

RESEARCH ARTICLE

Study on hygiene-sanitation among high-school students belonging to field practice area of shimoga institute of medical science, karnataka

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ABSTRACT

Background: According to UNICEF, even in 2020, 2.3 billion people lacked basic hygiene. According to the World Health Organization, in 2017, there were no basic sanitation facilities for 2 billion people across the globe. With this background, a study on hygiene and sanitation among high school students of field practice areas of Shimoga Institute of Medical Science was undertaken. **Objectives:** The objectives of the study are as follows: (1) To ascertain the hygiene practices among high school students. (2) To determine sanitation in their schools. **Methodology:** Study was conducted among the high school students belonging to field practice areas of Shimoga Institute of Medical Science, Shivamogga. Data were collected by visiting all the schools using semi-structured and pre-tested questionnaire. **Important Findings:** Personal hygiene like washing hands before food was 95.7% in rural and 100% in urban students. Washing hands with soap after using the toilet was 94.9% in rural and 94% in urban. Menstrual hygiene like use of sanitary pad was 70% in rural and 92.6% in urban students. Sanitation facilities like separate toilets for boys and girls was 100% in both rural and urban schools. **Conclusion:** Hygiene and sanitation were good in most of schools and this has to be maintained in future as well.

Keywords: Personal hygiene, Menstrual hygiene, Sanitation, High school students.

HSINTRODUCTION

The term “environmental sanitation” has been defined by the World Health Organization (WHO) as “*the control of all those factors in man’s physical environment which exercise or may exercise a deleterious effect on his physical development, health and survival*” [1]. Hygiene is defined as “*the science of health and embraces all factors which contribute to healthful living*” [1].

Knowledge of sanitation and hygiene dates back to ancient Indian medicine. The laws of Manu were a norm of personal hygiene. Archaeological unearthing’s at Mohenjo-daro and Harappa within the Indus valley, revealed cities of over 2,000 years, a long time ancient has uncovered progressed information of sanitation [1].

In 2015, as it were 89% of the world populace utilized a fundamental drinking water benefit, whereas as it were 68% utilized essential sanitation administrations [2].

According to the UNICEF, in India, the number one cause for child death is from waterborne diseases such as diarrhea and as well as from respiratory disease which is due to poor sanitation and hygiene [3].

The worldwide exertion in accomplishing sanitation and water facilities to all by 2030 has extended to include institutional settings, such as schools, health care facilities, and workplaces. This has made a difference how worldwide instruction with regard to water, sanitation, and hygiene (WASH) in schools make strides to get the instruction and learning results, particularly in young ladies [4].

Sanitation in school’s: In 2016, on global survey, it was found that 66% of schools had single-sex sanitation facilities and therefore classified as having basic sanitation service [4].

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Hygiene in school's: In 2016, it was evaluated globally that within the entire world as it were 53% of schools had hand washing facilities with cleanser and were classified as having a basic hygiene service [4].

To realize universal sanitation scope and to center on sanitation, the endeavors were quickened by the Prime Minister of India and propelled the Swachh Bharat Mission on 2nd October, 2014, with two submissions the Swachh Bharat Mission (Gramin) and the Swachh Bharat Mission (Urban) [5].

Training in personal hygiene should begin at a very early age and must be carried throughout school age. Hence, there is a need to study the sanitation and hygiene practices among the high school students who are the future generation of the country.

Objectives of the study

1. To ascertain the hygiene practices among high school girls and boys in both rural and urban areas.
2. To determine the levels of sanitation in their schools.

METHODOLOGY

Study area

The study was carried out in the Government and Government-aided schools of rural and urban field practice areas of Shimoga Institute of Medical Science (SIMS), Shivamogga.

Study design

The study was an observational, analytical, and cross-sectional study.

Study period

The study was conducted from January 2020 to March 2021.

Study population

The study population was composed of all the 10th standard boys and girls in schools coming under rural and urban field practice areas of Shimoga Institute of Medical Science, Shivamogga.

