

# Evaluation of the Safe Water, Hygiene, and Sanitation Program in Adjara Schools

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## ABSTRACT

**Background:** WASH (Water, Sanitation, and Hygiene) conditions in rural Georgian schools are inadequate, leading to health risks. The Georgian Medical Group (GMG) project, funded by USAID and the Coca-Cola Foundation from 2015 to 2021, aimed to address these challenges in the Adjara and Guria regions of Georgia.

**Objectives:** This study evaluates the availability of WASH facilities, identifies key challenges, and examines the impact on students and teachers in rural schools.

**Methods:** A case-control study was conducted using semi-structured interviews with ten schools, 50 teachers, and 382 students. Data were collected on water access, sanitation, and hygiene practices.

**Results:** 54% of students reported consistent access to water, but 97% avoided drinking school water due to its poor quality. 76.5% of respondents reported avoiding using school toilets, citing cleanliness, odors, and distance as the primary barriers. Additionally, 80% reported experiencing challenges related to WASH.

**Conclusions:** Major WASH issues, including poor water quality and sanitation, hinder hygiene practices. Improving water safety, toilet cleanliness, and facility accessibility is crucial for student health.

**Keywords:** Georgia; health risks; rural schools; WASH (Water Quality, Sanitation, Hygiene).

## BACKGROUND

Almost all basic schools in Georgia face various challenges regarding WASH service provision. Some schools are served with a comprehensive WASH in-school package, while others have fair to poor levels of service.

However, others are entirely marginalized with no service at all, which is tragically associated with the development of dangerous infectious diseases in children (EUNEIGHBOURS, 2019). The consequences of unsafe water, sanitation, and hygiene (WASH) on children can be deadly. Over 700 children under the age of 5 die every day of diarrheal diseases due to the lack of appropriate WASH services (Unicef.org).<sup>1,2</sup>

A Joint Monitoring Report presented by the United Nations Children's Fund (UNICEF) and World Health Organization (WHO) in 2020 updates national, regional, and global estimates for WASH in schools up to the year 2019, with a special focus on the implications for ensuring the safety of students and school staff during the coronavirus disease 2019 (COVID-19) pandemic.<sup>3</sup> Unfortunately, the report has limited data regarding the current situation in Georgia; the latest update is dated 2013. It is a significant and tragic fact that highlights the problem of inadequate supervision and control of water, sanitation, and hygiene (WASH)- related issues in Georgian schools.

Therefore, the primary goal of this study is to compare WASH conditions across the country through the project launched in the country, identifying challenges and implementing innovative WASH guidelines and educational standards. The targeted one will be the effort conducted by the Georgian Medical Group (GMG) from 2015 to 2021 in rural schools and communities in two regions of Georgia: Adjara and Guria. Twenty-five rural schools have been targeted, and 330 teachers and around 4,000 students have been reached. The mentioned activities have been funded by the United States Agency for International Development (USAID) and the Coca-Cola Foundation through the Global Water Challenge, New World, and CARE International in the Caucasus.<sup>4</sup>

This research will, therefore, focus on the following questions:

1. Are there environmental conditions in place for the effective WASH (i.e., adequate and clean latrines, HWFs with soap, and post-defecation materials)?
2. Do you face WASH-related challenges?

## METHODS

Ten schools, 50 teachers, and 382 students were randomly selected from both groups: intervention and control. The number of interviews at each location was calculated based on the chosen locations to achieve representativeness. Eligible



candidates for interviewing included students from 7th to 12th grade and teachers. Data was collected through face-to-face, semi-structured interviews with school teachers and students. Gender did not matter. At the end of each interview, the demographic information was collected using a standardized multiple-choice questionnaire. For each interview, a signed informed consent was retrieved. For the safety of the respondents, all personal information was confidential. During the interviews, no personal information was asked. Case-control study employing cluster sampling approach.

Adjara is divided into five administrative units, each representing a stratum including 10 clusters. Ninety percent of survey-eligible individuals agreed to participate.

**RESULTS**

Interviews with students and teachers collected data on the availability and functionality of WASH facilities in schools in Adjara.

