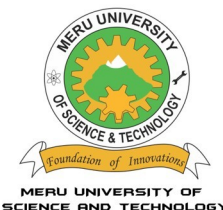




AFRICAN JOURNAL OF SCIENCE, TECHNOLOGY AND SOCIAL SCIENCES

Journal website: <https://journals.must.ac.ke>



A Publication of Meru University of Science and Technology

Utilization of environmental Sanitation Policy Guidelines on the use of sanitation facilities in Public Primary Schools

Beth Wanjiku Njoroge^{1*}, Grace Gakii Muthuri¹ and Charles Njati Ibuathu¹

¹Meru University of Science and Technology, Meru, Kenya .

ARTICLE INFO

ABSTRACT

KEYWORDS

Disability mainstreaming
Users with special needs
Sanitation facilities
Sanitation status
Toilets
Toilet ratio
Schools hygiene

There is a need for a healthy and conducive learning environment, safe drinking water, and child-friendly sanitation facilities in the school where children spend a lot of time. The objectives of the study were to establish the use of existing types of sanitation facilities and find out the status of the existing types of sanitation facilities within primary schools concerning Kenya School Health Policy and the Safety Standards Manual for schools. To achieve its objective, the study adopted a descriptive survey design. A sample of 169 schools was selected from the 773 primary schools in Meru County using simple random sampling. Data was collected using a structured direct observation schedule. Data was analyzed using SPSS software. Descriptive statistics including mean and cross-tabulations were used. The study purposively sampled 167 primary school heads with boys and girls populations of 132,180 and 131,712 respectively. Pearson's Chi-Square test was used to determine relationships between the variables. The study revealed that

75% of the schools visited kept hygiene and had pit latrines with hand washing stations. Through observation, it was evident that 93% of the schools visited had clean environments that were free from litter. The study concluded that ratios for the sample population fell within the WHO guidelines which recommend a ratio of 25:1 for girls and 50:1 for boys' toilets. It was concluded that in 46.1 % of the sampled primary schools, pupils living with disabilities experienced challenges in accessing sanitation facilities. The study recommended schools come up with clear budg-

Introduction

Background of the study

Sanitation is still a concern in many parts of the world. About 50% of the developing world's population lacks improved sanitation facilities and over 884 million people still use unsafe drinking water sources (UNICEF, 2010). Decent sanitation includes appropriate hygiene awareness and behavior as well as acceptable, affordable, and sustainable sanitation services which are crucial for

the health and well-being of people. Therefore, lack of access to safe human waste disposal facilities leads to higher costs to the community through pollution of rivers, and groundwater and higher incidence of air and waterborne diseases. Other costs include reduced incomes as a result of disease and lower educational outcomes. Nationally, 61 percent of the population has access to improved methods of waste disposal. A sizable population of approximately 39 percent of the

*Corresponding author: Beth Wanjiku Njoroge

Email: bethdelight@gmail.com

<https://doi.org/10.58506/ajstss.v2i2.152>

population is disadvantaged. Investments made in the provision of safe water supplies need to be commensurate with investments in safe waste disposal and hygiene promotion to have a significant impact (OECD 2022).

According to (UNICEF) and World Health Organization (WHO), 2020, 57% of schools had a basic hygiene service (hand washing facilities and soap and water available at the time of the survey); 19% had a limited service (hand washing facilities with water but no soap available); and 25% had no service (no facilities or no water at all). 818 million children lacked a basic hygiene service at their school, including 355 million whose schools had facilities with water but no soap, and 462 million whose schools still had no hygiene service. Global coverage of basic hygiene services in schools has increased by 1 percentage point per year since 2015. Achieving universal access by 2030 would require a four-fold increase in the current rate of progress.

Environmental sanitation entails the management of environmental elements that contribute to the spread of illness and affect human health. It includes actions taken to promote and maintain an environment that is healthy for people, lessen disease exposure by giving people a clean place to live, and take steps to stop the spread of illnesses. Efforts have been made towards improving public health in schools by various stakeholders. Kenya's enactment of the School Health Policy and School Health and Guidelines in 2010 shows the government's commitment to improving Public health in schools. Stakeholders are enabled to implement school health programs that improve the effectiveness and quality of health intervention programs as stipulated in the National School Health Strategy Implementation Plan of 2011-2015 (GOK 2018c). A report by UNICEF on Kenya Country Profile points out that water and sanitation facilities in schools are increasingly recognized as fundamental for promoting good hygienic behavior and children's well-being (UNICEF 2021).

