

Toilet Availability and Use in Public Places in Buea: Implications for Public Health

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Abstract

Toilet facilities in public places are a necessity and are supposed to be present in any public place where people visit. Despite the importance of toilet facilities in public places, there is limited access to toilet facilities in public places in Sub-Saharan Africa and this has been a persistent issue. Given that limited studies have been done on availability and use of toilets in public places, this study aimed to fill this research gap. To achieve the objective of the study, a cross-sectional study was used to select participants from the study site. The sample size was 400 after adjustment for non-response. Results from the study showed promising as 95% of public places had a toilet and water for hand washing. However, most of the toilet facilities lacked soap. Toilets in offices and hospitals were perceived to be cleaner and of good quality compared to those in markets and travel agencies. Results also showed that participants hardly used toilets in markets and travel agencies. Toilet facilities in offices and churches were most used, as office toilets were rated clean and of good quality by the participants. The study recommends the need for routine checks by the council to ensure the presence of toilet facilities in public places and the need to sensitise business owners on the importance of having and maintaining toilet facilities in their business establishments.

Keywords

Toilet Facilities, Availability, Use

1. Introduction

Toilet facilities in public places are a necessity and are supposed to be present in any public place where people visit. Globally, public toilet facilities vary in terms of availability, density, distribution, and design. The availability of public toilets in parklands and open spaces in major international cities differs, with some cit-

ies having higher densities of toilets per area or per population [1]. However, there are still challenges in providing sufficient, well-maintained, and resourced public toilets. Inadequate toilet provision is a global issue, with over two billion people lacking adequate toilets, and women being particularly affected [2]. The lack of toilets has implications for health, well-being, mobility, and sustainability in cities.

Despite the importance of toilet facilities in public places, there is limited access to toilet facilities in public places in Sub-Saharan Africa and this has been a persistent issue. A review of literature shows that shared sanitation facilities are prevalent in the region, with an estimated 19% of the population using them [3] and this shared sanitation especially in public places has been associated with an increased risk of diarrheal diseases [4]. Furthermore, the availability of hand-washing facilities in public places is also a concern. A study found that the prevalence of limited handwashing facilities in Sub-Saharan Africa was 66.16% [5]. This highlights the need to improve access to sanitation and handwashing facilities in public places in the region.

In Cameroon, the government through its Ministry of Tourism has policies that regulate the creation of hotels, restaurants and other recreational places. According to these policies, public places are expected to have clean toilet facilities for both men and women. Despite this regulation, toilet facilities in public places are currently inadequate and in need of improvement. Studies in Cameroon have been on toilet facilities in households and management of sanitary sewage; for example, a study in Yaounde, on various methods of excreta disposal showed that approximately 3% of households still practice open defecation, leading to sanitation-related diseases [6]. These studies have shown there is a need for better management and infrastructure development to improve the state of toilet facilities generally in Cameroon. However, the studies done thus far have focused on toilet facilities in households and have not recognised the situation of toilet facilities in public places in Cameroon and Buea particularly and hence the need for this study. The objectives of the study are therefore to: assess the availability of toilet facilities in public spaces in the Buea municipality, assess the level of use of toilet facilities in public places and recognize barriers to toilet use in public places.

2. Methods

The study was done in the Buea municipality. Buea is the capital of the South West region of Cameroon. It is a cosmopolitan town with over 200,000 inhabitants. The town has inhabitants from all over Cameroon who are engaged in various activities and hence has so many public places ranging from markets, parks, bars, restaurants, and schools just to name a few. The study is a community-based cross-sectional study with a quantitative approach. The minimum sample size for the study was estimated using Cochran's formula assuming a 50% proportion. This gave a sample size of 385 participants and this was ad-

justed for non-response rate to enrol 400 participants from Buea using sampling by convenience. Data was collected between March and April 2024. Participants were recruited in school premises, markets, bars, restaurants, churches, and social gatherings. The study included adults from age 18 years who use public places around Buea. Data collection was done using a semi-structured questionnaire with 29 questions. The questionnaire was structured in sections to capture availability of toilet facilities in public places, the use of these facilities by the participants, participant's perceptions of the quality and cleanliness of toilets and some of the difficulties they have had while using these facilities. The questionnaire was piloted in Limbe (another town in the South West Region) before being administered by the researcher at the study site. The data for this study was analysed using STATA 15. Proportions and frequencies were used to describe the demographic characteristics of the participants. The availability of toilets and level of use was also expressed as a proportion based on the responses of participants. These results were also summarized in tables. The barriers associated with the use of toilets were also reported as proportions from the most recounted barriers.

