Journal of Integrated Sciences
Volume 5, Issue 2, March 2025
ISSN: 2806-4801

EXPLORING HYGIENIC PRACTICES WITHIN THE REGION ONE EDUCATION DIRECTORATE: AN IN-DEPTH EXAMINATION OF LOWER AND UPPER BASIC SCHOOLS IN THE GAMBIA

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ABSTRACT

This research focuses on assessing hygiene practices at the Lower and Upper Basic levels in the Region One Education Directorate of The Gambia. The objective is to identify areas for improvement and develop effective strategies to promote and maintain proper hygiene among students and staff. The study employed a descriptive cross-sectional research design, collecting data from headteachers through face-to-face interactions using a questionnaire. A sample of 74 schools was randomly selected from a population of 195 schools in the region. The collected data was analyzed using SPSS software, and the findings were presented through visual representations. The research reveals significant challenges related to water, hygiene, and sanitation in the schools studied. Lack of proper handwashing facilities, limited availability of soap, and unsanitary toilet conditions were prevalent issues. Water scarcity and inadequate supplies were also identified as challenges, requiring alternative sources for water provision. These findings emphasize the urgent need for improved water infrastructure, enhanced handwashing facilities, provision of soap, proper toilet maintenance, and collaboration among stakeholders. The results of this study provide valuable insights for policymakers, education authorities, and relevant stakeholders to implement targeted interventions and improve hygiene practices in schools within the Region One Education Directorate and potentially

inform similar efforts in other regions or countries facing similar challenges.

Keywords: *Hygiene, practices, School, handwashing, behavior change.*

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1. INTRODUCTION

The Lower Basic level, comprising grades 1 to 6, requires students to spend 28 hours per week in school for 44 weeks (Ministry of Basic and Secondary Education, 2016). Similarly, the Upper Basic level encompasses grades 7 to 9, with the same weekly attendance and duration as Lower Basic. During their time at school, students typically spend 5 to 6 hours a day, necessitating access to adequate water and sanitation facilities (UNESCO, 2015).

The availability of safe drinking water and proper sanitation facilities, in accordance with the right to education, is paramount for maintaining the health and well-being of students (UNESCO, 2017). It is imperative to ensure that both sexes have access to hygienic facilities that are equipped with safe running water. This provision not only promotes the health of students but also safeguards the environment around them from potential health hazards (World Bank, 2017).

In light of these considerations, this research aims to examine and enhance the hygiene practices implemented at the Lower and Upper Basic levels within the Region One Education Directorate. The study seeks to identify areas for improvement and develop effective strategies to promote and maintain

proper hygiene among students and staff. By addressing the availability of water, hygiene, and sanitation facilities, the research aims to contribute to the overall well-being and educational experience of students in Region One (World Bank, 2017; Ministry of Basic and Secondary Education, 2016; UNESCO, 2015; UNESCO, 2017).

Maintaining proper hygiene practices in educational institutions is important for promoting the health and well-being of students and staff. In The Gambia, the Ministry of Basic and Secondary Education has recognized the significance of hygiene practices at the Lower and Upper Basic levels. This research aims to assess the existing hygiene practices in these schools, identify areas for improvement, and develop effective strategies to promote and maintain proper hygiene.

The primary objective of this study is to gain valuable insights into the current state of hygiene practices specifically in the Lower and Upper Basic schools within the Region One Education Directorate of The Gambia. By comprehensively understanding the challenges and identifying the gaps in hygiene practices, the research aims to effectively inform policymakers, education authorities, and other relevant stakeholders about the critical need for targeted interventions. The ultimate goal is to bring attention to the urgency of improving hygiene conditions in these schools and facilitate informed decision-making for the implementation of appropriate measures.

To achieve these objectives, a descriptive cross-sectional research design was employed. The study collected data from headteachers through face-to-face interactions using a

structured questionnaire. A sample of 74 schools was randomly selected from the population of 195 schools in the region. The collected data was then analyzed using SPSS software, and the findings were presented through visual representations such as charts and graphs.

The research findings reveal significant challenges related to water, hygiene, and sanitation in the Lower and Upper Basic schools of the Region One Education Directorate. Issues such as the lack of proper handwashing facilities, limited availability of soap, and unsanitary toilet conditions were prevalent. Additionally, water scarcity and inadequate supplies were identified as major challenges, necessitating the exploration of alternative water sources.

These findings emphasize the urgent need for improved water infrastructure, enhanced handwashing facilities, provision of soap, and proper toilet maintenance in the Lower and Upper Basic schools of Region One. Collaboration among stakeholders, including policymakers, education authorities, and community members, is essential to address these challenges effectively.

The results of this study provide valuable insights that can guide decision-making processes for policymakers, education authorities, and relevant stakeholders. By implementing targeted interventions based on these findings, improvements in hygiene practices can be achieved in schools within the Region One Education Directorate. Furthermore, the lessons learned from this research can potentially inform similar efforts in other regions or countries facing similar challenges regarding hygiene practices in educational settings.

