



Assessment of Water, Sanitation, and Hygiene Practices among School Going Children

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ABSTRACT: *In rural areas, many important hygiene practices are unavailable causing gastrointestinal and respiratory infections in school-going children. The objective of this study was to assess water, sanitation, and hygiene practices among school-going children in rural areas of Gujrat, Pakistan. A cross-sectional study was conducted among school-going children in different schools in Gujrat, Pakistan. The data was collected in 4 months from December, 2021 to March, 2022 with a total number of 1000 participants. Data collection was carried out using a close-ended structured questionnaire among different school-going children. It contained a total of 14 questions about hygiene practices in children. Data was entered and analyzed on SPSS version 26 and frequencies and percentages were mentioned as their responses in the form of tables and pie charts. The results of the current study comprised responses of 1000 boys and girls from different schools. The responses showed that 601(60.1%) children did not wash their hands before and after meals in school while, 568(56.8%) children did not flush before and after the toilet, 578(57.8%) did not wash their genital organs, 995(99.5%) drank tap water in schools, and 646(64.6%) drank 5-10 glasses of water per day. It was concluded by the study that most of school-going children did not follow hygienic practices and there is need to highlight the issues.*

Keyword: Sanitation, Water, Hygiene, School-Going Children, Pakistan, Gujrat, Infections

INTRODUCTION

Any activity that targets maintaining health as well as preventing the spread of any infection is called Hygiene. Cleanliness is about skipping or removing wastes stuff and dirt from the surface with the help of some equipment like soap or detergents while hygiene is much more than cleanliness. Hygiene is the principle of cleaning. Different common behaviors of hygiene are water, toilet, oral, personal, and food hygiene practices (Vally et al., 2019; Ullah et al., 2020). Poor hygiene practices in children can lead to several serious and fatal conditions including communicable diseases such as diarrhea, chickenpox, Gingivitis, common cold, etc. Inadequate knowledge of hygiene practices in mothers and inappropriate habits can affect children's general health in a very negative way (Shrestha et al., 2018; Pradhan et al., 2020). Globally, 89% of nations have national WASH policies of which only 15% of countries reported having been involved in preparing water and sanitation policies. In Pakistan, schools have their WASH policies with previous government water and sanitation strategies to improve hygiene practices (Cooper, 2018; Ahmed et al.,

2022). One of the major sources of spreading pathogens is the contaminated hands of the children in schools. This can lead to respiratory and GIT infections in children. Hand washing training is very low in schools. The other source of pathogen spreading can be the fecal route in children. Lack of practice, water, and awareness in children may avoid personal hygiene causing infections (Vishwanath et al., 2019; Ahmed et al., 2020). Maternal education, age, gender, and area of living are some of the factors that affect children's hand washing habits (Buda et al., 2018). Simple hand washing in school-going children can save them from many harmful pathogens (Naluonde et al., 2019; Mehmood et al., 2021). A proper section should be done for children in schools and homes for training them in some of the basic hygiene practices (Dajaan et al., 2018; Gillani 2021; Afzal et al., 2022)

Oral hygiene is briefly related to a child's general health. It includes teeth brush, eating habits, use of mouthwashes dental floss, siwak, etc. In children, a toothbrush is a very important consideration involved in oral hygiene and it depends on the frequency of meals per day (Quadri et al., 2018). Bacteria can be developed in children

who are not taking care of oral hygiene. These bacteria can cause dental caries, a condition of tooth decay in which a cavity is formed inside the tooth. The socioeconomic, environmental, and biological factors affect oral hygiene practices in children. Dental caries is a leading cause of unhygienic oral practices (Elamin et al., 2018). Another condition called Gingivitis may occur in children's mouths with improper cleaning which can affect children's general health drastically (AlGhamdi et al., 2020). Estimated one-third of infant and young child mortality in underdeveloped nations are due to underlying causes of malnutrition. Unhygienic practices noted in children before the age of five can develop under nutritional conditions which can be overcome by proper hand washing and improving hygiene practices (Mshida et al., 2018; Kajjura et al., 2019). Improper hand washing, and unhygienic oral washing can also cause diarrhea in children. Every year, millions of children died from diarrhea while chronic diarrhea is affecting 5% of the population of every age, and those who survive often have shortened lifespans. The most cost-effective approaches for fighting this life-threatening infection are to prevent the common channels of transmission for diarrhea-causing

