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**Studying Hygiene and Sanitary Attitudes and Behaviors in the Rural  
Communities of the Region of Adjara of Georgia**

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**Abstract**

Despite the impressive developments in the sector of school education of Georgia, many schools (even rehabilitated ones) are still in a desperate need for fresh running water and adequate toilet facilities. There is a strong correlation between the incidence of diarrheal diseases of presumed infectious origin and compromised WASH conditions. The diarrheal disease incidence is highest in the Autonomous Republic of Adjara of Georgia (3.24 times the national average). A qualitative research aimed at revealing the public knowledge and attitudes regarding handwashing standards and patterns has been conducted in different rural municipalities of Adjara by administering 12 focus group discussions with 72 adults and 72 children of school age. The content and ethnographic analysis was conducted through a “three-element coding framework”. Our findings underscore the lack/shortage of resources/supplies in school WASH units (soap and water) as well as the presence of inadequate sanitation facilities. In addition, hygiene practices have been heavily influenced by the knowledge and attitudes towards

handwashing. Handwashing practices at home differ from the ones at school (most children wash their hands once a day or do not wash at all, while they practice it more frequently at home). This confirms the need for integrating handwashing and hygiene issues in school curricula. The school-based hygiene education is vital for effective reduction of incidence rates of diarrheal and other infectious diseases among children.

**Keywords:** diarrheal diseases, handwashing, hygiene education, WASH

**1. Introduction**

Water, Sanitation and Hygiene (WASH) situation still remains alarming in rural Georgia. The National Government’s heavy efforts to improve public infrastructure over the last 18 years have resulted in a dramatic positive shift in accessibility and affordability of public goods. However, despite these impressive developments, many schools and primary healthcare institutions (even rehabilitated ones) are still in a desperate need for fresh running water and adequate toilet facilities. There is a strong correlation between the incidence of diarrheal diseases of presumed infectious origin and compromised WASH conditions (Natalie Bennion et al., 2021). Globally, based on WHO data, there are nearly 1.7 billion cases of diarrheal diseases every year and they kill around 760 000 children under five. A significant portion of diarrheal diseases could be prevented by applying safe drinking water and proper sanitation and hygiene (*Diarrhoeal Disease*, 2021). What immediately strikes is that the diarrheal disease incidence is highest in the Autonomous Republic of Adjara (Adjara). Moreover, the incidence per 100,000 children (5,540.6) is 3.24 times higher than the national average (1,708.9) (NCDC, 2011).

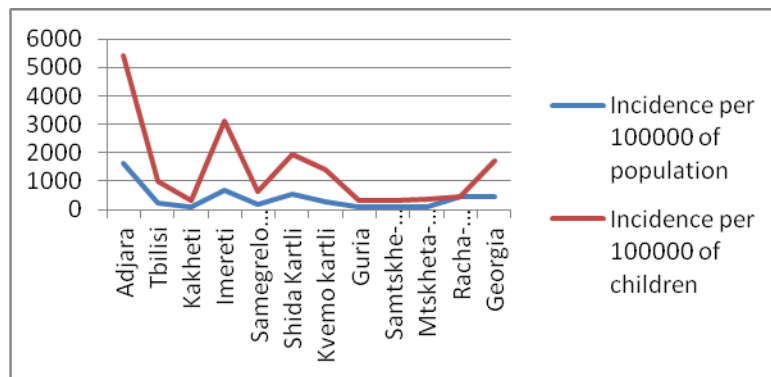


Figure 1. Incidence of diarrheal diseases of presumed infectious origin in Georgia, 2011 (NCDC, 2011).

