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A comparative study on knowledge and practices regarding school sanitation

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Abstract
This study was formulated before the launch of 'Swacch Bharat' campaign when the 'cleanliness' has become the most talked about word of Indian people. The poor health and lack of sanitation facilities are important underlying factors for low school enrolment, absenteeism, poor classroom performance, and early school dropouts. In the nutshell, India is lacking sanitation in its rural school's setup which affects the performance of children negatively and increases the chances of acquiring many diseases. Therefore, the present study is planned to assess the current situation of knowledge and practices regarding school sanitation in school students of rural Bikaner. In the present study, 1280 students were selected from 32 schools, which comprised of 16 government and 16 private schools. These students were selected by the process of multistage sampling. A self-administered close ended questionnaire was prepared for the study. To find out the relationship between knowledge and practice of government and private school students regarding school sanitation, we conducted test of proportions where the same set of respondents were asked for two different aspects and the result was analyzed through z-test statistic. The results indicated that the knowledge regarding school sanitation (88.1%) and practices levels (72.4%) of Government School students were found as compared to Private School students (93.5%) Knowledge level and practices level (80.5%) of private school students. The Z-calculated (-3.29) for government school and (-3.36) for private school students is higher than the Z-critical (1.96). This leads to the conclusion of rejecting the null hypothesis regarding knowledge and practices level amongst both the group of students regarding school sanitation.

Keywords: knowledge, practices, school sanitation, school students

Introduction
Children spend long hours in schools as a part of their daily routines. The school environment will therefore to a great extent determine the children's health and well–being by providing access to a healthy or an unhealthy environment. It has been estimated that more than 2.3 billion people still live without access to sanitation facilities and are unable to practice basic hygiene such as washing their hands with soap and water. Diseases related to poor sanitation, hygiene and water unavailability causes many people to fall ill or even die. Children are the most vulnerable segment of the population to sanitation concerned health hazards and consequently are affected the most. As per WHO fact sheet, 2013 nearly 1.7 billion diarrhoea cases occurred every year and it causes 7, 60,000 deaths every year. By another report 443 school days are lost annually by these preventable gastro intestinal upsets. In addition to this, poor sanitation has led to the infestation of nearly a billion people - largely children with a variety of worm infections, with its corresponding costs in health and energy. It is obvious that lack of sanitation and hygiene is a public disaster and deserves the highest priority from government as well as society.

It is widely recognised that schools could play an important role in bringing about behavioural changes and promoting better health with the weapon of knowledge. But, water and sanitation related diseases including diarrhoea, trachoma, scabies and Guinea worm, etc. All of these have compromise children's attendance and performance at school. Access to sanitation facilities is a fundamental right that safeguards health and human dignity. Such improvements may go hand in hand with hygiene behaviour change and the transmission of disease can to be prevented which will result in to better performance, better enrolment stick and educated and healthy parents of next generation.

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Rationale of the Study

1. Children are the most vulnerable to environmental health hazards and are subsequently also the worst affected. But then focus of the present study is made upon school children because they are eager to learn at the early stages of life, they have important roles in household chores, they can become agent of change and they are ready for initiatives guided in the schools by the school teachers and their peer groups.

2. Schools will partly determine children's health and well-being by providing a healthy or unhealthy environment and by developing useful life skills on health and sanitation.

3. So whether the said enormously progress of the recent years made in India and consequently in Rajasthan percolates to end points which our villages are still uncertain, regarding the issues of hygiene and sanitation facilities erection , their maintenance and knowledge of children about them and actual adoption of knowledge in practice .Western Rajasthan has traditionally been considered as orthodox area poor in women education level and most importantly this area has been water deprived since time immortal due to its geo climatic condition.

4. Therefore, the present study is planned to find out the relationship between Knowledge and Practices regarding school sanitation among Government and Private school students of rural Bikaner.

Objective of the Study

To find out the relationship between knowledge and practices regarding school sanitation of school students of rural Bikaner

▪ Knowledge regarding school sanitation among selected government and private school students.
▪ Practices regarding school sanitation among selected

government and private school students.

Methodology
The Study was selected from Bikaner district of Rajasthan.

1. Locale of the study: The study was conducted in Bikaner, Rajasthan.

2. Selection of the sample: In present study, multistage sampling was used for selection of Bikaner four directions, then village then schools, after that classes and finally students.

3. Selection of the respondent: In the present study upper primary students were selected because those students have knowledge from their primary class but important is that how many students are using their knowledge in actual practices in daily life. So a total of 40 students, from of 6th, 7th and 8th class of each school (government and private) were selected for study. A total of 1280 respondents were selected for the present study.

Tools of data collection: A self-administered, close ended questionnaire was prepared. Measurement of knowledge and practices regarding school sanitation among selected school students of rural Bikaner district was done by formulating 3 major research tools for data collection and these were:
A. General information
B. Knowledge about school sanitation
C. Practices about school sanitation

Results and Discussion
The study for this objective includes the understanding of the knowledge and practices regarding school sanitation. The results of the present study as well as relevant discussions have been presented under following sub headings.