microorganisms, such as better water, sanitation, and hygiene (WASH) (Schiller et al., 2017; Yaya et al., 2018; Vayeda et al., 2022). Unhygienic toilets in schools can lead to communicable diseases in children. Lack of water in toilets, lack of practice of cleaning personal areas of the body, and poor flush facilities can affect a child's general health (van Cooten et al., 2019; Ahmadi et al., 2020). Unhygienic water intake can also cause GIT diseases in children. These conditions may affect a child's general health and education. Simple tap water is the major source of transmission of pathogens in children (Ahmed et al., 2020). Providing improved nutrition, promoting proper hygienic behavior, such as handwashing, keeping the toilet facilities clean, and guaranteeing a reliable supply of safe water are all dependent on public health improvements and can make school-going children healthy (Nounkeu et al., 2019, Shrestha et al., 2020; Afshan et al., 2022)

Unhygienic practices in school-going children are affecting their health badly worldwide. In rural areas, many important hygiene practices are unavailable causing GIT and respiratory infections. This study focused on handwashing, sanitation, and oral

hygiene practices in children which can be adopted to skip many infectious diseases.

MATERIALS AND METHODS

A cross-sectional study was conducted among school-going children in different schools in Gujrat, Pakistan. The data was collected in 4 months from December, 2021 to March, 2022 with a total number of 1000 participants. Data collection was carried out using a close-ended structured questionnaire among different school-going children. It contained a total of 14 questions about hygiene practices in children.

1. Selection of participants in the study

Data collection was carried out using a close-ended structured questionnaire among different school-going children. Students with all age group studying in school were taken in the study. The teachers help their children to conduct data from them.

2. Technical information of the study

The questionnaire contained a total of 14 questions about hygiene practices in children. The questionnaire was conducted online using Google created form.

3. Statistical Analysis

In this study, Data was entered and analyzed using SPSS (Statistical Package for the Social Sciences) version 26 and frequencies and percentages were mentioned as their responses in the form of tables and pie charts.

RESULTS

Fig. 1 showed the age of children was categorized into three groups ranging from 4 to 16 years. Most of the children included in this study ranged from 9-12 years 542(54.2%), followed by 4-8 years 324 (32.4%), and 12-16 years 134 (13.4%).

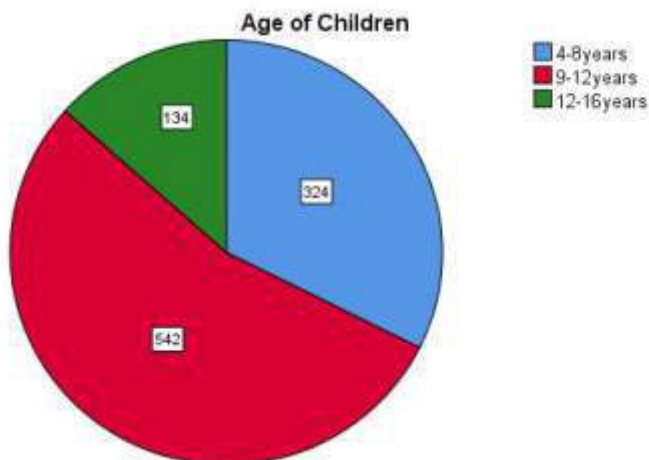


Fig. 1. A chart to show age of children

It was noticed a higher number of females went to school for study purpose (Fig. 2).

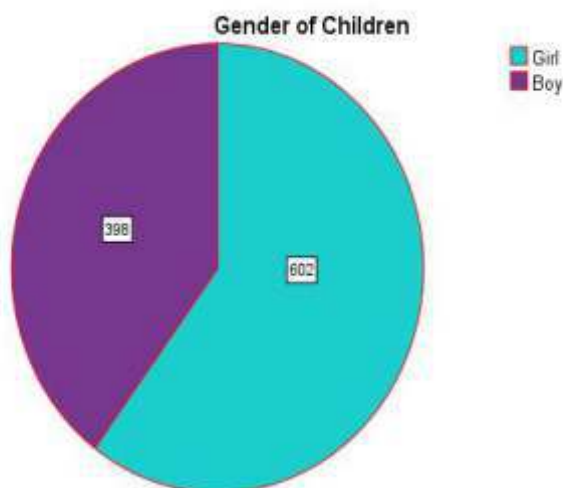


Fig. 2. A chart to show percentages of different gender of children

An analysis of survey questions with percentages were determined for was performed, and frequency along all asked questions (Table 1).