Inclusion criteria

1. All the 10th standard students were willing to participate in the study.

Exclusion criteria

1. Students who were absent during the visit.
2. Students who did not wish to give consent.

Data collection

SIMS, Shivamogga has one urban field practice area at Kote and three rural field practice areas at Mattur, Holaluru, and Ayanur. A list of all government and government-aided high schools attached to above field practice areas was obtained by Health Assistants and ASHA of respective Primary Health Center (PHC's) and Community Health Center (CHC's). There were 2 schools in Kote, 5 in Mattur, 3 in Holaluru and 3 in Ayanur. All the schools were included in the study.

At each school, students were told about the study, and their oral assent was taken. Then a semi-structured questionnaire was given to all students and was explained to them in their local language.

Variables of the study included sociodemographic details, details about personal hygiene, menstrual hygiene, and sanitation.

Ethical approval

Ethical approval for the study was obtained (SIMS/IEC/467/2019-20) from the Institutional Ethics Committee of Shivamogga Institute of Medical Sciences.

Consent

Informed consent was taken from headmasters/ mistress of each school. Assent was also taken from study participants. Study participants were assured that information would be collected with utmost respect to their privacy and maintenance of confidentiality.

Statistical analysis

Data entry was done in Microsoft Excel spreadsheet and analysis was done using Statistical Package for the Social Sciences software. Data analysis was done through descriptive statistics. Results were expressed in descriptive statistics which included frequency and percentage to explain the demographic variables, variables of hygiene, menstrual hygiene, and sanitation among high school students.

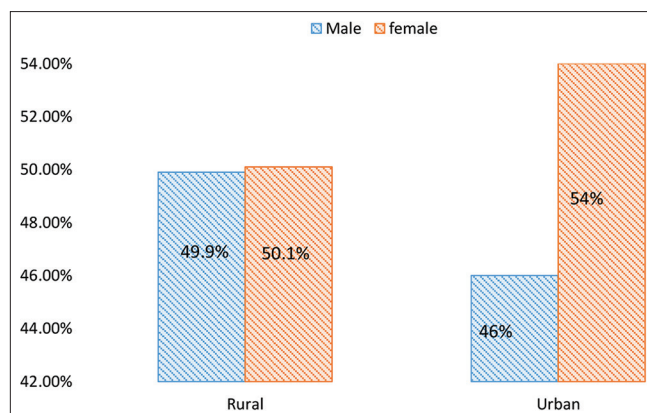
RESULTS

This study was conducted in rural and urban field practice areas of Shimoga Institute of Medical Sciences, among high school students (10th standard). A total of 373 students from rural areas and 50 students from urban areas were included in the study.

Sociodemographic profile of high school students

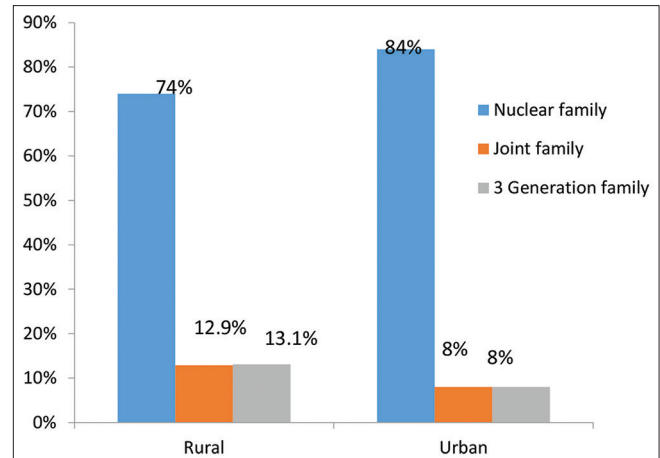
Since only 10th-standard students were considered in the study, the majority of them were 16 years both in the rural area, that is, 209 (56%), and in urban area 26 (52%).