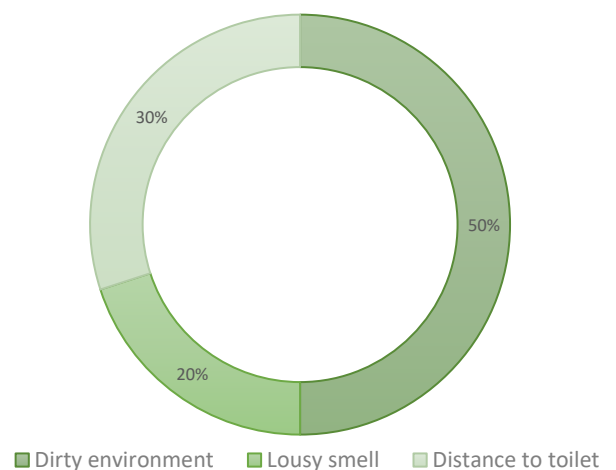
The results are grouped according to the main research questions: water availability, sanitation and hygiene conditions, and WASH-related challenges.

**Water availability and functionality**

- **Consistency of water supply:** 54% of students reported that water was always available at their school, indicating that nearly half have consistent access to water. However, this suggests that 46% of students may experience periods without access to water, which is concerning for maintaining hygiene and health standards;
- **Drinking water:** 97% of students reported that they do not use the water provided by the school for drinking purposes. This suggests a significant need for increased trust in drinking water quality at school, leading students to bring their water from home. 35.5% of students explicitly mentioned that they bring drinking water from home, highlighting the absence of safe drinking water on school premises;
- **Toilet use:** 76.5% of students reported not using the school toilet. When asked for reasons, the most common responses included:
  - **Dirty environment:** 50% of students cited unclean conditions as the primary reason for avoiding the toilets;
  - **Lousy smell:** 20% of students pointed to unpleasant odors as a significant deterrent to toilet use;
  - **Distance to toilet:** 30% of students mentioned that the toilets were too far from classrooms, making them less likely to use the facilities.

The findings reveal that a dirty environment was the most significant concern, accounting for 50% of the reasons identified. This suggests that cleanliness or hygiene issues play a critical role in the overall perception or experience of the environment. Bad smell emerged as the second most prevalent reason, contributing to 20% of the concerns. Unpleasant odors often signal sanitation issues or poor ventilation, further exacerbating discomfort and raising health-related concerns. Far distance accounted for 30% of the reasons. While this factor is slightly less impactful than the first two, it still represents a significant concern. A long distance can be a barrier to accessibility, making the environment less convenient or more challenging to reach for users (Fig.1).

**FIGURE 1.** Distribution of answers to the question of why students do not use the school toilet



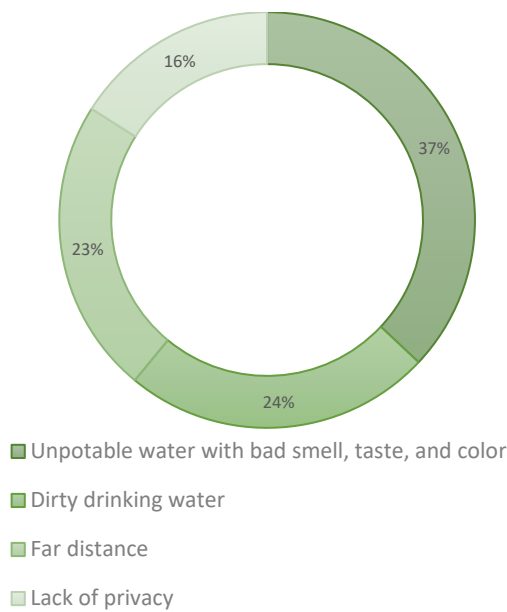
**WASH-related challenges**

Prevalence of WASH-Related Challenges: Eighty percent of respondents (students and teachers) reported facing WASH-related challenges. This highlights that most individuals in the sample are affected by issues related to water, sanitation, or hygiene facilities. The primary concerns identified by respondents were:

- **Water quality:** Poor drinking water quality was a common complaint, with many students avoiding using the school's water;
- **Sanitation infrastructure:** The cleanliness and functionality of toilets were significant concerns, with students citing the unhygienic conditions and bad smells as deterrents;
- **Access and accessibility:** The distance to toilets and the lack of adequate facilities for all students (e.g., lack of handwashing stations) were also frequently mentioned.