Table 1: General characteristics of Respondents

| S. No	Characteristics	Government school	Private school	Overall
1	Types Of Family			
A.	Nuclear Family	183	194	377
B.	Joint Family	457	446	903
2	Family Income			
A	Inr 1000-5000 P.M	51	16	67
B	Inr 5001-10000 P.M	262	288	550
C	Inr 10001-15000 P.M	202	253	455
D	Above Inr 15000 P.M	125	83	208
3	Father's Education			
A	Uneducated	46	39	85
B	Primary Education	274	262	536
C	Secondary Education	102	104	206
D	Higher Secondary	110	119	229
E	Others	108	116	224
4	Mother's Education			
A	Uneducated	179	159	338
B	Primary education	252	253	505
C	Secondary education	71	74	145
D	Higher secondary	128	122	250
E	Others	10	32	42

The family background of the students was also assessed in order to gain insights over the type of family environment that student are getting at home. This will be related to the habits

developed and practiced at home and depict that whether students are exposed to the desired environment at home or not. Table 1 displays family type, income group, fathers and

mother's education background, respectively. The knowledge and practice level of the school students were collected and evaluated.

Objective: To find out the relationship between knowledge and practices regarding school sanitation of school students.

The current objective of the study explores the relationship between the knowledge and practice of the same group of students. This implies that how well a student is aware of the various issues related to the school sanitation and what is the knowledge level he is having, is being compared to the practice level that exists with the students. For this objective, the two school groups are studied separately and their knowledge level and practice level are compared. First the government schools will be discussed and then private school's performance will be talked about. Z-test for proportions has been used to measure the statistically significant results. To start with the objective, the first hypothesis is tested which is related to the performance in government schools and is presented as follows:

The parameter under study is school sanitation and its awareness among the students. The various factors comprising this are shown in Figure 1
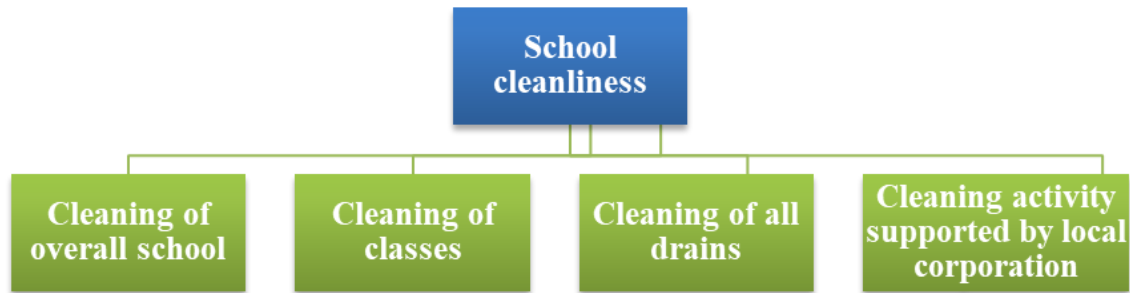
Fig 1: Factors affecting school sanitation

The school is the second home to the students and knowledge regarding its cleanliness is important as students spend their majority time in the school surroundings. The responses reveal a higher knowledge level regarding the school sanitation with both the schools' students responding in a similar manner. Government and private school students are equally aware of the fact that classes, school premises and drains should be clean as reflected by the corresponding data.

To find out the difference in following
- Knowledge regarding school sanitation among selected government and private school students.
- Practices regarding school sanitation among selected government and private school students.

This objective has been studied and analysed with the help of testing of hypothesis related to knowledge and practice separately on various parameters.

The null hypothesis for the Knowledge level is as follows:

H1: There will not be a significant difference between the knowledge of government school students and private school students regarding school sanitation.

To test the hypothesis, the *Z*-test for proportion was calculated

and results are shown in the following tables. For, significance level was 0.05. Based on this confidence level, the critical value for *Z*-statistic was 1.96 to -1.96 for the two-tailed test. As shown in Table 2, with respect to knowledge of school sanitation, Z-calculated (-3.29) was found to be lower than the *Z*-critical (-1.96). This implies that there was a significant level of difference found in the knowledge level of school sanitation among the school students' groups. The proportions indicate that private school students (93.5%) were having better knowledge about it compared to government school students (88.1%). Similar was the finding for all the components of school sanitation factor, namely, cleaning of school (-3.21), cleaning of classes (-4.97), cleaning of drains (-3.45) and services provided by community (-7.18). Therefore, we reject the null hypothesis on the basis of four parameters school sanitation. Nansereko (2010) found that the available sanitation facilities are poorly utilized in Mpigi district, which is a result of many factors including student's background and upbringing, discipline regarding personal hygiene and school and weakness in implementation of hygiene and sanitation policies.