Distribution of study participants according to gender ($n = 423$)



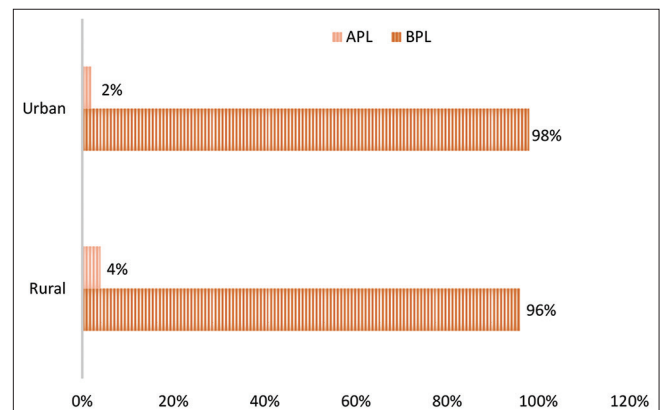
Majority of the participants were girls in both rural 187(50.1%) and urban areas 27(54%).

Distribution of study participants according to type of family ($n = 423$)



Both in rural 276 (74%) and urban area 42 (84%), the majority participants belonged to nuclear family.

Distribution of study participants according to socio-economic status ($n = 423$)



Majority were BPL card holders both in urban 49 (98%) and rural areas 358 (96%).

DISCUSSION

Sociodemographic profile of study participants

In the present study, majority of participants i.e. 56% in rural area and 52% in urban area belonged

to age group of 16 years. In contrast, the study done by Sihra *et al.* in Jaipur and Lal and Kavitha in Warangal, Telangana showed that 39% and 44% belonged to age group of 16 years respectively [6,7]. This difference might be because in this study only 10th standard students were considered but in others study other class students were also included.

About half of the study participants in the present study, that is, 50.1% in rural and 54% in urban area were girls. Similar results were found in the study conducted by Dajaan *et al.* in Ghana with 50.67% of girls [8]. Furthermore, in the study conducted by Shrestha and Angolkar in Belgaum, Karnataka showed that majority, that is, 71.9% were girls [9]. In contrast, the study done by Sihra *et al.* in Jaipur, Rajasthan showed that majority were boys with 56.9% [6].

In the present study, majority of type of family of study participants in both rural and urban area was nuclear family with 74% and 84%, respectively. Even in the study done by Sihra *et al.* in Jaipur, Rajasthan, majority of type of family of study participants was nuclear family with 61.2% [6]. In contrast, the study done by Mangal *et al.* showed that the majority of study participant's type of family was joint family with 54.8% [10]. This could be due to nuclear family becoming more common nowadays.

Majority of study participants, both in rural and urban area were BPL cardholders with 96% and 98%, respectively. Even in the study conducted by Mangal *et al.* in Rajasthan showed majority, that is, 58.8% were BPL card holders [10].

Practice of hygiene among study participants

In this study, majority of study participants with 95.7% in rural area and 100% in urban area always washed their hands before food. Similar results were found in the study done by Manandhar and Chandyo in Nepal with 99.4% of participants always washed their hands before food [11]. This might be due to increased awareness among participants due to the education provided by teachers in school and by parents at home regarding hand hygiene.

In the present study, majority of study participants both in rural area and urban area washed their

hands with soap after using toilet with 94.9% and 94%, respectively. Similar results were found in the study done by Manandhar and Chandyo in Nepal with 96.8% of participants washed their hands with soap after defecation [11]. In contrast, the study done by Dajaan *et al.* in Ghana, West Africa, showed that only 39.88% of study participants washed their hands with soap after using toilet [8]. This might be because variation in education and knowledge levels in developing countries and less developed country.

Majority of study participants in this study took bath daily both in rural area with 75.3% and in urban area with 94%. Even in the study done by Shekhawat *et al.* in Rajasthan showed that 98.2% took bath daily [12]. Furthermore, in the study conducted by Lal and Kavitha in Warangal, Telangana showed that all 100% of participants took bath daily [7]. This could be due to awareness among the participants about hygiene.