For the purpose of this study, a public place is any place where anyone in the public has access to and can visit at will. Therefore, bars, restaurants, travel agencies, hospitals, offices, markets and other workplaces were the public places considered. A toilet facility in a public place is a small room with toilets, urinals and hand-washing sinks for public use

3. Results

The study enrolled a total of 400 participants and 388 questionnaires were returned giving a response rate of 97%. A greater proportion of the participants were females (58%) with average age 24.2 (± 5.4). Over half of the participants had a tertiary level of Education and were residing in the Molyko neighborhood. The sociodemographic characteristics of the participants have been summarized in **Table 1**.

Table 1. Sociodemographic characteristics of study participants.

Sociodemographic characteristic	Frequency (n)	Proportion (%)
Sex		
Male	159	42
Female	219	58
Age (years)		
18 - 28	165	45
19 - 39	131	35
40+	74	20

Continued**Highest level of Education**

No formal education	4	1
Primary	8	2
Secondary	162	42
Tertiary	213	55

Religion

Christian	375	98
Muslim	6	2
Others	0	0

Place of residence

Molyko	189	53
Soppo	40	11
Bonduma	34	10
Mile 16	49	14
Muea	44	12

Marital status

Married	105	35
Unmarried	235	65

4. Availability of Toilets in Public Places

The first objective of the study of the study was to assess the availability of toilets in public places in Buea. A majority of the participants visited public places every week and indicated that most of the public places they visited had a toilet facility (95%). The public places that were visited frequently were markets, bars/restaurants, churches, travel agencies, hospitals and offices. Although most public places had a toilet (95%), water (81%) and sink/bucket, less than half (44%) of them made soap available for hand washing. **Table 2** provides a summary of the availability of toilet facilities in public places.

Table 2. Availability of toilets in public places.

Variable	N (%)
Frequency of visiting public places	
Everyday	68 (18)
Every week	182 (48)
Sometimes	131 (34)

Continued**Availability of toilets in public places visited**

Yes	359 (95)
No	20 (5)

Availability of water in the toilet

Yes	297 (81)
No	71 (19)

Availability of soap

Yes	127 (44)
No	244 (66)

Availability of sink or hand washing bucket

Yes	246 (66)
No	125 (44)

5. Use of Toilets in Public Places in Buea

The study also sought to determine the use of toilets by participants who visit public places in the study site. According to the study results, most participants do not use toilets in markets (73%) and travel agencies (60%). The often-used toilets were those of churches (18%) and offices (15%). A majority of the respondents sometimes use hospital toilets (59%). The use of toilets in bars was mostly sometimes or not at all. A summary of these results is shown in **Table 3** below.

Table 3. Use of Public toilets in Public places in Buea.

Variable	N (%)
Use of toilets in markets	
Very often	10 (3)
Often	8 (2)
Sometimes	83 (22)
Not at all	279 (73)
Use of toilets in bars/restaurants	
Very often	17 (5)
often	20 (5)
Sometimes	158 (42)
Not at all	180 (48)
Use of toilets in offices	
Very often	32 (9)
often	55 (15)

Continued

Sometimes	150 (41)
Not at all	133 (36)
Use of toilets in hospitals	
Very often	17 (5)
often	11 (3)
Sometimes	221 (59)
Not at all	126 (34)
Use of toilets in travel agencies	
Very often	14 (4)
often	8 (2)
Sometimes	128 (34)
Not at all	223 (60)
Use of toilets in churches	
Very often	29 (8)
often	67 (18)
Sometimes	162 (43)
Not at all	116 (31)

6. Public Places with Good Toilets

The study also aimed at understanding participants' views of public places with good toilets. Results showed that office spaces in Buea had good toilets compared to other public places. Markets and travel agencies were reported to have the worst toilets. The toilets were also scored by the study participants on a scale of 10 for cleanliness. Offices and hospitals had the best scores 6.8 and 6.1 respectively whereas markets and travel agencies scored lowest for cleanliness, 2.2 and 3.7 respectively. Results have been summarised in **Table 4** and **Table 5**.