The present research was performed under the framework of the USAID (United States Agency for International Development)-funded WASH project of Georgia, implemented by Georgian Medical Group (GMG) within the period of January, 2015 - April, 2021 (Cooperative Agreement AID-114-A-15-00002). Since the project planned to employ the three distinct implementation modalities, such as WASH infrastructure rehabilitation, health education and community mobilization, we needed this research to serve as a baseline for informing the mentioned

modalities in the targeted communities (Georgian Medical Group, 2015). The above mentioned approaches have been recommended as optimal to WASH in schools initiatives elsewhere in the World (Anthonj et al., 2021) (Clarke et al., 2016). The evidence shows that applying each component separately is vastly counterproductive i.e. good toiletry and safe drinking water supply without the respective WASH habits seems to be nonoperational or vice a versa. On the other hand, if both elements are in place, the long-term sustainability of achieved satisfactory WASH results is still questionable unless the local communities take a strong ownership (“HANDS, USAID, Sindh Govt to Re-Establish Jacobabad’s Infrastructure,” 2015). We would strongly suggest communities to be immensely involved in any such project’s implementation process, as they (communities) know it much better what are the local needs and resources. It is also important to know what are the cultural, religious and historical patterns in relation to conventional hygiene and sanitation and how these preferences might influence the WASH projects’ course and nature. Since the targeted geographic area is of multi-ethnic/multi-religious demographic composition, our strong perception, based on published data from other similar settings (Nawab et al., 2006), was to deeply explore these issues, so that the planned project modalities are well tailored to adequately meet the community expectations as well as comply with deeply rooted local religious and cultural standards and historical experience.

Armed with the latter considerations, the project team proposed a qualitative study aimed at researching hygiene and sanitary attitudes and behaviors in the rural communities of the region of Adjara of Georgia.

## **2. Material and Methods**

The qualitative study has been conducted in a fashion of focus group discussions. The primary aim of the focus group discussions was to explore the following key issues:

1. The emotional, cultural, religious and technical factors/barriers around hand-washing and sanitation practices;
2. Perceptions on proper/safe handwashing practices;
3. Perceptions on potential barriers to hand hygiene;
4. The value of different resources of information in changing behavior;
5. The other factors that potentially may inform decisions about hand hygiene;
6. The knowledge of the general importance and technical application of hand hygiene/washing.

The general public of rural Adjara has been considered as a reference population. The project targeted 25 rural schools and 10 primary healthcare centers in 5 different municipalities of the region. We selected the following locations for conducting the focus group discussions: villages of Khutsubani (Kobuleti municipality), Akhalsopeli (Khelvachauri municipality), Agara (Khelvachauri municipality), Kvemo Vashlovani (Khulo municipality), Pirveli Maisi (Keda municipality) and Chanchkhalo (Shuakhevi municipality).

In total, 12 focus group discussions were conducted, 6 with adults of all ages, and 6 with children (15-17 years old). Based on convenience sampling, 12 people have been recruited in each focus group. Overall, 72 adult women and men of various age and socio-economic status and 72

school children participated. The respective ethics clearances have been obtained prior to the study.

The focus group discussions were managed by previously trained facilitators and assistants. The data collection has been performed through audio recording, note taking and observation. The duration of discussions ranged between 1 to 2 hours. The content and ethnographic analysis was conducted through a “three-element coding framework” (Onwuegbuzie et al., 2009). The final report was prepared for each location and submitted to the central office, where the project team consolidated the individual reports into the joint report.

Validity of the study was reinforced by the following measures: a. all focus group discussions audio recorded; b. Employing the pre-approved guidelines to all stages of the study; c. Systematic rechecks of recorded audio files for revealing errors and discrepancies. Reliability was addressed through providing insights into the process of data collection/analysis. We assume that a relatively high number (N=144) of the focus group discussion participants created good grounds for generalizing the study findings to the population in question (Hennink et al., 2019).

The final code system had the following categories for adults: 1. Barriers to good handwashing practices; 2. Reasons for good handwashing practices; 3. Hand hygiene habits; 4. Encouragement; 5. Beliefs; 6. Knowledge on handwashing; 7. Religious or specific rules that relate to handwashing; 8. Activities that would work better; 9. Differences in child, male or female handwashing practices.