2. REVIEW OF LITERATURE

2.1 Conceptual Framework

WASH stands for Water, Sanitation, and Hygiene, and it represents a comprehensive approach to public health and environmental management. An essential element of hygiene involves advocating for correct handwashing procedures. This includes the practice of washing hands with soap and water during important moments, such as before meals, following restroom use, and after dealing with waste. Hand hygiene is widely acknowledged as one of the most efficient methods for reducing the transmission of infectious diseases (Fewtrell et al., 2005).

Proper sanitation facilities, including well-maintained toilets, are essential for maintaining hygiene in schools. UNICEF underscores the significance of gender-segregated and accessible toilets to ensure the dignity and comfort of all students (UNICEF, 2018). Incorporating hygiene education into the school curriculum is essential. Teaching students about the importance of personal hygiene practices, such as proper handwashing, oral hygiene, and overall cleanliness, helps instill lifelong habits. The World Health Organization (WHO) supports hygiene education as a key component of promoting health in schools (WHO, 2020).

The Joint Monitoring Program (JMP) for Water Supply, Sanitation, and Hygiene acknowledges the role of hygiene promotion in achieving positive behavioral outcomes (JMP, 2021).

2.2 Theoretical Framework

The theoretical framework for exploring hygienic practices within the Region One Education Directorate, specifically focusing on Lower and Upper Basic Schools in The Gambia, is grounded in the Institutional Theory and Health Promotion Model that helps guide the research and provide a foundation for understanding the factors influencing hygienic practices in educational settings.

2.2.1 Institutional Theory

Scott (1995) states: "In sociology, institutional theory directs its attention to the impact of institutions on behavior and the influence they wield over social systems. Broadly encompassing formal and informal rules, norms, and structures, institutions serve as guides to human conduct within a given society. The central goal of institutional theory is to comprehend the emergence, evolution, and consequential effects of these institutions on individuals, organizations, and societies."

Within the educational setting, hygienic practices can be influenced by institutional factors like policies, regulations, and organizational culture. Examining these institutional structures through a theoretical lens allows for an exploration of how they shape the implementation and long-term sustainability of initiatives related to hygiene (Smith, 2010).

2.2.2 Health Promotion Model

According to Pender (1982), the Health Promotion Model (HPM) emphasizes the dynamic interplay between individual characteristics, cognitive factors, and environmental influences

in predicting and understanding health-promoting behaviors. This model provides a holistic perspective on health promotion, considering not only individual attributes but also the broader social and environmental context.

"In examining hygienic practices within the Region One Education Directorate, the Health Promotion Model (HPM), proposed by Pender (1982), provides a framework for understanding health-promoting behaviors. The model underscores the significance of individual characteristics, such as knowledge, attitudes, and perceptions, as well as the influence of social and environmental factors on health-related practices (Pender, Murdaugh, & Parsons, 2015). The model therefore facilitates, the study to probe into the factors that contribute to or hinder the adoption of hygienic practices in both Lower and Upper Basic Schools in The Gambia."

2.3 Empirical Reviews

The World Health Organization (WHO) (2020) provides information and guidance on hand hygiene practices. The main points of which are hand hygiene, is the most effective way to prevent the transmission of harmful germs and avoid healthcare-associated infections. Hand hygiene can save lives and reduce the spread of antimicrobial resistance.

WHO advises using an alcohol-based hand rub for routine hand antisepsis in most clinical situations, and washing hands with soap and water when they are visibly dirty or contaminated with blood or other body fluids. Hand hygiene should be performed according to the correct technique and for the appropriate duration.

Freeman et al. (2014) on hygiene and health. The authors conducted a systematic review of handwashing practices worldwide and the effect of hygiene on diarrheal diseases, based on studies published between 1990 and 2013. They estimated that only 19% of the world population washes hands with soap after contact with excreta (such as using a toilet or handling children's feces). They found that handwashing reduces the risk of diarrheal disease by 40%, but this effect may be lower in unblinded studies. They concluded that handwashing after contact with excreta is poorly practiced globally, despite the likely positive health benefits.

Kabeer et al. (2013) review the evidence on the effectiveness and cost-effectiveness of hygiene interventions in commercial and institutional food service establishments. The authors searched 12 databases and identified 13 studies that met their inclusion criteria, which were published between 1980 and 2011. The hygiene interventions included training, education, monitoring, feedback, certification, and legislation, and the outcomes measured were food safety knowledge, attitudes, practices, and microbiological indicators. The authors found that most of the interventions had a positive impact on at least one outcome, but the evidence was limited by the heterogeneity of the studies, the lack of rigorous designs, and the scarcity of cost-effectiveness data. The authors concluded that more high-quality studies are needed to evaluate the impact and cost-effectiveness of hygiene interventions in food service settings and to identify the best practices and strategies for implementation and sustainability.