In this study, most of the participants wore washed clothes daily both in rural area with 59.8% and in urban area with 82%. In contrast in the study done by Lal and Kavitha in Warangal, Telangana showed that only 35% of study participants wore washed clothes daily [7]. This might be due to more awareness among the study participants about hygiene.

Most of study participants in this study, brushed their teeth once daily both in rural and urban area with 65.1% and 64%, respectively, and the rest 34.9% in rural area and 36% in urban area brush their teeth twice daily. Even in the study done by Lal and Kavitha in Warangal, Telangana showed that 91% of the study participants brushed their teeth once daily [7]. This could be due to good knowledge and their practicing habits about oral hygiene among our study participants.

In the present study, most of the study participants cut their nails weekly in both rural areas with 72.4% and in urban with 76%. Similar results were seen in the study conducted by Sihra *et al.* in Jaipur, Rajasthan with 73.6% of study participants cutting their nails weekly [6]. In contrast the study done by Mangal *et al.* in southern part of Rajasthan showed that only 12% of study participants cut their nails weekly [10]. This shows that most of the study participants in this study were aware of nail hygiene.

Majority of study participants in this study used purified drinking water both in rural area with 87.1% and in urban area with 96%. In contrast, the study done by Meher and Nimonkar in Kolkata showed that 66% of study participants used purified drinking water [13]. This could be because all the schools in this study had purified drinking water supply at schools and also, they brought purified water from their houses [Table 1].

Practice of menstrual hygiene among study participants

In the present study, majority of study participants both in rural area with 99.5% and in urban area with 100% took bath on menstrual days. Even in the study conducted El-Gilany *et al.* in Egypt, Africa showed that 70.9% of study participants took bath during menstrual days [14]. In contrast, the study done by Dhingra *et al.* in tribal area of Gujjar, Jammu, and Kashmir showed that 98% of participants did not take bath during menstrual days [15]. This could be due to good menstrual hygiene practice among the study participants in this study. Most of the study participants in this study used sanitary pad during menstrual days both in rural area with 70% and in urban area with 92.6%. Even in the study conducted by Korir *et al.* in Kenya, East Africa showed that 80.6% of study participants used sanitary pad [16]. In contrast, the study done by Thakre *et al.* in Nagpur, Maharashtra showed that only 49.35% used sanitary pad during menstrual days [17]. Even though percentage of use of sanitary pad was less in rural area compared to urban area, still most of them used sanitary pad in rural area. This might be due to a lack of knowledge about availability of sanitary pad at low rates and also could be due to habit of using cloth pad.

In the present study, majority of study participants change their pads once in 6–8 h both in rural area with 88.8% and 85.2% in urban area. Even the study conducted by Deshpande *i.* in Karad, Maharashtra showed that 63.34% of participants change their pads once in 8 h [18]. This could be because the maximum time for use of a single sanitary pad is 8 h and they were aware of it and also privacy for changing of pads was available in schools.

Most of the study participants in this study used to dispose their pads in dustbin both in rural area, that is, 45.5% and in urban area with 63%. Even in the study conducted by Paria *et al.* in south 24 Parganas of West Bengal showed that 34.21% of study participants in rural area and 73.45% in urban area disposed their sanitary pads in dustbin [19]. In contrast, the study done by Korir *et al.* in Kenya East Africa showed that 81.2% of study participants dispose their sanitary pads in pit latrine [16]. This could be because dustbin was made available in schools and also, they were aware that pads should not be disposed in latrine.

In the present study, most of the study participants in rural area, that is, 66.1%, and half of the participants in urban area, that is, 50% use to dry their cloth pad in sunlight. Even in the study conducted by Thakre *et al.* in Nagpur, Maharashtra showed that 51.32% of study participants use to dry their cloth pad in sunlight [17]. This shows that half of the study participants were aware that drying of cloth pad in sunlight is hygienic [Table 2].