The rapidly increasing population in primary

schools due to free primary education has strained the sanitation facilities in schools. Only 29% of all schools at both primary and secondary levels have access to clean and safe drinking water and appropriate sanitation facilities (WHO 2019b). In most primary schools a pit latrine serves over 100 pupils. Moreover, the quality is often deficient in places where the facilities exist (Kruk, Gage, Arsenault, Jordan, Leslie, Roder-De Wan, Adeyi, Barker, Daelmans, Doubora, English, Garcia-Elorno, Guanais, Gureje, Hirschhorn, Jiang, Kelly, Lemango, Liljestrand & Pate 2018)). To ensure proper literacy levels, a clean learning environment is needed and would enable a healthy learner population (GoK, 2008). Over time, the population of Meru County has expanded without the equivalent improvement or upgrading of the existing sanitation facilities in public schools.

Most research on sanitation in schools has also been done on aspects of latrines and water. However, there is a need to revisit the sanitation guidelines available and how best to implement them in primary schools. Therefore, there is a need for updated in-depth information on sanitation and hygiene in schools in all aspects. This data can be used for the development of indicators for monitoring sanitation and hygiene in primary schools. Gaps identified in the school health system would inform policy and decision-makers on appropriate mitigations or interventions to improve public health in schools. This will foster a healthy learning environment and improve performance in public primary schools.

There is evidence to suggest that school absenteeism is related to a decrease in academic performance, dropout rates, and delays in academic development (Sekiwu, Ssempala & Frances 2020). While the available evidence is focused primarily on middle and high-income countries, there is no reason to believe that these impacts are not relevant in low-income countries. The social and economic knock-on effects of reduced academic performance or, in some cases, dropout, are likely to be far-reaching for the individual, but also the

community, region, and country. For example, under-attainment in school can affect a child's job prospects and livelihood, as well as their social development, which in turn can hold back economic growth and social development in the locality. A systematic review found insufficient evidence for or against the hypothesis that separate toilets for girls in schools may increase school enrolment and attendance for girls (Birdthistle et al., 2011). A more recent systematic review to assess the potential of hand hygiene interventions in schools to reduce absenteeism and illness also found serious limitations on adequate sanitation. However, this review nonetheless based on individual study findings, concluded that such interventions might decrease absence and respiratory tract infections (Willmott et al., 2015).

The SDGs provide a global framework for ending poverty, protecting the environment, and ensuring shared prosperity. Goal 6 (Clean water and sanitation) and Goal 3 (Good health and well-being) are relevant to sanitation. Several other goals for which sanitation contributes or is necessary for achievement, include those on poverty; particularly 1.4 on access to basic services, nutrition, education, gender equality, economic growth, reduction in inequalities, and sustainable cities. The SDGs also set out the principles of implementation for states to follow, by increasing financing, strengthening the capacity of health workers, introducing risk-reduction strategies, building on international cooperation, and participating in local communities. Goal 1 states the need to improve the flow of information and increase monitoring capacities and disaggregation so that it is possible to identify which groups are being left behind (ADB, 2021)

Statement of the Problem

The Government of Kenya through the National School Health Policy and Guidelines aims to provide adequate sanitation and hygiene services to all primary schools in the republic (GOK, 2018a). This ensures the uptake of good sanitation habits

at an early age. Children will then serve as change agents in their homes and communities (WHO 2019). All schools must adopt the School Health Policy within the provisions of the Education and Health status and their challenges in the implementation. The Children's Act 2022 has included water and sanitation services as one of the basic needs of children.

The School Health Programme is an inter-sectoral initiative in which Ministries, stakeholders, and agencies collaborate in planning, implementation, monitoring, and evaluation of activities. The overall coordination of all aspects of the implementation of all health-related activities within the primary schools is the responsibility of the Ministry of Education and its stakeholders in collaboration with the Ministry of Health which provides integrated preventive, promotional, curative, and rehabilitative health services.