Table 4. Public places with good toilets.

Public Place	N (%)
Markets	3 (1)
Hospitals	77 (22)
Bars/restaurants	54 (15)
Offices	140 (39)
Travel agencies	12 (3)
Others	71 (20)

Table 5. Cleanliness of toilets based on scoring.

Public Place	Average score/10
Bars/restaurants	3.9
Offices	6.8
Travel agencies	3.7
Hospital	6.1
Markets	2.2

7. Discussion

The findings from the study indicate a high availability of toilet facilities in public places in Buea, with a reported availability of toilets in 95% of the visited locations. This aligns with the basic expectations of public health standards, where access to sanitation facilities is fundamental to promoting hygiene and preventing the spread of diseases [7]. However, a closer examination reveals gaps in the provision of essential hygiene amenities within these facilities. Despite the widespread availability of toilets, the study highlights deficiencies in supplementary resources crucial for maintaining proper hygiene practices. For instance, while a majority of public places offer toilet facilities, only 44% of them provide soap for handwashing. This discrepancy raises concerns regarding the effectiveness of sanitation practices in public places [8]. Moreover, the presence of water for handwashing is reported in 81% of the facilities, indicating a notable gap in essential infrastructure required for basic hygiene practices [9]. The absence of soap, a vital component for effective hand hygiene, compromises the potential benefits of having access to water and sinks. Studies have demonstrated that handwashing with soap significantly reduces the risk of gastrointestinal and respiratory infections [10].

The types of public places frequented by participants also provide valuable insights into the patterns of exposure to sanitation facilities. Markets, bars/restaurants, churches, travel agencies, hospitals, and offices emerge as the most commonly visited locations. These findings underscore the diverse settings where interventions aimed at improving sanitation and hygiene practices can be targeted [11]. Therefore, efforts to address the identified gaps in sanitation infrastructure should consider multifaceted approaches. This may include advocating for policy reforms to enforce standards for hygiene amenities in public places, promoting community-led initiatives to improve sanitation practices, and enhancing public awareness campaigns on the importance of hand hygiene [12]. Collaboration between government agencies, private sector entities, and civil society organizations is essential for implementing sustainable solutions to improve sanitation in public spaces in Buea and perhaps Cameroon at large.

The study also sheds light on the utilization patterns of toilets by participants visiting various public places in the study site. Surprisingly, a substantial propor-

tion of participants reported not using toilets in certain settings, despite their availability. For instance, the majority of participants indicated that they do not use toilets in markets (73%) and travel agencies (60%). As a result, women are seen hiding behind buildings to urinate while children and men can be spotted urinating on roadsides, especially in markets and travel agencies. This finding suggests potential barriers or disincentives that deter individuals from utilizing sanitation facilities in these environments [13].

Conversely, the study reveals variations in toilet usage across different types of public places. Churches and offices emerge as the most frequently used facilities, with 18% and 15% of participants, respectively, reporting regular utilization. This trend may be attributed to factors such as accessibility and cleanliness, associated with toilet usage in these specific settings [13]. Interestingly, while hospitals are expected to have high rates of toilet utilization due to the nature of their services, a majority of respondents reported only occasional use (59%). This discrepancy raises questions about the perceived cleanliness and safety of hospital facilities, which may influence individuals' willingness to utilize them.