Table 1: A summary of responses of different participants

Questionnaire	Response	Frequency	Percentage
Do you wash your hands before and after meals in school?	Yes	399	39.9
	No	601	60.1
Do you wash your hands with Soap in school?	Yes	314	31.4
	No	686	68.6
Do you brush your teeth twice a	Yes	255	25.5

day?	No	745	74.5
Do you wear mask in public gatherings and traveling?	Yes	863	86.3
	No	137	13.7
Do you wash your feet daily?	Yes	304	30.4
	No	696	69.6
Do you flush before and after using the toilet in school?	Yes	285	28.5
	No	715	71.5
Do you wash your genital organs after the toilet in school?	Yes	422	42.2
	No	578	57.8
Do you wear wash a uniform daily?	Yes	286	28.6
	No	714	71.4
Do you wear wash a uniform daily?	Yes	286	28.7
	No	714	71.4
Do you cover your mouth with a tissue while sneezing or coughing?	Yes	760	76.0
	No	65	65.0
	Sometimes	175	17.5
When do you cut your finger nails?	Once a week	941	94.1
	Twice a month	59	59.0
Do you take bath daily?	Yes	548	54.8
	No	451	45.1
What is the source of your drinking water in school?	Tap water	995	99.5
How much water do you drink per day?	1-2glasses	180	18.0
	5-10 glasses	646	64.6
	3-6glasses	173	17.3
	Total	1000	100.0

DISCUSSION

A survey was conducted over 4 months from December 1st to March 30th and school-going children ranged from 4 to 16 years were considered. It was noticed most of school-going children were not followed hygienic practices. They did not wash their hands, flush toilets, and wear washed uniforms. They drank tap water that causes GIT infections and not take baths daily nor cover their mouth with a tissue while

sneezing. They only wear a mask at gatherings and cut their nails per week.

The current study showed that most school-going children drank tap water which found harmful to their health. Tap water can cause many problems to children including diarrhea, constipation, etc. A study done by Nounkeu et al. (2019) also concluded that water insecurity is a major role in disturbing the health of children. It is also reported the areas in which water is

not neat enough have more prevalence to be diagnosed with GIT problems including diarrhea (Nounkeu et al., 2019). The current study concluded that school-going children have low activity in washing their hands, they did not wash their hands before and after taking meals, not used soap, and not washed their hands after toilet. A similar study done by Ahmed et al. (2021) concluded that in Pakistan, WASH facilities at schools are very low. Basic sanitation and hygiene services were found to have very limited availability and functionality. The lack of WASH facilities in primary schools was found to have a substantial influence on schoolchildren's performance. The current study indicated that major facilities should be required in schools for better children's health. Children's susceptibility is considerably reduced by interventions such as improved water quality and source, toilet type, handwashing, and water filtration. Pakistan's public policy should be more aggressive in implementing intervention programs like WASH to promote public health in general and child health in particular. Clean water and sanitation infrastructure planning should be decentralized, with provinces and local governments taking the lead by encouraging local communities and

nongovernmental groups to promote public health. Oral hygiene is also important for school-going children. Oral hygiene knowledge, views, and habits among parents should all be improved. Parents' beliefs and actions about their own and their children's oral health can be improved by developing and implementing oral health awareness programs.

In 2022, a study was conducted in Gujrat, Pakistan by Afzal which a sample of 13 union councils was carried out. The study concluded that one of the most important factors in the spread of infectious and respiratory illnesses were children's poor WASH understanding, attitudes, and practices. Every time, a child's early years were more vulnerable and at risk. A vicious cycle of illnesses linked to poor WASH practices and have a strong impact on morbidity as well as result in a shocking loss of potential and many priceless lives. The current study also concluded that unhygienic practices in children's can lead to many infections that can risk their life.

CONCLUSION

It was concluded that one of the most important factors in the spread of infectious and respiratory illnesses was children's poor WASH understanding,

attitudes, and practices. Most of the school-going children were not follow hygiene practices.

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