According to WHO 2019, their study on improving health and learning through better water, sanitation, and hygiene in schools noted that pupils do not use toilets regularly due to lack of privacy, poor cleanliness, smell, and lack of toilet paper, soap, and hand-drying materials. Some pupils shy off from asking permission. Mensa 2020 noted that the success of any policies, legal frameworks, and institutional capacity building may not be achieved without the input of all the key stakeholders to effect the desired changes.

The commitment to formulate policies and laws to govern the sanitation sector should match the investments towards building capacities of the Regulatory Bodies and Institutions charged with the responsibility of providing sanitation services. There is a need to enforce and legalize the policy guidelines. Sensitization of the various sectors of the population should be undertaken with the view to promoting good practices in sanitation and environmental management for sustainable development. There is a need to consider the following factors that will assist in the implementation of the sanitation policy guidelines which include; environmental sanitation.

Purpose of the Study

The purpose of this study was to evaluate the factors affecting the implementation of sanitation policy guidelines on sanitation facilities in primary schools in Meru County.

Objective of the Study

The objectives of the study were to:

- i) Establish the use of existing types of sanitation facilities in primary schools
- ii) Find out the status of the existing types of sanitation facilities within primary schools

Literature Review

Theoretical Review

Data collected by Garn, Caruso, Drews-Botsch, Kramer, Brumback, Rheingans, and Freeman 2014, in their article on Factors Associated With Pupil Toilet Use in Kenyan Primary Schools, supported the importance of lower pupil-to-toilet ratios and quantified the benefits of following guidelines such as those set by the World Health Organization (25:1 for girls, and 50:1 + one urinal for boys) and the Kenyan government (25:1 for girls, and 30:1 + urinal for boys). They observed increased use of urinals, compared to traditional pits, which is further support for the current WHO guidelines, of including a urinal for boys (Meili, Schelbert, Alarm, et. al. 2022)

Buxton, Nabuab, Duijster, Dorning, Monse, Benzian&Dreibelbis 2017 in their study on the impact of an operation and management intervention on toilet usability in schools in the Philippines concluded that water, sanitation, and hygiene interventions in schools focusing on operation and maintenance showed potential to improve toilet usability, but the universal achievement of SDG targets may require additional efforts addressing toilet infrastructure. Regardless of the number of available toilets, not using the school toilet constantly heightened students' risk of diarrhea and vomiting. Students should be encouraged to use toilets as opposed to alternative sanitation practices, like using a nearby field or not using the toi-

let during school hours (Weaver, et al, 2016).

The study on the sanitation policy guidelines implementation has several stakeholders. The Theory of Planned behavior will be very critical to predict and explain a wide range of health behaviors and intentions that include health service utilization. Behavioral achievements depend on motivation and ability, differentiating between behavioral, normative, and control. This theory will be handy in explaining the outcomes on the student toilet ratio, environmental sanitation, and the status of awareness findings on how they affect the implementation of sanitation policy guidelines on sanitation facilities in public primary schools (Bangkara, Syuryadi & Kuncoro 2021).

Research Methodology

This study adopted a descriptive survey design to gather accurate information on the utilization of environmental sanitation policy in primary schools in Meru County. Meru County has 773 public primary schools with a total enrolment of 263,892 pupils and 5,520 teachers. The number of boys and girls is 132,180 and 131,712 respectively (Meru County Director of Education 2022). The study used a random sampling technique to sample 169 primary schools with total boys and girls populations of 21,987 and 18,022 respectively. Due to the sensitivity of the research matter, the study used purposive sampling to sample all head teachers from the selected 169 primary schools. Purposive sampling to get information from the teachers.

The study used questionnaires and structured observation checklists that utilize the Safety Standard Manual for Schools in Kenya as the guiding documents for research instruments for data collection (GOK 2008 & GOK 2018a). The study ensured all ethical issues were adhered to and the respondents were informed of their rights and privileges.

Results and Discussion

Response Rate

Type of Sanitation Facilities	Frequency	Percentage
Ordinary Pit Latrine	129	77.2%
Ventilated Improved Pit (VIP)	30	18.0%
Water Closet	7	4.2%
Others	1	0.6%

Table 1: Type of sanitation facilities (n=167)

Factor	Option	f	%
Pupils' population	Boys	21,987	55.0%
	Girls	18,022	45.0%
Number of toilets for each gender of pupils	Boys	1014	47.9%
	Girls	1104	52.1%

Table 2: Student-toilet ratio (n for population=40,009, n for sanitation facilities=2,118)

A total of 169 schools were visited to administer the structured observations checklist. However, due to the nature of their work, only 167 head teachers managed to provide the required data in this study. Therefore the percentage of observations checklist return was 98.8%.