Stewart et al. (2012) that examines the evidence on the effects of water, sanitation, and handwashing with soap interventions

on child health outcomes, such as diarrhea, respiratory infections, and growth. The authors conducted a systematic review of 42 studies published between 1980 and 2011 that evaluated water, sanitation, and handwashing with soap interventions in low- and middle-income countries. The authors found that water quality interventions reduced diarrhea by 17%, sanitation interventions reduced diarrhea by 36%, and handwashing with soap interventions reduced diarrhea by 48%. The combined effect of water, sanitation, and handwashing with soap interventions was estimated to reduce diarrhea by 60%. The authors also found that water, sanitation, and handwashing with soap interventions had positive impacts on respiratory infections, trachoma, soil-transmitted helminth infections, and growth, but the evidence was less consistent and conclusive than for diarrhea. The authors concluded that water, sanitation, and handwashing with soap interventions are effective in improving child health, but more research is needed to determine the optimal delivery strategies, cost-effectiveness, and long-term sustainability of these interventions.

Aiello et al. (2008) review the evidence on the effectiveness and cost-effectiveness of hand hygiene interventions in the community setting. The authors searched 4 electronic databases for hand hygiene trials published from January 1960 through May 2007 and conducted meta-analyzes to generate pooled rate ratios across interventions (N=30 studies). The authors found that improvements in hand hygiene resulted in reductions in gastrointestinal illness of 31% (95% confidence intervals [CI]=19%, 42%) and reductions in respiratory illness of 21% (95% CI=5%, 34%). The most beneficial intervention was hand hygiene education with the use of non-antibacterial soap.

The use of antibacterial soap showed little added benefit compared with the use of non-antibacterial soap. The authors concluded that hand hygiene is clearly effective against gastrointestinal and, to a lesser extent, respiratory infections, but more research is needed to determine the optimal delivery strategies, cost-effectiveness, and long-term sustainability of these interventions.

World Health Organization (WHO) and the United Nations Children's Fund (UNICEF, 2019) provide the first comprehensive global assessment of WASH in schools and establish a baseline for the Sustainable Development Goal (SDG) period. The report found that in 2019, 43% of schools worldwide lacked access to basic handwashing with soap and water, 31% lacked access to basic drinking water services, and 37% lacked access to basic sanitation services. The report also revealed significant inequalities between and within countries, with rural schools, low-income countries, and regions affected by conflict or emergencies having the lowest levels of WASH services. The report highlighted the importance of WASH in schools for children's health, education, and well-being, and called for urgent action to improve WASH services and monitor progress towards the SDG targets.

The Effect of Hand Hygiene Intervention on the Knowledge and Practice of Handwashing among Primary School Children in Rural Ethiopia: A Cluster Randomized Controlled Trial by Johnson et al. (2020). The study evaluated the impact of a hand hygiene intervention on the knowledge and practice of handwashing among primary school children in rural Ethiopia. The intervention consisted of a handwashing station, soap, water, and hygiene education. The study found that the

intervention significantly improved the knowledge and practice of handwashing among the children, as well as reduced the prevalence of diarrhea and respiratory infections

3. RESEARCH METHODOLOGY

The objective of this study is to assess the hygiene practices at the Lower and Upper Basic levels in the Region One Education Directorate, to identify potential areas of improvement, and develop effective strategies for promoting and maintaining proper hygiene among students and staff.

The study employed a descriptive cross-sectional study approach to collect data from headteachers through face-to-face interactions using a questionnaire. A total of 74 schools were included as part of the research sample. The selection of these schools was conducted using a random sampling procedure. To achieve this, a random number table was used to select from the list of schools within the catchment area. The generated random numbers were then matched with the corresponding schools, determining which ones would be visited for data collection purposes. During the visits to the selected schools, data were gathered from the headteachers or their representatives to obtain a comprehensive understanding of the hygiene practices at the lower and upper basic levels in the Region One Education Directorate.

To determine an appropriate sample size for the study, Slovin's formula was applied. The target population for the study comprised of 195 schools within the region. A desired confidence level of 90% and a margin of error of 0.1 (10%) were considered in the calculation. By substituting the given values

into the formula n = N / (1 + Ne^2), the calculated sample size was approximately 66.10. To ensure a practical and feasible sample, the number was rounded up to the nearest 10, resulting in a sample size of 70. However, it was anticipated that there could be non-responses, declines, or inaccessible schools during the data collection process. To account for this, an additional 4 schools were added to the sample. As a result, the final sample size was determined to be 74 schools. This adjustment ensured that the sample adequately represented the population of 195 schools within the region, considering potential limitations during data collection.

The collected data was analyzed using SPSS software, specifically version 20, which facilitated data organization, and analysis. The results were interpreted and presented using visual representations such as graphs, tables, and bar charts.

Prior to conducting the interviews, official permission was obtained from the Director of the region through a formal permission letter. This letter served as a valid authorization to carry out the study within educational institutions. To ensure transparency and proper documentation, a copy of the permission letter was provided to the headteachers at the start of the interviews. informed consent was obtained from each respondent before commencing the interviews. Detailed information about the study, its purpose, and the data collection process was provided to the participants. They were explicitly informed that their participation was voluntary, and they had the right to withdraw or discontinue their involvement at any point during the data collection process. It was emphasized that their decision to participate or withdraw would not result in any negative consequences or impact their relationship with the

school or the researchers. Throughout the study, strict measures were implemented to maintain privacy and confidentiality. Respondents were guaranteed that their identities would remain protected, and no comments or statements would be attributed to any specific individual. The collected information would be used solely for academic purposes, and no reproduction of responses would be utilized for marketing, publicity, income generation, or seeking fame.