Table 2: *Z*-test showing knowledge level of government and private school students regarding school sanitation and its components (N=1280)

Knowledge parameters	Government school count (%)	Private school count (%)	Z-test (for proportions) statistic	Significance level
School sanitation cleanliness	88.10	93.50	-3.29	S
Cleaning school	87.70	93.01	-3.21	S
Classes	83.91	92.73	-4.97	S
Drains	88.40	93.83	-3.45	S
Services provided by community	81.29	94.41	-7.18	S

Note: S: Significant at 0.05 level.

The null hypothesis for the practice level is as follows:

H2: There will not be a significant difference between the practices of government school students and private school students regarding school sanitation.

The *Z*-test for proportions for the two samples was used to analyse the result as shown in the following tables. For

significance level is 0.05. Based on this confidence level, the critical value for *Z*-statistic was 1.96 to -1.96 for the two-tailed test. As shown in Table 3, Z-calculated (-3.36) for school sanitation was also fund to be lower than the *Z*-critical (-1.96) value implying a significant difference in the practice level of the students of two school groups, private school

students (80.50%) outnumbering government school students (72.45%). The students of these two groups also differed in their practice levels of various subcomponents of school sanitation such as cleaning of school (-3.12), cleaning of classes (-4.07), cleaning of drains (-4.14) and services provided by community (-2.24). The null hypothesis is therefore rejected based on all the four components-- Cleaning school, Cleaning of Classes, Drains, Services provided by community for school sanitation.

Table 3: Z-test showing practice level of government and private school students regarding school sanitation and its components (N=1280)

Practice parameters	Government school count (%)	Private school count (%)	Z-test (for proportions) statistic	Significance level
School sanitation cleanliness	72.45	80.50	-3.36	S
Cleaning school	73.28	80.63	-3.12	S
Classes	68.79	78.71	-4.07	S
Drains	70.20	80.20	-4.14	S
Services provided by community	77.50	82.50	-2.24	S

Note: S: Significant at 0.05 level.

Comparing the knowledge and practice level in various school students with respect to school sanitation, there were many studies conducted in various parts of the world. Overall if we consider the knowledge and practice level among the students of Bikaner district, it is found to be on the higher side. Like the study by Dongre *et al.* (2006) [2] in the Wardha District, this study also revealed that the awareness and practice level was low with regard to hygiene and sanitation. With respect to personal hygiene, not even 50% respondents were found maintaining personal hygiene. Study by Chudgar (2010) [1] regarding knowledge and practices in Ghana. Instead of two school groups, the hygiene was compared in two regions irrespective of age and education. Hygiene was the focus of the study that concentrated on human sanitation and its disposal in both the areas. There were significant differences found. But as per the present study, we can see a very high rate of knowledge and practice level among the school students. Study by Ifegbesan (2010) [3] outside India revealed that majority students (>50%) were worried about the waste disposal system in their school, which was leading to unhygienic conditions within the school premises. Steiner-Asiedu *et al.* (2011) [5] also brought forward the comparison between private and public schools. It was seen that hand-washing habits, one of the components of personal hygiene was found to be more prominent among the public school students on various parameters. It was revealed that school children do not practice hand-washing, neither at school nor at home because of unavailability of hand-washing facilities such as soap, towels and running water. Jasper *et al.* (2012) [4] also emphasized that lack of sanitation facilities in schools leads to occurrence of diarrhoeal and gastrointestinal diseases. Given the existing studies and current study, we can say that Objective of study is fulfilled and it can be concluded that private school students are better in terms of knowledge and practices for school sanitation compared to government school students. But overall, it can be said that the students of Bikaner region are following the school sanitation practices in a much better manner.

Conclusions
This study has shown a need to improve practices regarding school sanitation because the government and private school students have good knowledge about school sanitation but they have not good practices due to lack of resources. Such as the water problem in rural area and water source or sanitation service, use of these services, water storage and treatment practices. A change in awareness or knowledge can lead, through the complex system, to the changes in behavior ultimately.

Recommendations
- The strength of the government schools is way too much then the private schools but the awareness campaigns run by them are not up to the mark accordingly. They need to be more rigorous and widespread.
- The huge strength of students also calls for a greater number of facilities. Facilities related to water and sanitation needs to be more appropriate considering the greater number. Toilets and sanitation need to be more frequently cleaned .Also, more number of facilities should be made available so as to fulfill the needs of everyone.
- Taboos exist in the uneducated classes regarding the usage of public toilets and the usage of same toilet by girls and boys. To deal with the former authorities can ensure better public toilet conditions and can run awareness campaigns to help break the taboos.
- Both the genders should be prominently and equally addressed regarding the issues of school sanitation. Addressing just one of them would be an incomplete mission.
- All the students despite their backgrounds of family income and type should be addressed with care and caution. The students from lower background might need more attention and convincing.
- Sanitation would no doubt lead to positive health impacts. Therefore improvement in them would help in achieving better health standards for the country.

Although just knowledge about the practices or even following them is not enough until the proper facilities are also provided. Health impacts can be achieved only if the practices are properly taught about and adopted.

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