



Survey of hygiene practices associated with latrine use in City of Bumba, Mongala Province, Democratic Republic of Congo

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Abstract

The purpose of this study is to investigate the hygiene practices associated with latrine use in the Cité de Bumba, Mongala Province, Democratic Republic of Congo. A sampling method was adopted in order to carry out this study in 300 households in this city. The following results were found: 81% use no hygiene measures apart from 2% of households with water; 11% of those using soap and water; 6% of households using ash as a bactericide for hand washing.

Such a result shows that hygiene compliance in the city is a problem and is becoming the source of diseases caused by dirty hands.

Keywords: Hygiene, Use, latrines, Bumba, Democratic Republic of Congo.

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I. Introduction

Improving sanitation and water supply is a priority investment in developing countries, as it is at the forefront of hygiene improvements in rural and urban communities. The importance attached to sanitation is part of a movement to satisfy basic human needs (WHO, 1995).

Latrines are dry toilets in low-income regions that constitute places of ease and generally function without water, while ensuring the good health of users by enabling them to evacuate excrement in the intimate and hygienic conditions that guarantee a salubrious environment when maintained (WHO, 2015).

They are understood as pits made in the ground, outside dwelling houses, provided with small protective sheds while toilets, located inside them, have a flush cabinet connected to sewer channels. However, latrines with a hydraulic siphon connected to a septic tank appear to be mixed, straddling both types of installation (Lucas, 2013).

Failure to use adequate sanitation facilities, and using the wrong ones without maintaining them, undermines health safety and human dignity. Worldwide, WHO estimates that there are over 2.6 billion people living without basic sanitation or acceptable latrines, of whom around 1.2 billion defecate or expose their excreta to the open air, increasing the risk of disease that this phenomenon entails (United Nations, 2020). One study has shown that one gram of human faeces can contain around 10 million viruses, one million bacteria and an estimated thousand parasites. Due to a lack of hygiene and adequate sanitary conditions, 1.5 to 2 million deaths are recorded every year (Kasongo et al., 2022). No city or country has achieved true modernity or prospered without decent sanitation WaterAid (2016).

The aim of this study, which investigated the use of latrine toilet inputs in the city of Bumba in the Democratic Republic of Congo (DRC), was to observe the conditions likely to generate pathogens of infectious digestive diseases that can be prevented upstream and at reduced cost by sanitation, and to win the attention of those in power and those governed by the misuse of faecal matter (Kasongo et al., 2022).

Typhoid fever, cholera, bacillary and amoebic dysentery, helminthiasis, poliomyelitis and hepatitis A are among the most common diseases in which fecal-oral water transmission plays a role. The absence and/or non-conformity of latrines and poor sanitation represent a heavy health burden downstream, where the resulting endemic epidemics are more difficult to manage. In addition to the high mortality rate, which is also avoidable, hospital care and logistics have to be made available. (Kasongo et al., op. cit).

This study seeks to answer the main question: do households in Bumba observe the hygiene practices associated with latrine use? Specifically, do they use toilet paper after using the latrines? Are post-latrine hygiene measures observed?

The overall objective of this study is to investigate the hygiene practices associated with latrine use in the city of Bumba, Mongala Province, Democratic Republic of Congo.

II. Materials and methods

Study environment

Bumba is a port town, capital of the Territory of Bumba, in the Province of Mongala, in the north of the Democratic Republic of Congo. Located on the right bank of the Congo River near the confluence of the Itimbiri, it is served by the RN6 national road, 167 km east of the provincial capital Lisala. The Congo River links it to Lisala to the west, and to Basoko to the east. It is linked by road to Aketi to the east and Yakoma to the north.

It has 6 districts: Mobutu, Lingode, Lokole, Lokele-Mongala, Lokele-Molua and Nzongo, divided into 113 avenues. Bumba, chosen as a state post in 1888, became a city in 1988.

In June 2013, it obtained the status of a town divided into five urban communes: Budja, Ebonda, Lokole, Molua and Monama. This status was not maintained when the administrative reform was implemented in 2015, and it was given the status of a rural commune. The geographical coordinates are as follows Latitude: 2°11'15" North, Longitude: 22°28'05" East at an altitude in relation to sea level east of 362 m. Located a week's boat ride from Kinshasa, Bumba was one of the capital's most important sources of cassava, rice and palm oil before the First Congo War. Bumba's agricultural products include rice, maize, groundnuts and cassava (ENABEL, 2019).