The findings also showed trends in the use of toilets in bars, markets and travel agencies with the majority of respondents indicating infrequent or negligible utilization. This is not surprising as people are usually observed urinating around bars and restaurants. Most participants noted that toilets in these places are always smelly, dirty, in some cases wet and most times without water. This raises public health concerns, as inadequate access to sanitation facilities in drinking establishments can contribute to the spread of infectious diseases and hygiene-related issues. Addressing the factors influencing toilet usage in different public settings requires a nuanced understanding of behavioral determinants and structural barriers. Interventions aimed at promoting toilet utilization should focus on improving accessibility, hygiene standards, and public awareness of the importance of proper sanitation practices [14]. Community engagement and stakeholder collaboration are essential for implementing effective strategies to encourage toilet utilization in public places. This may involve partnerships between local authorities, business owners, and community leaders to enhance the availability and quality of sanitation facilities and promote behavioral change initiatives [15].

The study offers valuable insights into participants' perceptions of public places with regard to the quality and cleanliness of toilets. Office spaces in Buea emerged as having the most favorable reputation for toilet facilities, while markets and travel agencies were perceived to have the poorest standards. These findings underscore the importance of sanitation infrastructure in shaping public perceptions of cleanliness and hygiene across different settings [16]. The variation in toilet quality between different types of public places highlights the need for targeted interventions to address disparities in sanitation standards. Office spaces, which garnered the highest praise from participants, probably benefit from established maintenance protocols and higher standards of cleanliness

compared to other settings [17]. Conversely, markets and travel agencies, characterized by lower scores for toilet quality, may require greater attention to improve sanitation infrastructure and hygiene practices.

The study also provides quantitative assessments of toilet cleanliness, with participants scoring facilities on a scale of 1 to 10. Offices and hospitals received the highest cleanliness scores, with average ratings of 6.8 and 6.1, respectively. These findings reflect the importance of factors such as cleanliness, maintenance, and accessibility in shaping perceptions of toilet quality. In contrast, markets and travel agencies received significantly lower cleanliness scores, with average ratings of 2.2 and 3.7, respectively. This suggests that these settings may face challenges related to inadequate maintenance, poor hygiene practices, and limited resources for sanitation infrastructure [17]. This could probably be one of the reasons why the use of toilet facilities in markets and travel agencies is lower compared to offices and hospitals.

Properly maintained restrooms in public places encourage use and reduce the risk of transmission of infectious diseases. It also reduces urinating and defecation in open spaces which could possibly contaminate water sources and further lead to the spread of diseases. Improving toilet cleanliness and hygiene standards in public places requires collaborative efforts involving government authorities, business owners, and community stakeholders. Strategies such as regular maintenance schedules, hygiene education programs, and public-private partnerships can contribute to enhancing sanitation facilities and promoting positive attitudes toward toilet usage [18]. Furthermore, public awareness campaigns emphasizing the importance of having clean and accessible toilets in public spaces, and using toilets in public places instead of hiding behind buildings or road sites for urination and defecation can help foster a culture of hygiene and sanitation in the community [14]. By addressing the identified shortcomings in toilet quality and cleanliness, stakeholders can contribute to creating safer and more hygienic environments for all residents.

8. Conclusion

In conclusion, while the availability of toilet facilities in public places in Buea appears promising, the lack of essential hygiene resources such as soap underscores the need for comprehensive interventions to promote proper sanitation practices. Addressing these deficiencies is crucial for safeguarding public health and reducing the burden of preventable diseases associated with inadequate sanitation. The study also highlights disparities in the utilization of toilets across various public settings in the study sites as participants reportedly used toilets in offices and churches than other public places. Understanding the underlying factors influencing toilet usage is crucial for developing targeted interventions to improve sanitation practices and safeguard public health. The study findings highlight the importance of sanitation infrastructure and cleanliness in shaping perceptions of public places. The study therefore recommends the need for rou-

tine sanitation checks by the council to ensure the availability of toilets in all public places. There is also the need to create awareness among business owners on the importance of having and maintaining good toilet facilities in their establishments.

Study Limitation

The study is limited by the use of convenience sampling which may limit the generalizability of the study results.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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