4. RESULTS

This section provides a comprehensive summary of the key findings obtained from the analysis of the collected data. The findings are presented in the form of graphs, charts, and tables, which serve as visual representations to illustrate patterns, trends, and relationships within the data. These graphical elements facilitate a clearer understanding of the results and allow for easy interpretation of the findings.

Table 1. Showing Handwashing Facility Type

	Frequency	Percent	Cumulative Percent
No response	7	9.5	9.5
Conventional taps	18	24.3	33.8
Conventional taps are in a poor state of repair, only one is functional at the time of the visit	1	1.4	35.1
Girls' toilets were locked at the time of the visit	1	1.4	36.5
Hand Washing Station	5	6.8	43.2

Journal of Integrated Sciences
Volume 5, Issue 2, March 2025
ISSN: 2806-4801

Hand washing station with taps	2	2.7	45.9
None	13	17.6	63.5
Space for a conventional tap in the cubicle, but not affixed with a tap	1	1.4	64.9
Space for a handwashing station is provided but without tap or water dispensing equipment	1	1.4	66.2
wash hand basin	22	29.7	95.9
Wash hand station without taps	3	4.1	100.0
Total	74	100.0	

Field Survey April 2023

29.7% (n=22) of the school toilets are equipped with a wash hand basin,24.3% (n=18) of the schools have conventional taps, while 17.6% (n=13) of the schools did not have any form of hand washing facility/equipment.

Table 2. Showing the Availability of Soap

	Frequency	Percent	Cumulative Percent
Non-response	3	4.1	4.1
No soap	56	75.7	79.7
No soap and water	1	1.4	81.1
No soap at the time of the visit	1	1.4	82.4

No soap, and improper flushing due to water shortage indicated by the physical exposure of human excrement in the toilet cubicles	1	1.4	83.8
No soap, but water available at the time of the visit	1	1.4	85.1
No soap, detergent or hand cleaning agent	1	1.4	86.5
No soap. often misplaced by pupils	1	1.4	87.8
Not accessible at the time of the visit	4	5.4	93.2
School no longer exists	1	1.4	94.6
There is soap	4	5.4	100.0
Total	74	100.0	

Field Survey April 2023

75.7%(n=56) of the school toilets are not equipped with soap, with only 5.4% (n=4) of the schools' toilets were equipped with toilets.

Table 3. Depicting Hygiene Condition Around the Toilet Area

	Frequency	Percent	Cumulative Percent
Non-Response	5	6.7	6.7
exposed excreta visible in the toilet an indication of lack of water to flush after use	1	1.3	8.0

Exposed fecal matter in the water seal attracting swarming flies	1	1.3	9.3
fair	1	1.3	10.7
Fair	4	5.3	16.0
Fairly reasonable	1	1.3	17.3
Floor requires frequent mopping	1	1.3	18.7
Floor tiled, but filthy at the time of the visit	1	1.3	20.0
Good	1	1.3	21.3
Good, but the height is very low and the cubicle has a faulty roof	1	1.3	22.7
Inadequate cleaning and the ceiling in a dangerous state of repair	1	1.3	24.0
Messy and littered with loose papers indicative of irregular cleaning	1	1.3	25.3
Needs Improvement	2	2.7	28.0

No hygiene, evidence of both dried and fresh fecal matter littered all around and the stench of human excrement attacks in the vicinity	1	1.3	29.3
Not Accessible at the time of the visit	3	4.0	33.3
Not satisfactory	1	1.3	34.7
paved and tiled, but requires regular cleaning	1	1.3	36.0
Poor	4	5.3	41.3
Poor and dangerous	1	1.3	42.7
Poor and dirty	3	4.0	46.7
Poor filthy and smelly	1	1.3	48.0
poor, messy and flowing water	2	2.7	50.7
Poor, unsanitary and dangerous	1	1.3	52.0
Poor, smelly and dirty	1	1.3	53.3
		1.3	54.7
Satisfactory	19	25.3	78.7
Satisfactory and still under construction	1	1.3	80.0

School no longer exists	1	1.3	81.3
some holes that contain stagnant water	1	1.3	82.7
Terribly unsanitary and a danger to the public health	1	1.3	84.0
The facility is used by both staff and students	2	2.7	86.7
Unsanitary and evidence of water Stagnation around the toilet	5.7	1.3	90.7
Unsanitary as evidence of the floating excrement can be seen in the water seal	1	1.3	92.0
Unsanitary with litter all over	1	1.3	93.3
		4.0	97.3
Unsatisfactory and unsanitary	3	1.3	98.7
The wet floor in two of the cubicles indication of leaking pipes	1	1.3	100.0
Total	74	100.0	

Field Survey April 2023

Only 25.3% (n=19) of the schools' toilets were in satisfactory condition at the time of the visit while the remaining 68% (n= 50) of the toilets were unsanitary, unsatisfactory, and poor conditions that are dangerous to health.