The Bumba territory is located between 2 and 3° North latitude and 21°30' and 24° East longitude. The Bumba territory is bordered to the west by the Lisala territory, to the south by the Congo River, which separates it from the Bongandanga and Basoko territories, to the north by the Businga territory and to the east by the Bas Uélé and Tshopo districts. Its surface area is 15,498 km² and represents 22.84% of the Mongala area (Omasombo, 2011; Mopanzo, 2021).

The territory has a population of 1,298,773, with a density of 83 inhabitants/km². It is the smallest of the three territories that make up Mongala Province, and paradoxically the most populous and the most agriculturally active. Made up of six sectors (Bandayowa, Yandongi, Loeka, Itimbiri, Molua, and Monzamboli; 48 Groupements and 792 villages (ENABEL, 2019). In the present study, the population in question is that of the urban city of Bumba. We considered data from the Central Office of the urbano rural health zone of Bumba, i.e. an estimated population of 253,000 Inhabitants (Zone de Santé Rurale de Bumba, 2019).

Materials

To achieve the objectives assigned to this study, several tools were used including Smartphone, computer, survey software (Kobocollect_ODK) and the survey questionnaire.

Methods

The survey was carried out in accordance with the principles set out in the Declaration of Helsinki, i.e. by free consent of the respondents (Ngbolua et al., 2015). To ensure the smooth running of our data collection, we used empirical sampling, thus constituting our study base. A series of questionnaires was designed, and programmed into the Smartphone software using the sampling method (Mataboro et al., 2016).

The different variables to be studied were briefly distinguished by blocks of related questions. A smooth transition from one theme to another was observed, as was its relevance and coherence. All questions were closed. There was no ambiguity, and the vocabulary was simple and unambiguous. There were questions about behavior, knowledge, intention and opinion, with some identifying questions at the beginning. A "pre-test" was administered to around ten people, in order to gather feedback on the questionnaire and identify any formulation pitfalls (Gone et al., 2013).

The survey indicators had been translated into questions. At the time of analysis, each question refers to a variable, i.e. a quantity that can take on several values. All the answers to a question are the modalities of each variable (in other words, the different values, not necessarily numerical, that it can take on). Analysis of the results involved relating the variables and comparing the results obtained with those expected when the hypotheses were formulated (WWF-PARAP, 2015).

As there was a certain ease of collection by Smartphone, with the kobotoolbox, we had targeted 50 households per neighborhood; this made 300 households in total: Lokole, Lingode, Mobutu, Nzongo, Lokele Molua and Lokele Mongala.

Observations were made on the following variables: latrine construction materials, constraints to good latrine construction, use of cleaning inputs, apostiori care, information on the consequences of non-compliance with hygiene measures, and the latrine information channel. The data were analysed using Excel 2010.

III. Results and discussion Results

Latrine construction materials

Construction materials were surveyed, and the results are presented in figure 1.

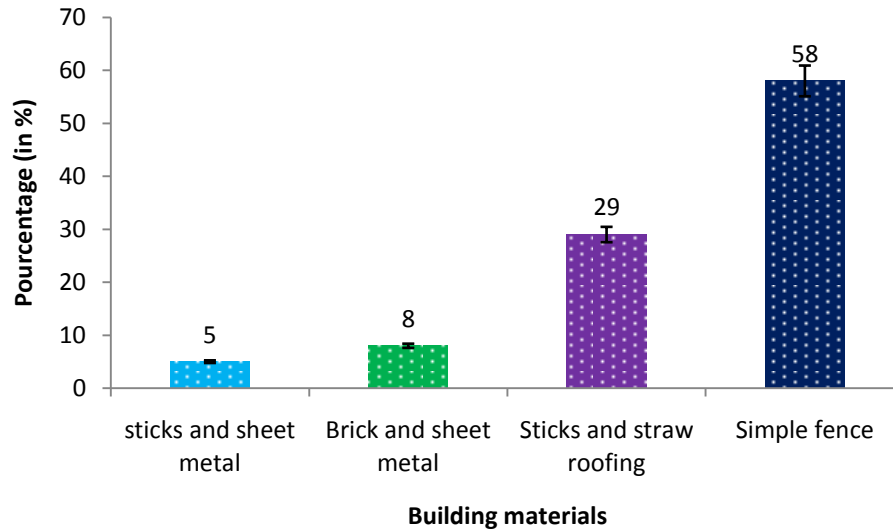


Figure 1: Latrine construction materials.