Sanitation in the schools of study participants

All the schools in this study both in rural area, that is, 100%, and in urban area with 100% had separate toilet for boys and girls. In contrast, the study done by Rai *et al.* in Nepal showed 60% of public schools and 35% of private schools had separate toilet for boys and girls [20]. This shows that people in Shimoga are more concerned with the privacy needed for girl participants.

All the schools in the present study both in rural area, that is, 100%, and in urban area with 100% had water facility in their toilets. In contrast, the study conducted by Wada *et al.* in Nigeria, West Africa, showed that only 67.8% of schools had water facility in school toilet [21]. This could be due to better water supply in Shimoga.

In this study, most of the schools in rural area, that is, 93.6% and 100% in urban area had soap facility. In contrast, the study done by Majra and Gur in Mangalore, Karnataka showed that only 10 % of schools had soap facility [22]. This shows that the schools in Shimoga care more for good hygiene.

In the present study, 57.4% of schools in rural

Table 1: Hygiene practices among high school students ($n=423$)

Variable	Rural students (%) ($n=373$)	Urban students (%) ($n=50$)
Washing hands before food	357 (95.7)	50 (100)
Washing hands with soap after using toilet	354 (94.9)	47 (94)
Taking bath daily	281 (75.3)	47 (94)
Wearing washed clothes every day	223 (59.8)	41 (82)
Brushing teeth once daily	243 (65.1)	32 (64)
Use of tooth paste	363 (97.3)	49 (98)
Wearing footwear to school	373 (100)	50 (100)
Cutting nails weekly	270 (72.4)	38 (76)
Drinking purified water in school	325 (87.1)	48 (96)
Boys cutting hair monthly	68 (36.6)	6 (26)
Combing hair daily	372 (99.7)	50 (100)

Table 2: The menstrual hygiene practices among high school girls ($n=214$)

Variable	Rural students (%) ($n=187$)	Urban students (%) ($n=27$)
Taking bath on menstrual days	186 (99.5)	27 (100)
Use of sanitary pads	131 (70)	25 (92.6)
Changing pads at 6–8 h	166 (88.8)	23 (85.2)
Disposal of pads to dustbin in schools	85 (45.5)	17 (63)
*Regular washing of cloth pad	56 (100)	2 (100)
*Drying of cloth pad in sunlight	37 (66.1)	1 (50)
*Disposal of cloth pad	52 (92.8) by burning	2 (100) % into dustbin

*Students who are using cloth pad both rural and urban ($n=58$)

Table 3: Sanitation practice in their schools ($n=423$)

Variable	Rural students (%) ($n=373$)	Urban students (%) ($n=50$)
Having dustbin in classroom	373 (100)	50 (100)
Emptying dustbin everyday	267 (71.6)	50 (100)
Waste disposal	235 (63) by burning	50 (100) by municipality collection
Separate toilet for girls and boys	373 (100)	50 (100)
Water facility available in toilets	373 (100)	50 (100)
Soap availability in toilets	349 (93.6)	50 (100)
Source of domestic water	214 (57.4) borewell	50 (100) municipality tap water
Source of drinking water	217 (58.1) water bottle from home	27 (54) water bottle from home
Cleaning of class rooms daily	373 (100)	50 (100)

area had borewell as source of water and 100% of schools in urban area had tap water as source of water. Even the study done by Aschale *et al.* in Ethiopia, East Africa showed that 83.3% of schools used tap water as source of water [23]. This could be due to variability in availability of source of water in rural and urban area is different.

In this study, 100% of schools in urban area dispose their waste by municipality collection whereas in rural area 63% of schools dispose their wastes by burning and 9.6% by indiscriminate dumping.

In contrast, the study done by Majra and Gur in Mangalore, Karnataka showed that 40% of schools disposed their wastes by indiscriminate dumping [22]. This shows that in our study still the schools in rural areas needs education and support in proper disposal of wastes [Table 3].

CONCLUSION

Nearly 2/3rd of participants are having good personal hygiene and menstrual hygiene practices

and services including sanitation facilities among their schools. Compared to less than 1/3rd of people having hygiene and sanitation facilities globally (2016) [4].

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