The final code system had the following categories for children: 1. Barriers to good handwashing practices; 2. Reasons for good handwashing practices; 3. Hand hygiene habits; 4. Encouragement; 5. Beliefs and traditions; 6. Knowledge on handwashing; 7. Reasons for not washing hands as much as you should at school; 8. Desired changes in school’s bathrooms; 9. Frequency of handwashing in schools; 10. Handwashing practices at school; 11. Handwashing practices at home; 12. Differences in child, male or female handwashing practices.

### **3. Results**

#### *3.1 Barriers to good handwashing practice*

Overall, in all 12 groups (adult and children) agreement is that conditions in public institutions for good/correct handwashing is inadequate, specifically: lack of infrastructure, no clean or warm water at workplaces, etc. The following statements were found in every focus group discussion:

- The village uses water, purity of which is not checked. There is a very limited supply during the summer time.
- Lack of clean water supply; the water is supplied by schedule.
- Soap is expensive and some people cannot afford it.
- Absence of towels and disposable products in toilets.
- Public budget is not enough for improving the water and sanitation infrastructure.

In all (12) groups, participants mentioned that some families do not have and cannot afford to improve the infrastructure (toilet, water tap, etc.) for keeping good level of hygiene in their toilets. This issue came most sensitive for the villages of Kvemo Vashlovani, Pirveli Maisi, and Chanchkhalo. In the village of Kvemo Vashlovani, the focus group participants mentioned that the village school toilets do not have water supply (drinking or for sanitation purposes) which makes impossible for children and school staff practicing any handwashing.

### *3.2 Reasons for good handwashing practices*

Sufficient awareness on protective function of handwashing was identified in most discussion groups. Participants acknowledged the need for “protecting themselves from diseases” and “protecting the people around them”.

The adult focus group discussions in the villages of Kvemo Vashlovani, Pirveli Maisi, and Chanchkhalo also attributed “cleaning from the dust” function to handwashing. Awareness on the importance of handwashing for protection from infections was limited, while children in the same villages were well aware of it.

### *3.3 Hand hygienic habits*

The focus group discussions in both groups identified inadequate hand hygiene habits. Handwashing is mostly done before having meals. According to the research participants, the handwashing habits are formed in families, and schools and the public have a limited role in forming these behaviors.

The CDC (Centers for Disease Control and Prevention, USA) and WHO (World Health Organization) guidelines recommend using soap and water and scrubbing with proper technique for at least 20-seconds, followed by drying hands thoroughly, but do not specify a water temperature (*When and How to Wash Your Hands | Handwashing | CDC, 2020*) (*Hand\_Hygiene\_Why\_How\_and\_When\_Brochure.Pdf*, n.d.). Many expert sources recommend that water in the lukewarm to warm temperature regions should be used (Carrico et al., 2013). Our study showed that the habit of washing hands with cold water, more likely without a soap is quite prevalent and this is considered as a norm by the participants.

### *3.4 Encouragement*

The discussions revealed the lack of handwashing encouragement from families or schools. Moreover, almost all participants did not see the need to encourage the other people. By perception of participants, encouragement works only with young children (5-6 years old). In Khucubani and Akhalsopeli, children stated that watching friends handwashing encourages them to wash their hands.

### *3.5 Beliefs and traditions*

There was a wide variation of beliefs across the region. Handwashing beliefs correlate and predict handwashing practice (Al-khawaldeh et al., 2015). Almost all discussion participants believed that the length of handwashing does not influence a quality of washing. Participants of adult groups from Khucubani and Agara villages believe that good handwashing can be practiced

only at home and has a protection effect from getting sick. Children in the same villages believed that washing hands is important for preventing diseases. Participants of adult groups in Khutsubani, Akhalsopeli and Kvemo Vashlovani believed that washing hands with cold water is as effective as with warm water. In addition, participants of adult groups from Khutsubani and Akhalsopeli believe that expensive soap is more effective for protection than the cheap one. Participants (adults) from Akhalsopeli believed that there is no need to use soap every time they wash their hands. Children of the same village did not believe that washing hands is important for protection from getting sick. Participants of the adult group from Kvemo Vashlovani believed that using the soap all the time can irritate the skin. Almost all participants could not recall traditions associated with handwashing. Only the adult group members in the villages of Chanchkhalo, Pirveli Maisi and Kvemo Vashlovani mentioned that traditionally in their settings, toilets are built without water taps inside.