The results show that the majority of households (58%) use simple stick fences, without any roofing for their latrines. This situation does not protect latrines from bad weather, and even gives them access to flies. Around 13% of latrines are made of sheet metal.

Constraints

The constraints to acquiring good latrines are shown in figure 2.

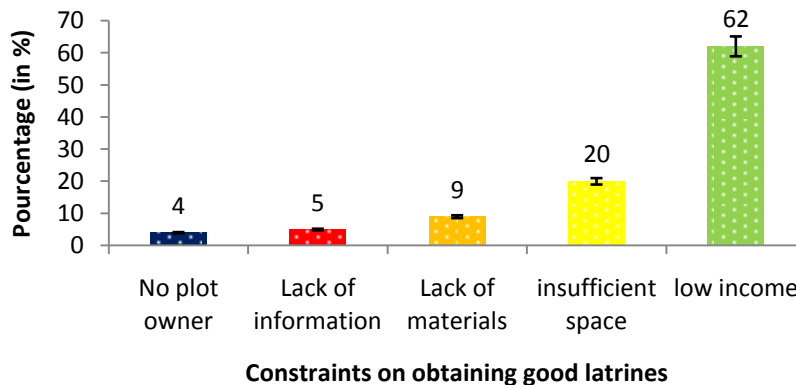


Figure 2: Constraints to good latrines.

In view of these results, lack of space and income are the main limiting factors in obtaining better latrines for the households surveyed in the Bumba housing estate. This situation indicates that the housing estate is a large conurbation, where latrines are located side by side with neighbouring dwellings and those of neighbors.

Use of cleaning inputs

Figure 3 shows the results of toilet input use.

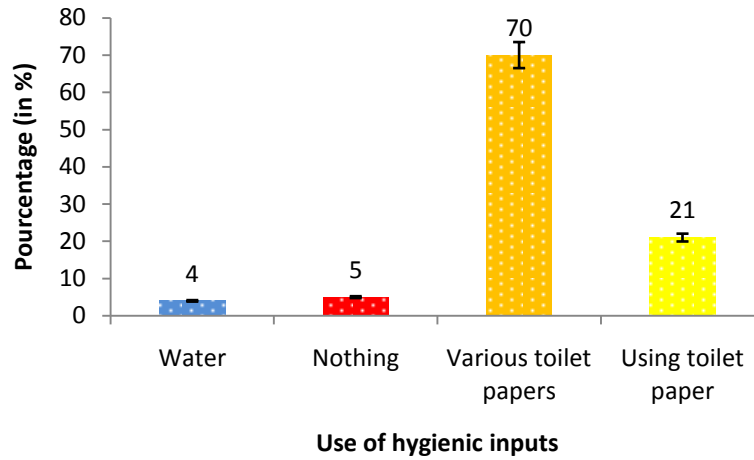


Figure 3: Use of cleaning inputs.

The use of suitable toilet paper remains a serious problem; only 21% of households use toilet paper, compared with 70% of those using various unsuitable papers. Some households use water to dispose of faecal waste.

After-care

Figure 4 shows the results of latrine aftercare measurements.

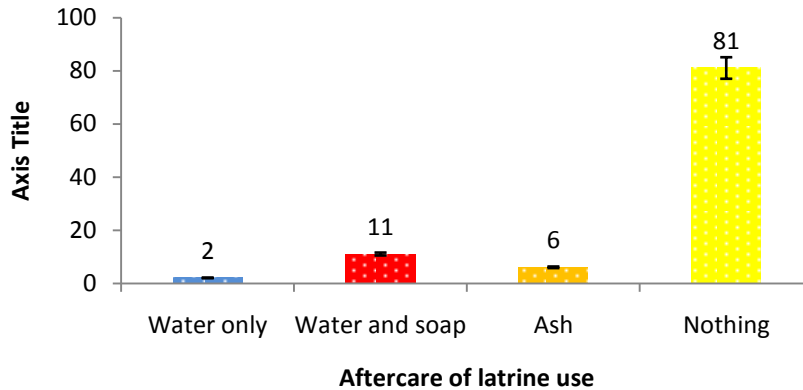


Figure 4: Aftercare.