Results and discussion

The study sought to identify the types and status of sanitation facilities and their proportion to the pupils' population. In the collection of this data, the sampled 167 respondents gave their input through the structured observation schedule. The data was analyzed using descriptive statistics. The findings showed that the majority of the sanitation facilities, comprising 77.2%, were ordinary pit latrines. The second most prevalent type of sanitation facility was the ventilated improved pit (VIP), which accounted for 18.0% of the total. VIP latrines are an upgraded version of pit latrines and provide better ventilation to reduce odors and improve hygiene. Water closets, also known as flush toilets, represented 4.2% of the sanitation facilities. Water closets were typically connected to a sewage system and used water for flushing. (see table 1)

Student-toilets ratio

The sampled 169 schools had a population of 40,009 pupils. Out of this, 21,987 boys represented 55.0% of the total pupil population, and 18,022 girls, accounted for 45.0% of the total pupil population.

Cumulatively, there were 1,014 toilet facilities designated for boys, representing 47.9% of the total toilets available. There were 1,104 toilets designated for girls, accounting for 52.1% of the total toilets available. These translate to a general student-toilet ratio of 19:1. For each gender, the boys-toilet ratio was 22:1 while the girls-toilet ratio was 17:1. The boys had a separate urinal in the primary schools. as shown in Table 2.

These tabulated observed ratios for the sample population fall within the WHO guidelines which recommend a ratio of 25:1 for girls and 50:1 for boys' toilets. Besides, the Kenyan government recommends a ratio of 25:1 for girls and 30:1 for boys' toilets (Alexander, Zulaika, Nyothach, Oduor, Mason, Obor, Eleveld, Laserson, Phillips-Howard 2018)

Status of the sanitation facilities

The findings indicate that in 91.0% of the sampled schools were hygienic, and had separate sani-

Criteria	Option	
	Yes	No
Are girls' sanitation areas separate from the boys?	91.0%	9.0%
Is there a urinal for boys?	95.2%	4.8%
Is there provision for learners with special needs?	53.9%	46.1%
Is there a provision for very young learners (lower classes)?	73.7%	26.3%
Are the latrines clean i.e. free from visible faeces on floors & walls?	89.8%	10.2%
Are they well ventilated i.e. do they have a vent pipe?	24.6%	75.4%
Are they well maintained?	88.6%	11.4%
Lack doors	62.3%	37.7%
What is the condition of the walls?	Good	Cracked
	85.0%	15.0%
	Condition	%
Condition of the latrine floors (n=167)	Wet	23.4%
What is the condition of the latrine floors?	Dry	18.6%
	Clean	46.7%
	Have	
	Feces	10.8%
	Not listed	0.6%

Table 3: Status of the sanitation facilities (n=167)

tation areas for girls and boys, ensuring privacy and segregation based on gender. In the majority 95.2% of the schools, there are urinals specifically designated for boys' use. Only in 4.8% of the schools, there were no urinals available for boys, for the schools with the urinals the facilities were clean and separate from the girls' facilities.

Status of sanitation provisions for pupils living with disabilities

The findings indicate that in 53.9% of the schools, there were provisions made for learners with special needs, ensuring accessibility and inclusion while 46.1% of the schools have no specific provisions for learners with special needs. It is alarming that there is a significantly large percentage of schools that do not take into account the sanitation needs of pupils with various forms of disability. From the observation from the respondents during data collection it was clear that the most common forms of disability among the special needs pupils were physical disability and intel-

lectual impairment. 48.6% of the schools, visited did not have special sanitation facilities for these pupils which made it difficult and in some cases degrading for them to use existing facilities because of their special conditions. Even for the 51.4% of the schools that had provisions for special needs pupils, there were still obvious visible gaps that needed to be addressed to make the sanitation facilities more inclusive and accessible to such pupils.