These findings suggest that multiple factors contribute to children's reluctance to use toilets at school, with water quality, both potable and non-potable, being the most significant barrier. Poor sanitation infrastructure, including water safety, cleanliness, and proximity to toilets, has a direct impact on children's hygiene behaviors. Addressing these concerns is crucial for enhancing hygiene practices and promoting children's overall well-being in school. To mitigate these issues, it is necessary to prioritize improving privacy in toilet facilities, ensuring clean and safe water for both drinking and sanitation and reducing the distance between classrooms and toilets. These improvements are likely to enhance children's willingness to use the facilities, promoting better hygiene practices and overall health (Fig. 2).

FIGURE 2. Reasons for WASH-related concerns



DISCUSSION

Research question 1: Are there environmental conditions for effective WASH (i.e., adequate and clean latrines, handwashing facilities with soap, and post-defecation materials)?

The data from this study show that WASH conditions in the Adjara schools are suboptimal. Specifically, only 54% of students reported consistent water availability, and 76.5% avoided school toilets due to cleanliness and odor issues. These findings suggest that essential environmental conditions for effective WASH must be improved in many schools, especially in rural areas.

These results are consistent with reports from the UNICEF/WHO Joint Monitoring Program (2020), which states

that millions of children globally lack access to essential water, sanitation, and hygiene (WASH) services in schools, with deplorable conditions in low- and middle-income countries, such as Georgia. However, while the reported figures in our study are high for non-compliance (76.5% of students avoiding toilets), UNICEF and WHO data (2019) report that the lack of hygiene and sanitation services in schools significantly affects children's health and education outcomes worldwide, reinforcing the urgency of addressing these issues.<sup>5</sup>

Moreover, the absence of adequate handwashing facilities, as reported by students, aligns with findings from other regional studies, where children's access to handwashing stations with soap remains inadequate, impacting their hygiene behavior and leading to higher incidences of waterborne diseases (UNICEF, 2020). The data from this study suggest an urgent need for immediate intervention to upgrade WASH infrastructure and enhance water accessibility and sanitation services.<sup>6,7</sup>

Research question 2: Do students face WASH-related challenges?

A striking 80% of respondents reported facing significant WASH-related challenges, with key concerns being poor water quality, inadequate sanitation infrastructure, and poor hygiene practices. These results align with research by EU NEIGHBOURS (2019), which highlighted that Georgia faces significant disparities in WASH service provision, particularly in rural schools, contributing to health risks such as diarrhea and poor hygiene outcomes.<sup>8</sup>

The challenges reported by the students in this study (e.g., dirty toilets, unpleasant odors, and long distances) align with findings from countries with similar socioeconomic profiles. For instance, Bates et al. (2018) identified poor sanitation and long distances to toilets as barriers to proper sanitation use in rural schools, resulting in increased absenteeism and poor health outcomes. These barriers directly affect children's willingness to use sanitation facilities, a pattern also evident in our data.<sup>9</sup>

However, it is also crucial to note that this study may overemphasize certain factors due to self-reporting biases. For example, students may report toilet cleanliness more negatively than it is due to discomfort or embarrassment, which could skew the perception of sanitation issues.

CONCLUSIONS

- **Urgent need for WASH improvements:** This study underscores the urgent need to enhance the WASH infrastructure in rural schools in Georgia. Improvements in

water availability, sanitation facilities, and hygiene practices are critical to ensuring a safe and healthy learning environment for students;

- **Policy and investment recommendations:** The findings emphasize the importance of sustained investment in school WASH programs, particularly in rural areas, and underscore the need for comprehensive school sanitation strategies. Policies should improve access to clean drinking water, upgrade sanitation facilities, and ensure that handwashing stations with soap are available and functional;
- **Gender-sensitive interventions:** Future interventions should be gender-sensitive, taking into account the specific needs of girls, particularly about menstrual hygiene management. Gender-segregated sanitation facilities and appropriate educational programs should be prioritized;
- **School health and education outcomes:** Improved WASH facilities will improve health outcomes and support better educational results by reducing absenteeism and promoting a more conducive learning environment.

In conclusion, this study offers valuable insights into the water, sanitation, and hygiene (WASH) challenges faced by rural schools in Georgia. It provides a roadmap for improving conditions, which can have a profound impact on the region's public health and educational outcomes.

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