When leaving the latrines, hygienic measures are not well taken into account. Thus, it was observed that 81% do not use any hygienic measures apart from 2% of households with water; 11% of those using soap and water; 6% of households using ash as a bactericide for hand washing. Such a result shows that hygiene compliance in this part of the Democratic Republic of Congo is a problem and is becoming the source of diseases caused by dirty hands.

Consequences of non-compliance

Information on the consequences of non-compliance by households is presented in figure 5.

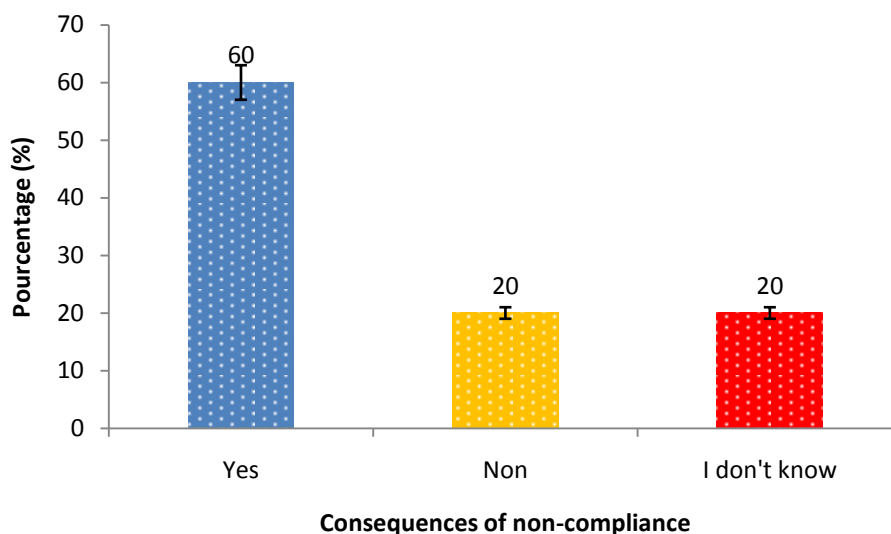


Figure 5: Information on the consequences of non-compliance with hygiene measures.

The results show that there is satisfaction with information on latrine issues, as 60% of households responded positively to this assertion. This means that communication on solid and liquid waste management is proceeding normally.

Information channels for latrine hygiene and sanitation measures

The different channels of information on hygiene and latrine sanitation measures are shown in figure 6.

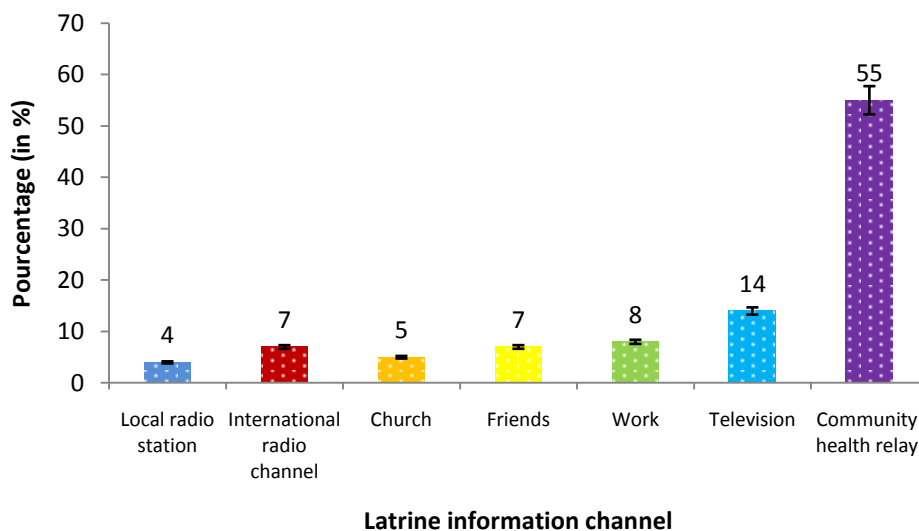


Figure 6: Information channel for latrine issues.

