered in the structures visited (76.1%). It is worth noting the presence of nosocomial infections (45.7%) in the structures visited.

4. DISCUSSIONS

Our work found that the structures in Tanganyika region do not have taps in the courtyard of their structures. However, it is necessary to cover a distance of more than 30 minutes on foot to obtain either water from undeveloped springs, or that from the lake or rivers (Table 1, 2 and 3). This situation was elaborated upon by WHO and UNICEF in their joint report on the Water Supply and Sanitation Program, in which they found that in 2015, 263 million people had access to limited services. or to an improved water point requiring a round trip of more than 30 minutes to collect water; 423 million people used water from wells and unprotected springs; 159 million people collected untreated surface water from lakes, ponds, rivers and streams [1]. When the distance to be traveled to fetch water is more than 30 minutes, it constitutes a chore for users. However, the users in question here are patients, their guards, as well as the nursing staff who are obliged to travel such a distance to fetch untreated water, which exposes them to the risk of catching diseases. of waterborne origin, which can either complicate the situation of patients, or handicap their treatment when it is the nursing staff who are affected. These results are also consistent with those found by the WHO in 2006, which said that 1.8 billion people use water sources contaminated with faeces. Populations without access to water live mainly in sub-Saharan Africa and Asia [7]. The situation is getting worse with the absence of washbasins in the vast majority of the structures visited, but also by the lack of either soap or ash for washing the hands not only of the patients and their guards, but also of the nursing staff (Table 1, 4 and 5). Results which are consistent with those found by Water Aid (2012), in its work entitled "Transforming health systems: the essential role of water, sanitation and hygiene" which found that 35% of health establishments in low- and middle-income countries do not have handwashing soap [1]. Admittedly, the waste produced by the activities of the health sector has a strong influence on hygiene in the community environment and in the healthcare environment. Their management plays an essential role, on the one hand, in the quality of care, the safety of patients and caregivers and, on the other hand, in the protection of the environment and the community against the risks of pollution and contamination. However, our results show that most structures in Tanganyika do not have garbage cans either in the courtyard of the structure or in each pavilion, as stated in the standards relating to sanitation in hospitals, which shows that the management of biomedical waste is a problem; explaining the fact that there are many cases of nosocomial infections, i.e. 45.7% of these cases encountered during our visit to the various healthcare structures. Also, the fact that there is a lot of grass around the health structures visited and stagnant water in the courtyard of various medical structures explains the high rate not only of malaria cases, i.e. 71.6%, but also those typhoid fever 25.6% (Table 1, 11, 12, 13, 14 and 15). Situation shared by Water Aid which found that 19% of health establishments do not have adequate sanitary facilities [2]. Togo, like other developing countries, is committed to achieving the Millennium Development Goals including the fight against poverty and hunger, access to a healthy and sustainable environment. In fact, according to the results of the MICS 4 survey (2010), only 35.6% of the population use improved sanitation facilities and there are disparities between urban areas (73.8%) and rural areas (12 %). It should be noted that a good part of the works carried out do not respect the standard construction plans and the treatment channels are not appropriate. This situation, added to the poor practice of hygiene, explains the recurrence of diseases related to fecal peril in particular [11].

5. CONCLUSION

Our study is entitled "Assessment of access to water, hygiene and sanitation in healthcare structures in the Province of Tanganyika in the Democratic Republic of Congo". Access to water, hygiene and sanitation should be a major concern of the leaders of medical structures in the world in general and in particular in the Democratic Republic of Congo, a country plagued by endless interethnic conflicts, especially in its northeast part where we conducted our study. Lack of access to water and hygiene and sanitation infrastructure remains a public health problem in the Democratic Republic of Congo in

general and in the Province of Tanganyika in particular, where not only diseases such as malaria and typhoid fever rage; but also Cholera, which is an epidemic disease, has become endemic, with still today many cases of Poliomyelitis that the WHO is seeking to eradicate. The evidence provided by our study underlines the need for the implementation of corrective and preventive actions focused not only on emergency interventions, but also on programs in favor of access to water, hygiene and sanitation. sanitation in this part of the Democratic Republic of Congo.

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