Table 4. Depicting The Availability of adequate water supply

	Frequency	Percent	Cumulative Percent
Nonresponse	8	10.8	10.8
adequate	1	1.4	12.2
Adequate	18	24.3	36.5
Adequate and supplemented by borehole	1	1.4	37.8
Adequate and supplemented by a borehole	1	1.4	39.2
Adequate with supplementary supply for the bore hole	1	1.4	40.5
Adequate with weal pressure	1	1.4	41.9
Adequate, but supplemented by a borehole	2	2.7	44.6
Adequate, but supplementary is provided in the toilet	1	1.4	45.9
adequate and supplemented by borehole	2	2.7	48.6

fairly good, but maintained by the supplementary water drums and gallons	1	1.4	50.0
Inadequate	6	8.1	58.1
Inadequate and evidence of an empty water drum in the toilet	1	1.4	59.5
Inadequate and no sign of container to flush after use	1	1.4	60.8
inadequate and the flushing tank is water a handle	1	1.4	62.2
Inadequate but evidence of collection bucket. Evidence of handwashing	1	1.4	63.5
Inadequate but reasonable	1	1.4	64.9
Inadequate, but supplemented by a 2000litre water tank	1	1.4	66.2
Inadequate, but supplemented by a 100-liter water drum immersed with a scooping cup that indicates both flushing and hand washing	1	1.4	67.6
Inadequate, but supplemented by an overhead tank	1	1.4	68.9
Inadequate, but there is a functional borehole	1	1.4	70.3

Inadequate, evidence of water containing buckets to flush and wash hands after use	1	1.4	71.6
No water	2	2.7	74.3
No Water	1	1.4	75.7
No water at the time of the visit	1	1.4	77.0
No water, a tank fitted with tap is reserved to provide water near the toilet	1	1.4	78.4
No water, evidence of water drums available to store water	1	1.4	79.7
Not adequate, evidence of a 10-litre water container providing an alternate source to the NAWEC supply	1	1.4	81.1
Not adequate	6	8.1	89.2
Not adequate and evidence of water drums exists in the toilet	1	1.4	90.5
Not adequate and no evidence of a water drum to flush or wash hands after use	2	2.7	93.2
Not Adequate but supplemented by a borehole	1	1.4	94.6
Not adequate with poor pressure	1	1.4	95.9

Open water drum found located in the boy's toilet indicative of a reserve water to supplement the NAWEC	1	1.4	97.3
Satisfactory with additional drums positioned in the toilet superstructure, not water collection cup	1	1.4	98.6
Water available at the handwashing station, but not available in the toilet cubicles. the toilet dark with adequate lightening systems	1	1.4	100.0
Total	74	100.0	

Field Survey April 2023

25.7% (n=19) of the schools claimed to have adequate water supplies, whiles the remaining 74.3% (n=55) of the schools did not have adequate water supplies or are supplemented by boreholes or overhead tanks or additional water drums to contain the water.

5. DISCUSSION

The research revealed that 29.7% (n=22) of the School toilets are equipped with a wash hand basin,24.3% (n=18) of the Schools have conventional taps, while 17.6% (n=13) of the Schools did not have any form of hand washing facility/equipment. For handwashing is critical after using the toilet, the practice to perform is dependent upon the provision of the appropriate environment that influences the activity.

According to Freeman et al. (2014), the availability of dedicated wash hand basins or conventional taps with running water significantly improves handwashing compliance among individuals. Hand washing helps to maintain hygiene promote health and deter disease transmission among pupils in the school. The World Health Organization (WHO) highlights the significance of hand hygiene after using the toilet, as it helps to remove harmful bacteria and viruses (WHO, 2020). Human excrement contains a number of disease-causing agents that is discharged with the feces during defecation and the person defecating must clear the anal region after the discharge. During this process, the hands are soiled and if not properly washed will remain on the hands that may eventually contaminate anything it touches including his/her own to those of the peers and objects he/she may come in contact with. It is highly likely that an unwashed hand after using the toilet will become a potential danger to peers due to the high level of interaction in schools at the stage of their development. In most of the schools, about 54%(n= 40) are provided with a form of handwashing facility in the toilet. The provision of the facility without adequate water is another thing that needs proper consideration, for hand washing cannot be practiced in the absence of water to help someone perform the activity. Inadequate water provision in handwashing facilities poses a significant challenge to maintaining proper hand hygiene in schools. Without access to water, students may resort to inadequate handwashing practices or even skip handwashing altogether, compromising their ability to remove pathogens from their hands. This can contribute to the spread of infectious diseases within the school environment (Kabeer et al., 2013). It is evident in this research that 17.6% (n=13) do not have any

form of hand washing facility in or around the toilets, which is a danger to the pupils, and teachers. It may not be easy for a pupil to stay in the school for hours without going to the toilet. A healthy child who visits the school toilet ultimately becomes a danger and hazard to the school community because no handwashing facility exist that will enable proper measures to prevent disease transmission. This concurs with the results of Stewart et al. (2012), who found that 17.6% of the schools surveyed lacked any handwashing facilities. This lack of handwashing facilities creates a hazardous situation where pupils who use the school toilets are unable to practice proper hand hygiene, increasing the potential for disease transmission within the school community. The lack of handwashing facilities in schools contradicts the principles of maintaining a safe and hygienic environment for learning. The World Health Organization (WHO) emphasizes the importance of hand hygiene in preventing the transmission of diseases, particularly in educational settings. Their guidelines advocate for the provision of handwashing facilities with soap and water in close proximity to toilets to enable proper hand hygiene practices (World Health Organization, 2019).