The results show that people are satisfied with the information they receive on hygiene issues in Bumba, where community relays and the local radio station have a heavy communicative responsibility. This result shows that the government is working hard to ensure hygiene and sanitation for the population of this town.

IV. Discussion

The present study investigated the practice of hygiene associated with the use of latrines in the Cité de Bumba; the sampling method was adopted to collect the data.

The major cause affecting households' ability to obtain good latrines remains their modest income, where 62% of households have one. This is a common situation in Africa, where it has been found that low-income countries and conurbations predominantly use dry toilets, which are not maintained because of their low income. The resulting unsanitary conditions and lack of sanitation are associated with deaths from diseases such as typhoid fever, cholera, bacillary and amoebic dysentery, helminthiasis, poliomyelitis, hepatitis A and other preventable digestive infections, as noted by WHO (1995) and Kasongo et al. (2022).

In Burkina-Faso, however, the government has now recognized that households are the main bearers of sanitation services. Some households, often the poorest, can benefit from subsidies for the construction of improved latrines by NGOs or the State (Dubé & Bassono, 2012).

The majority of latrines in the Bumba housing estate are built from makeshift materials, reflecting the situation in Burkina-Faso, where the rate of access to improved family sanitation facilities is too low, at 3% nationwide in 2010. This rate is less than 1% in rural areas. The national target of 55% for achieving the Millennium Development Goals seems less and less achievable, despite major efforts, resources invested and investment programs put in place (Dubé & Bassono, 2012).

A bad latrine is a source of pollution, and in Africa this is certainly one of the most serious issues, because traditionally the danger of this pollution is ignored or at least underestimated. The danger is twofold: firstly, widespread intestinal parasites affect the health of individuals, particularly children; secondly, a weakened individual is less able to resist the various attacks of pathogenic germs. In addition, contaminated food and water directly give rise to many diseases (WHO, 1995).

The results of toilet paper use are deplorable due to the low income of households in the Bumba housing estate. Most of these households resort to various means of cleaning, such as water, cloth, notebook paper and plant leaves (banana, *Triumpheta cordifolia*).

In the city of Bumba, 81% of households did not wash their hands after using the latrine. This is in contrast to the situation in Burkina-Faso, where 43% of latrine-equipped households have a hand-washing facility in or near their latrine, compared with only 18% of households with another type of latrine.

Although handwashing with soap after defecation is not yet common practice in most households. Among latrine-equipped households, some avoid placing a hand-washing facility in or near the latrine for fear of children using the water in the pit. This reality influences and should be taken into account when adjusting latrine use awareness campaigns (Dubé & Bassono, op. cit). The same authors found that 62% of households in Burkina-Faso have latrines classified as non-hygienic practices. In other words, they do not wash their hands systematically after using the latrine.

In view of the above, it is imperative to strengthen the awareness-raising system on the challenges of latrine hygiene and sanitation in order to combat infectious diseases.

V. Conclusion

La présente étude a été menée en vue d'enquêter sur la pratique d'hygiène associée à l'utilisation des latrines dans la Cité de Bumba, Province de la Mongala en République Démocratique du Congo.

Les résultats ont les suivants :

- Les mesures hygiéniques individuelles sont déplorables ;
 - Seulement 21 % des ménages en font usage de papier hygiénique des toilettes, contre 70 % de ceux qui utilisent les divers papiers inappropriés ;
 - Il a été observé que 81 % ne recourent à aucune mesure d'hygiène en dehors de 2% des ménages disposent d'eau ; 11% de ceux qui utilisent le savon et de l'eau ; 6% des ménages recourant à la cendre.
- En perspective, nous envisageons d'envisager de mettre sur pied des stratégies en vue d'exciter les ménages à contribuer à l'hygiène et à l'assainissement de la cité dans le cadre limité des enjeux de gestion de matières fécales solides et liquides.

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