Sanitation provisions for young learners

The results also show that in 73.9% of the schools, there were provisions made for very young learners, addressing their specific needs. However, in 26.3% of the schools, there are no specific provisions for very young learners, which is very worrying because most of these young learners fall between the ages of 5-8 years which means they are still learning how to be independent and take care of themselves. Sharing of sani-

tation facilities between the young learners and older ones can be problematic in the sense that the older learners can bully them and also the young learners can be exposed to various diseases linked to misuse and lack of use of sanitation facilities. It is therefore very important for every school to have special dedicated sanitation facilities for young learners. The facilities should also be kept clean at all times with a water point where the young learners can wash their hands under the supervision of a teacher.

General hygiene and condition status of latrines

The findings indicate that 89.8% of the sanitation restrooms were reported to be hygienic, clean and free from visible feces on floors and walls, generally for this group the hygiene of the facilities was fairly alright despite a small number of the facilities having pools of urine. For 10.2% of the schools, the latrines were reported to have visible feces on floors and walls, these facilities were in deplorable condition which posed a health risk for the pupils using the facilities. The main reason given for the status of the facilities was a scarcity of water within the school grounds to facilitate the cleaning of the toilets, to a certain extent even the teachers are to blame because they were some degree of negligence on their part in ensuring that the toilets were cleaned by the pupils.

The findings also showed that only 24.6% of the latrines were reported to be well-ventilated, having a vent pipe. A significant majority, comprising 75.4% of the latrines were reported to be lacking proper ventilation, with no vent pipe. The majority, covering 88.6% of the sanitation areas were reported to be well-maintained, while a smaller portion of 11.4% is not. A significant portion of 62.3% of the latrines lack doors, particularly for the boys' toilets, in a number of the schools this was common with the sanitation facilities for the boys.

Through the observation schedule, it was evident that 93% of the schools visited had clean

environments that were free from litter. Considering that children learn and play in these environments, it was very encouraging to see that most schools were focusing on having a neat, clean, and healthy environment for the pupils. About 8% of schools visited had some fairly littered environment with the most common litter being textbook papers and a bit of plastic bags. The teacher in charge of the environment played a critical role in ensuring compliance with a clean environment. However, there is a need to provide resources to enforce regulations and standards for environmental quality.

The study established that 90% of the schools visited had hand washing stations with water for use. But sometimes of the day the taps went dry and so teachers had to supervise the pupils to refill the reservoir tanks. On the contrary, 10% of the schools visited had no water at the hand washing points.

Conclusion

The study concluded that the observed ratios for the sample population fell within the WHO guidelines which recommend a ratio of 25:1 for girls and 50:1 for boys' toilets. The study concluded that the majority of the sanitation facilities were ordinary pit latrines with the second most prevalent type of sanitation facility being the ventilated improved pit.

It was concluded that pupils living with disabilities experienced challenges in accessing sanitation facilities since 46.1 % of the primary schools had no specific sanitation provisions for learners with special needs. It was also established there were adequate sanitation provisions for young pupils below 8 years of age. Most of the pit latrines lacked ventilation pipes while few schools lacked adequate water supply to use in the toilets since they relied on community water supplies that were inadequate.

Recommendation

To ensure a child-friendly environment there is

a need to provide adequate budget allocation for sanitation in primary schools targeting all pupils including those living with disabilities. Schools should employ sanitation workers who will continuously keep the sanitation facilities clean regularly.