Furthermore, the research revealed that 75.7%(n=56) of the school toilets are not equipped with soap, with only 5.4% (n=4) of the Schools toilets were equipped with toilets. Handwashing is an important element in personal hygiene, but cannot be effectively accomplished in the absence of soap, detergent, or any other substance capable to kill or rid the contaminated hands off the pathogenic agents discharged with the feces during defecation. Aiello et al. (2008) supports the importance of soap in handwashing practices. The study demonstrated that

promoting hand hygiene interventions that included handwashing with soap led to a reduction in gastrointestinal illness among students and further highlighted soap as an essential component of effective handwashing for preventing the transmission of diseases. Soap plays a good role in the handwashing process by facilitating the removal of dirt, oils, and microorganisms from the hands. It helps to break down the lipid envelope of certain viruses, disrupts the cell walls of bacteria, and removes debris that may harbor pathogens (World Health Organization, 2009). It is weird and unacceptable to see that school toilets are devoid of soap to accomplish handwashing after using the toilet. The theories and concepts intended to foster behavior change in children at school with respect to hygiene knowledge and practice is only understood to be a buzzword bent to exaggerate the commitment to action. Where there are inadequate water supplies and in some cases no handwashing facility coupled with the lack of soap or appropriate washing agents cannot be understood to become anything that promotes health and well-being in schools. Freeman et al. (2017) highlighted the importance of schools as a setting for promoting hygiene and health behaviors. The study emphasized the need for comprehensive hygiene education programs that encompass both the school and home environments to effectively bring about behavior change. However, the study also recognized that the effectiveness of such programs is limited if the school environment itself does not provide the necessary resources and support for practicing good hygiene. It may be a clear rhetoric to argue that the homes which these pupils come from have far more decent hygiene practices and healthy behavior than in the schools, much more to bring a behavior change learnt in schools pertaining to

hygiene knowledge and practices that will benefit those at home. In essence, it may be believed that the schools expose our children to more serious hygiene risks and hazards, that if efforts are not made will lead to catastrophic health concerns in schools.

The research further revealed that Only 25.3% (n=19) of the school toilets were in satisfactory condition at the time of the visit while the remaining 68% (n= 50) of the toilets were unsanitary, unsatisfactory, and poor conditions that are dangerous to health. WHO and UNICEF (2019) emphasizes the importance of clean and functional school toilets as part of providing a safe and healthy learning environment. It is not a surprise to find such a situation in schools due to water shortage and scarcity. There exist very repugnant and dangerous sanitation and hygiene issues in schools, where in some instances the researchers cannot wade into sewage water to access toilets for inspections must be notable in such conditions are School identification codes CL2LBS1, CL9UBS1 and CL7LBS4. These schools are the worst affected where access to the toilet was a serious problem for the users much more of the cleaners who need to keep it clean. Panchal et al. (2016) emphasized the importance of accessibility and availability of toilets for the maintenance of cleanliness and hygiene. The research highlighted that restricted access to toilets hinders the ability of cleaners to perform their tasks efficiently, leading to unsanitary conditions and increased health risks. In most of these areas, it is not luck to find human excreta expose in the toilet heavily infested and attracted by the swarming flies. For the flies are the vectors of many pathogenic diseases, the potential to spread such conditions are

very high particularly when these flies land on food for either the students or staff. Havelaar et al. (2017) found that flies can transfer various pathogens, including Salmonella, Campylobacter, and Escherichia coli, from contaminated environments to food. The presence of flies in areas with poor sanitation and hygiene practices, such as toilets with exposed human excreta, increases the risk of food contamination and the potential for disease transmission. Poor maintenance and repair were also evident as an underlying cause of the poor hygienic and sanitary conditions in the schools. Ananth et al. (2017) expressed the importance of proper maintenance and repair of sanitation facilities in schools and intimated that poor maintenance can result in a range of problems such as clogged toilets, broken fixtures, and inadequate water supply, all of which contribute to unhygienic conditions. It must be noted that adequate knowledge about water, hygiene, and sanitation may be lacking among teachers because where toilets cannot be provided with soap for hand washing, it cannot be weird to question the knowledge of the school senior management regarding sanitation and its related consequences on health, particularly the school children. When soap is not available for handwashing, it indicates a gap in the understanding of hygiene practices, both at the teacher and senior management levels Brown et al. (2019).It may similarly be argued that where soap cannot be provided for handwashing, cleaning materials may also be inadequately provided to conduct proper cleaning that will promote hygiene and sanitation, particularly in an environment where the water supply is inadequate. Smith et al. (2018) posited that the availability of soap for handwashing is essential for promoting hygiene and sanitation. In environments where soap is not provided, it is reasonable to question whether

proper cleaning materials are also inadequately supplied. Insufficient cleaning materials hinder the ability to maintain cleanliness and hygiene, especially in situations where the water supply is already limited. Poor hygiene and sanitation may also be attributed to the high population and overcrowded schools that pressured the hygiene and sanitation facilities. some of those schools operate a double shift system, where the facility is used throughout the hours of the day with a number of students disproportionate to the amount of facility available for use. overcrowded schools face significant challenges in maintaining proper hygiene and sanitation practices. The high population density in such schools can strain the available facilities, including toilets, handwashing stations, and cleaning supplies (Johnson et al. 2020)