### *3.6 Knowledge of handwashing*

The study found the lack of education or training on hand hygiene issues. This was revealed in analyzing the content of several other codes. Almost all participants stated about limited education on handwashing provided in schools and sporadic involvement of medical/health professionals. The next main barrier to good handwashing practices was the lack of knowledge on the protection function of handwashing – was mentioned at all 12 sites. Most of the group members have not heard that quality of handwashing depends on the time spent, the temperature of water and that use of soap.

All participants watched the two brief videos. The first was about a real-life situation, when the hand hygiene opportunities are missed. The second one showed the same activity, with the adequate hand hygiene. The aim was to sensitize participants that people often believe that they practice good hand hygiene, but in reality follow the wrong patterns. The reaction to the second video was the following: people mentioned that it is impossible to wash hands in this manner, as it needs lots of time, warm water and rubbing with the soap could be problematic. Almost all participants noted that they never washed their hands using such a technique. Most participants expressed doubts by asking: “Is it really needed to wash hands this way?” or “Is it always necessary to wash hands so zealously?”, some participants were interested “If this technique is safe or tested, or can it cause the skin irritation?” The children took the videos in rather humorous way.

Based on our observations, it is more likely that participants have poor hand hygiene compliance due to the lack of knowledge on handwashing techniques. In addition, children from all focus groups mentioned: “I have seen my parents use the bathroom and not wash their hands after” or “I have seen doctors/nurses use the toilet and not wash their hands after”.

### *3.7 Religious or specific rules that relate to handwashing*

Within the study, religious or other specific rules that relate to the topic of handwashing were predominantly explored in adult groups. We did not find any religious influences over hand hygiene practices as all participants mentioned that they cannot recall any religious rules or beliefs that affected their handwashing patterns. As it was mentioned above, in regards to other

specific rules, all participants could recall only the rule “to wash hands before eating” that is set in families and more likely is performed at home. About half of adult participants said they have a rule to wash their hands before touching a child. It is worth to note that the scarcity of rules related to handwashing was observed across all participants.

### *3.8 Activities that would work better*

The focus group discussions revealed that improving water and sanitation infrastructure at public places and homes, availability of promotional activities on hand hygiene issues, including information booklets and other educational materials and increasing the role of medical/health professionals in delivering hand hygiene education are essential. The study showed that research participants were receptive to learning and likely to adopt healthy behaviors, if they had adequate information and knowledge.

The following issues have been raised by the research participants as the priorities: Good infrastructure at homes and work places; Booklets, radio and TV programs on infectious diseases, sources, ways of transmission, risks, side effects and protection mechanisms; "Medical/health professionals should keep good hygiene and sanitation level in their offices and toilets and perform proper handwashing and then teach others"; Compulsory WASH education in schools; Reminding posters on handwashing in schools; Booklets for school children that display information on negative effects of "biting nails".

### *3.9 Differences in children and adults, male and female handwashing practices*

The study found some differences in children and adult handwashing practices. These differences are more likely to be associated with different levels of knowledge of various age groups as well as different ability (limitations due to illness or disability) of senior and disabled people to practice handwashing at home and in public settings. This opinion was concluded based on the following statements of participants: “Children and seniors wash their hands rarely than the people of middle age”; “Senior people, due to their disabilities and illnesses have limitations to practice good handwashing; “Small children lack the knowledge of and fear to infectious diseases; “Children do not perform correct handwashing. They should learn it not only in families.”