References

- Alexander, K. T., Zulaika, G., Nyothach, E., Oduor, C., Mason, L., Obor, D., Eleveld, A., Laserson, K. F., & Phillips-Howard, P. A. (2018). *Do Water, Sanitation, and Hygiene Conditions in Primary Schools Consistently Support Schoolgirls' Menstrual Needs? A Longitudinal Study in Rural Western Kenya*. *International journal of environmental research and public health*, 15(8), 1682. <https://doi.org/10.3390/ijerph15081682>
- Asian Development Bank ADB Practical guidebook on data disaggregation for the sustainable development goals DOI: <http://dx.doi.org/10.22617/TIM210117-2>
- Bangkara B.M.A.S.S., Syuryadi, M., & Kuncoro, W.A. (2021). Implementation of the theory of planned behavior as a predictor of people's intention to quit smoking. *Journal of Management Information and Decision Sciences*, 24 (S1), 1- 1
- Birdthistle, I., Dickson, K., Freeman, M., & Javidi, L. (2011). What impact does the provision of separate toilets for girls at schools have on their primary and secondary school enrolment, attendance, and completion? A systematic review of the evidence. *Social Science Research Unit, Institute of Education, University of London*, 6.
- Buxton, H., Dimaisip-Nabuab, J., Duijster, D., Monse, B., Benzian, H., & Dreibelbis, R. (2019). The impact of an operation and management intervention on toilet usability in schools in the Philippines: a cluster randomized controlled trial. *BMC Public Health*, 19(1), 1-11.
- Garn, J. V., Caruso, B. A., Drews-Botsch, C. D., Kramer, M. R., Brumback, B. A., Rheingans, R. D., & Freeman, M. C. (2014). Factors associated with pupil toilet use in Kenyan primary schools. *International journal of environmental research and public health*, 11(9), 9694-9711.
- GOK (2008) Safety Standard Manual for schools in Kenya. Ministry of Education
- GOK (2009) National School Health Policy, Ministry of Health
- GOK. (2014). Kenya Health Policy 2014–2030. Ministry of Health.
- GOK. (2018a) Kenya School Health Policy, Ministry of Education
- GOK (2018b). Meru County Development Plan 2018-2022.
- GOK. (2018c) National School Health Policy. Ministry of Education
- GOK (2022) Children's Act 2022
- Kruk, M. E., Gage, A. D., Arsenault, C., Jordan, K., Leslie, H. H., Roder-DeWan, S., Adeyi, O., Barker, P., Daelmans, B., Doubova, S. V., English, M., García-Elorrio, E., Guanais, F., Gureje, O., Hirschhorn, L. R., Jiang, L., Kelley, E., Lemango, E. T., Liljestrand, J., Malata, A., ... Pate, M. (2018). High-quality health systems in the Sustainable Development Goals era: time for a revolution. *The Lancet. Global health*, 6(11), e1196–e1252. [https://doi.org/10.1016/S2214-109X\(18\)30386-3](https://doi.org/10.1016/S2214-109X(18)30386-3)
- Manual, C. F. S. Water, Sanitation and Hygiene (WASH) in Schools.
- Meili, D., Schelbert, V., Alam, M. U., Antwi-Agyei, P., Simiyu, S., Adjei, K. A., & Günther, I. (2022). Indicators for sanitation quality in low-income urban settlements: evidence from Kenya, Ghana, and Bangladesh. *Social Indicators Research*, 162(2), 683-720.
- OECD (2022), Financing a water-secure future. OECD Publishing, Paris, <https://doi.org/10.1787/a2ecb261-en>
- Sekiwu, D., Ssempala, F., and Frances, N. (2020). Investigating the relationship between school attendance and academic performance in universal primary education: The case of Uganda. *African Educational Research Journal*, 8(2): 152-160.

UNICEF. (2010). *Progress for children: achieving the MDGs with equity* (No. 9). Unicef.

United Nations Children's Fund (UNICEF) and the World Health Organization, 2020. *State of the World's Sanitation: An urgent call to transform sanitation for better health, environments, economies, and societies*. New York: <https://www.unicef.org>

United Nations Children's Fund (UNICEF) 2021 Kenya Country Kit 2022-2022 <https://www.unicef.org/kenya/media/1951/file/UNICEF%20Kenya%20country%20kit%202020-2022.pdf>

Weaver, E. R., Agius, P. A., Veale, H., Dorning, K., Hlang, T. T., Aung, P. P., ... & Hellard, M. E. (2016). Water, sanitation, and hygiene facilities and hygiene practices associated with diarrhea and vomiting in monastic schools, Myanmar. *The American journal of tropical medicine and hygiene*, 95(2), 278.

Willmott, M., Nicholson, A., Busse, H., MacArthur, G. J., Brookes, S., & Campbell, R. (2016). Effectiveness of hand hygiene interventions in reducing illness absence among children in educational settings: a systematic review and meta-analysis. *Archives of disease in childhood*, 101(1), 42-50.

World Health Organization; (WHO) (2018) *Guidelines on sanitation and health*. Geneva: Licence: CC BY-NC-SA 3.0 IGO.

World Health Organization (WHO) (2019) *Improving health and learning through better water, sanitation and hygiene in schools*. <http://www.euro.who.int/pubrequest>