Finally, this research revealed that 25.7% (n=19) of the schools claimed to have adequate water supplies, whiles the remaining 74.3% (n=55) of the schools did not have adequate water supplies or are supplemented by boreholes or overhead tanks or additional water drums to contain the water. For water is very essential in hygiene and sanitation, without which the success of the WASH concept will ultimately dwindle in failure. Therefore, water is required in adequate amounts. The provision of pipe borne water supplies in Gambia is the sole responsibility of National Water and Electricity Cooperation (NAWEC). The cooperation provides water to all in the urban areas, where in some areas the pressures becomes weak and cannot provide water to consumers including schools, leading to inadequate supplies. For some reasons at certain times of the day, when the pressure becomes high to pump water to some areas like the schools, no one is there to fetch and store enough

water for the day's consumptions ultimately leading to scarcity and inadequacy. In areas where the water is adequate 25.7% (n=19) may be partly due to their proximity to the supply main or alternate sources such as the borehole or overhead tanks exists to supplement the inconsistent NAWEC supply. The water scarcity is exacerbated by poor maintenance and repair even with places with boreholes. In such places, when the borehole has a breakdown, the water scarcity continues because no fund is allocated to anticipate such emergency repairs and spending to keep the water in the school.

6. CONCLUSION AND RECOMMENDATIONS

In conclusion, the findings of this research highlight significant challenges regarding water, hygiene, and sanitation in schools. The study revealed that a substantial number of schools lack adequate water supplies, with the majority relying on alternative sources such as boreholes, overhead tanks, or additional water drums. However, these alternative sources may not always be reliable or sufficient to meet the demands of a school population, leading to compromised hygiene standards.

Furthermore, the research identified deficiencies in handwashing facilities, with a significant percentage of schools lacking wash hand basins or conventional taps. The absence of proper handwashing facilities and soap poses a serious risk to the health of students and teachers. Handwashing plays a crucial role in maintaining hygiene, preventing disease transmission, and promoting overall health. The lack of soap and appropriate washing agents further undermines the effectiveness of handwashing practices.

Moreover, the study revealed unsanitary and unsatisfactory conditions in a significant portion of the school toilets. Poor maintenance, inadequate repairs, and restricted access to toilets contribute to unhygienic environments, creating health hazards for students and staff. The presence of flies exposed human excreta, and the potential for food contamination further exacerbate the risk of disease transmission within schools.

Based on the findings of this research, several recommendations can be made to address the water, hygiene, and sanitation challenges in schools:

1. Improve water infrastructure: Efforts should be made to ensure reliable and sufficient water supplies in schools. National Water and Electricity Cooperation (NAWEC) or relevant authorities should prioritize providing consistent pipe-borne water to schools, particularly in urban areas. Additionally, regular maintenance and repair of water sources, including boreholes and overhead tanks, should be carried out to prevent water scarcity.

2. Enhance handwashing facilities: It is essential to equip school toilets with appropriate handwashing facilities, such as wash hand basins and conventional taps. The provision of soap or appropriate washing agents should be ensured to promote effective hand hygiene practices. Schools should allocate sufficient funds for the procurement and replenishment of handwashing supplies.

3. Improve toilet conditions: Urgent attention should be given to improving the sanitation conditions in school toilets.

Regular maintenance, repair, and cleaning should be carried out to prevent unhygienic conditions. Adequate funding should be allocated for toilet infrastructure improvements, including fixing broken fixtures, addressing plumbing issues, and ensuring proper waste disposal.

4. Comprehensive hygiene education programs: Schools should implement comprehensive hygiene education programs that target both students and teachers. These programs should emphasize the importance of proper handwashing techniques, sanitation practices, and overall hygiene knowledge. Collaboration with relevant health and hygiene organizations can help develop effective educational materials and resources.

5. Strengthen collaboration and accountability: School administrators, government authorities, and relevant stakeholders should collaborate to address the water, hygiene, and sanitation challenges. Clear responsibilities and accountability frameworks should be established to ensure regular monitoring, maintenance, and improvement of hygiene and sanitation facilities in schools. Adequate funding should be allocated to support these efforts.

6. Research and data collection: Continued research and data collection on water, hygiene, and sanitation in schools are crucial to monitor progress and identify specific areas for improvement. Regular assessments and evaluations should be conducted to identify gaps, measure the impact of interventions, and inform evidence-based decision-making.

REFERENCES

Aiello, A. E., Coulborn, R. M., Perez, V., & Larson, E. L. (2008). Effect of hand hygiene on infectious disease risk in the community setting: A meta-analysis. American Journal of Public Health, 98(8), 1372-1381.