Only participants of the adult group from Akhalsopeli mentioned no differences in handwashing patterns. The different opinion was identified among the adult group members of Agara, who perceived that “children wash their hands more often but quality of washing is not sufficient due to the lack of knowledge.” No significant differences were found in handwashing patterns between men and women.

### *3.10 Additional topics covered within the focus group discussions of children*

“There are several factors that may influence handwashing behaviors among pupils and staff in primary schools. Hand hygiene is important in primary schools to prevent the spread of infectious illnesses, and is a key infection control measure recommended. Improving hand hygiene to lower the transmission of infections could reduce absenteeism of teachers and pupils in schools, and could also potentially prevent secondary infections in the wider community,

reduce health service costs and lower the burden on families, some of whom may need to take time off work to care for children” (Chittleborough et al., 2012).

Based on the above, we added the following topics to the focus group discussion agenda in children groups:

a. Reasons for not washing hands at school as much as you should

The study found that the leading factor for not washing hands at school was insufficient infrastructure. Almost all children mentioned that they don't like going to the bathroom/toilet at school as their bathrooms/toilets don't have the necessary supplies and the sanitary conditions are disgusting. In addition, the children more likely need reminders on handwashing. This opinion is based on the following comment of almost every research participant in children groups: “No one reminds me to wash my hands.”

b. Desired changes about school bathrooms

Almost every focus group participant wished to have better, clean toilets, with better smell and provision of soap and other needed products. In addition, they highlighted the need for and importance of handwashing reminder posters.

c. Handwashing practices in schools

Analysis of the frequency of handwashing in schools highlighted the inadequate practices - most of the children wash their hands once a day or do not wash at all. In addition, children wash their hands only after using the toilet.

d. Handwashing practices at home

Handwashing practices at home differ from the ones at school. Almost all children indicated that at home, they wash their hands: 1. After touching the garbage; 2. After using the toilet; 3. Before having meals; 4. After playing in the yard. But children never wash their hands after blowing their nose, coughing or sneezing. The exceptions were found in Kvemo Vashlovani, Pirveli Maisi, and Chanchkhalo, where children wash their hands only after using the toilet. Analysis of handwashing behaviors among school students found that besides the need of better infrastructure in schools, there is an obvious need for providing more information and education on hand hygiene as well as extra promotional and encouraging activities.

#### **4. Discussion**

Gaining an understanding of what people think and know about handwashing and identifying the barriers to promoting proper practice are necessary for achieving a paradigm shift in the WASH domain. The qualitative data from this study has highlighted that more information and education are immediately necessary, but still insufficient to ensure that good handwashing practices are initiated and maintained. It should be combined with the safe and properly designed WASH infrastructure.

Our findings underscore the lack/shortage of resources/supplies in school WASH units, namely soap and water, as well as the presence of inadequate sanitation facilities. In addition, hygiene



practices are heavily influenced by the knowledge and attitudes towards handwashing. It was identified that the majority of participants had a limited knowledge that the quality of handwashing depends on the time spent, temperature of water and use of soap.

Handwashing practices at home differ from the ones at school (most children wash their hands at school once a day or do not wash at all, while they practice it more frequently at home). This confirms the need for integrating handwashing and hygiene issues in school curricula. Children are more receptive to learning and are very likely to adopt healthy behaviors in younger age. They can also serve as the agents of change by spreading what they have learned in the school to their family and community members. Therefore, successful implementation of handwashing and hygiene programs is likely to contribute to the reduction in morbidity and mortality associated with communicable diseases.

Based on our findings, community events, radio and TV programs regarding the proper handwashing techniques, healthy hygienic practices and general principles of infection prevention need to be implemented and educational/promotional printed materials (posters, leaflets, etc.) distributed locally. Moreover, the role of medical/health professionals needs to be augmented in teaching WASH topics.

## **5. Conclusion**

The school-based hygiene education is vital for effective reduction of incidence rates of diarrheal and other infectious diseases among school children via changing the hygienic skills and habits.

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