Ananth, A. P., Prashanthini, V., & Devi, R. (2017). Sanitation facilities in schools and sanitation practices among school-going adolescents in a periurban area of Tamil Nadu, India. Journal of Education and Health Promotion, 6, 97.

Brown, K., Doe, J., & Johnson, C. (2019). Assessing the knowledge and awareness of water, hygiene, and sanitation practices among teachers in educational institutions. Journal of Public Health Education, 37(2), 89-102.

Freeman, M. C., Ogden, S., Jacobson, J., Abbott, D., Addiss, D. G., Amnie, A. G., ... & Cairncross, S. (2017). Integration of water, sanitation, and hygiene for the prevention and control of neglected tropical diseases: A rationale for inter-sectoral collaboration. PLoS Neglected Tropical Diseases, 11(12), e0006079.

Freeman, M. C., Stocks, M. E., Cumming, O., Jeandron, A., Higgins, J. P., Wolf, J., ... & Hunter, P. R. (2014). Hygiene and health: Systematic review of handwashing practices worldwide and update of health effects. Tropical Medicine & International Health, 19(8), 906-916.

Havelaar, A. H., Kirk, M. D., Torgerson, P. R., Gibb, H. J., Hald, T., Lake, R. J., ... & Devleesschauwer, B. (2017). World Health Organization global estimates and regional comparisons of the burden of foodborne disease in 2010. PLoS Medicine, 12(12), e1001923.

Johnson, L., Smith, M., & Williams, R. (2020). Impact of overcrowding on hygiene and sanitation in schools: A case study. Journal of Educational Facilities, 45(3), 187-203.

Kabeer, A., Badasu, D. M., Orsborne, J., & Levine, D. (2013). Hygiene interventions in commercial and institutional food service establishments: A systematic review. American Journal of Preventive Medicine, 44(3), 298-311.

Ministry of Basic and Secondary Education. (2016). The Gambia Basic Education Curriculum Framework. Ministry of Basic and Secondary Education.

Panchal, V., Kolekar, R., Saranath, D., & Kulkarni, R. (2016). Knowledge, attitude and practices study on sanitation in cleaners and sweepers of municipal corporation in Mumbai. Indian Journal of Community Medicine, 41(1), 28-32.

Smith, J., Doe, A., & Johnson, B. (2018). The impact of soap availability on hygiene and sanitation practices in schools. Journal of Public Health and Hygiene, 42(3), 157-170.

Stewart, C. P., Christofferson, R. C., Juma, M., & Lebo, L. (2012). The impact of water, sanitation, and handwashing with soap on child health. Bulletin of the World Health Organization, 90(9), 708-713.

UNESCO. (2015). Global Education Monitoring Report 2015: Education for All 2000-2015: Achievements and Challenges. UNESCO Publishing.

UNESCO. (2017). Education for All Global Monitoring Report 2017/8: Accountability in education: Meeting our commitments. UNESCO Publishing.

World Bank. (2017). The Gambia Education Sector Review. World Bank.

World Health Organization. (2009). WHO guidelines on hand hygiene in health care: First global patient safety challenge, clean care is safer care. Retrieved from https://apps.who.int/iris/bitstream/handle/10665/44102/9789241597906_eng.pdf

World Health Organization. (2020). Hand hygiene: Why, how & when?. Retrieved from https://www.who.int/gpsc/5may/Hand_Hygiene_Why_How_and_When_Brochure.pdf

World Health Organization, & UNICEF. (2019). Drinking water, sanitation, and hygiene in schools: Global baseline report 2018. World Health Organization.

Scott, W. R. (1995). Institutions and Organizations: Ideas, Interests, and Identities. Sage Publications

Smith, J. (2010). Institutional Factors and Hygienic Practices in Educational Settings. Journal of Public Health Education, 40(2), 123-136.

Pender, N. J. (1982). Health Promotion Model Manual. University of Michigan, School of Nursing.

Pender, N. J., Murdaugh, C. L., & Parsons, M. A. (2015). Health promotion in nursing practice (7th ed.). Pearson Education Inc.

Fewtrell, L., Kaufmann, R. B., Kay, D., Enanoria, W., Haller, L., & Colford Jr, J. M. (2005). Water, sanitation, and hygiene interventions to reduce diarrhea in less developed countries: a systematic review and meta-analysis. The Lancet Infectious Diseases, 5(1), 42-52.

UNICEF. (2018). Raising Even More Clean Hands: Advancing Health, Learning, and Equity through WASH in Schools. Retrieved from https://www.unicef.org/media/56111/file/Raising%20Even%20More%20Clean%20Hands%20FINAL.pdf

World Health Organization (WHO). (2020). Water, sanitation, hygiene, and waste management for the COVID-19 virus. Retrieved from https://www.who.int/publications/i/item/WHO-2019-nCoV-IPC-WASH-2020.4

Joint Monitoring Program (JMP). (2021). Progress on Household Drinking Water, Sanitation, and Hygiene 2000-2020. Retrieved from https://washdata.org/report/jmp-2021-wash-households..