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### Original Article

## A school based survey on hygiene in a rural area of northern India

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#### ARTICLE INFO

#### A B S T R A C T

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**Background:** Sanitation is a basic determinant of the quality of life and the human development index. Good sanitary practices help to prevent diseases. Hand washing and oral hygiene are the basic steps to maintaining good health. **Materials and Methods:** The present study was a school based survey undertaken among children in a government school in a rural area of north India with the objectives of finding out the prevalent status of personal hygiene. The total sample was 350 students. The survey was conducted using the GSHS Core Questionnaire Hygiene Module of the Global School-Based Student Health Survey (GSHS) 2013 Core Questionnaire Modules, the final version that was updated in January 2013. **Results:** The total number of students studied in the sample was 350. There were three classes – class I, II and III, each having three sections and a total of 110, 123 and 117 children respectively. All the children adhered to the good habit of washing their hands after using the toilet or latrine, always, or at least most of the times; and also most of the children used soap and water always to wash hands. **Conclusion:** The present study revealed a good standard of hygiene amongst the study population. However, steps are required to be taken so as to improve the status of personal hygiene of all the school children, who are found lacking in this aspect, through various coordinated primordial as well as primary preventive measures like imparting health education.

**Key words:** Sanitation, Hand washing, Personal hygiene, School children, Health education

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### 1. INTRODUCTION

According to the World Health Organisation, about two million people every year die due to diarrhoeal diseases. Most of the deaths occur amongst children less than five years of age.<sup>1</sup> Population in developing countries is the most affected. These are the people living in extreme conditions like poverty, peri-urban

dwelling etc. Among the important problems that are responsible for this kind of situation is poor hygiene behaviour of the school children. The health and hygiene of any individual is largely dependent on the adequate availability of water for drinking and proper sanitation.<sup>1,2</sup> Therefore, there is a direct relationship of water, with sanitation and health. Earlier, the concept of sanitation was limited to the disposal of human excreta mainly. Today it encompasses a comprehensive concept that includes the proper disposal of waste, food hygiene, as well as personal, domestic and environmental hygiene. Proper sanitation is essential not only from the point of view of general health but it has an important role to play in life of an individual as well as the society. Sanitation is a basic determinant of the quality of life and the human development index. Good sanitary practices help to prevent the contamination of both water and soil, thereby preventing diseases. The revised approach incorporated in the Programme titled "Total Sanitation Campaign (TSC)" introduced by the Government of India, lays more emphasis on the Information, Education and Communication (IEC), Human Resource Development (HRD), Capacity Development activities so as to increase awareness among rural people and also generate a demand for sanitary facilities. The technical note on water supply, sanitation, and hygiene education has been prepared to help the programme implementers in making informed decisions and in building a comprehensive and a clear understanding on the School Water Supply, Sanitation and Hygiene Education (SSHE).<sup>2, 3, 4</sup> Handwashing, not only is simple and inexpensive, but handwashing with soap can, in fact, dramatically decrease the number of children falling sick. It has been studies that handwashing with soap can protect about one out of every three young children who fall sick with diarrhea and almost one out of six young children who

get affected by respiratory infections like pneumonia.<sup>4</sup> Although most people around the world do clean their hands reasonably with water, very few of them make use of soap to wash their hands. Washing the hands with soap helps removes germs much more effectively<sup>4</sup>. People and communities around the world celebrate Global Handwashing day, where handwashing lessons and events are held. Handwashing is, in fact, akin to a "do-it-yourself" vaccine. It involves five simple and very effective steps one can take in order to reduce the spread of common illnesses like diarrheal and respiratory ones.<sup>2, 5</sup> Regular handwashing, especially and particularly before commencing and after completion of certain activities, is one of the best possible ways to remove the germs, avoid becoming sick, and prevent spread of germs to the others around. It was in view of the importance of this aspect of personal hygiene that the present study was undertaken in a school of northern India.

## 2. MATERIALS AND METHODS

The present study was a survey undertaken among school children in the junior wing of a government school in a rural area of north India with the objectives of finding out the prevalent status of personal hygiene among the school children and giving suitable recommendations based on the findings of the study. The school was a girls' only school. There were a total of five classes in this wing, from class I to class V. The students of class IV and V were having the terminal examinations and therefore, were excluded from the study. The remaining three classes – class I, II and III, each having three sections and a total of 110, 123 and 117 children who were present out of the complete strength of 121, 127 and 123 respectively, were included in the study. The students varied in age from four years old to seven years old. The total sample was 350 students. The survey was conducted using the GSHS Core Questionnaire Hygiene Module of the

Global School-Based Student Health Survey (GSHS) 2013 Core Questionnaire Modules, the final version that was updated in January 2013. This survey was about the health of the students and the things that may affect their health. The students were given a brief introduction of the survey, the aim and the method of giving the responses. The parents and the school authorities were informed that the information given by the students will be used to develop better health programs for the youngsters. Informed consent was taken and anonymity of the respondents was maintained. As per the questionnaire, besides the personal particulars, there were four questions asked about cleaning teeth and washing hands. The respondents were briefed about keeping their responses private and that they should base the answers on what they really know or do. They were also told that there was no right or wrong answers to these questions.

Completing the survey was voluntary. However, all the students approached in the classes I, II and III participated in the survey. Since the target population had children in the age group of four to seven years of age, the questionnaires were administered by the investigators, as against self-administered method which is recommended for the older children. All questions were answered by all the respondents. There were no blank responses. Data so collected were analyzed by using suitable statistical tests and with the help of Microsoft Excel 2007 as well as EpiInfo version 3.2.

### 3. RESULTS

The total number of students studied in the sample was 350. There were three classes – class I, II and III, each having three sections and a total of 110, 123 and 117 children respectively. The distribution of the children based on their age is as shown in table-1.

When asked the question-1, as to how many times per day did they usually clean or brush their teeth during

the past 30 days, the response was variable for the different ages, as shown in table-2 and figure-1.

**Table 1: Distribution of total number of children as per their age**

AGE IN YEARS	NUMBER OF CHILDREN	PERCENTAGE
≥4 < 5	102	29.14
≥5 < 6	118	33.71
≥6 < 7	114	32.57
7	16	4.57
TOTAL	350	100

**Table 2: Distribution of children as per their response to question 1**

FREQUENCY	≥4 < 5 YEARS	≥5 < 6 YEARS	≥6 < 7 YEARS	7 YEARS	TOTAL
1	0	2	2	3	7
2	53	64	74	14	205
3	49	53	32	2	136
≥4	0	1	1	0	2
TOTAL	102	120	109	19	350

**Table 3: Distribution of children as per their response to question 2**

FREQUENCY	≥4 < 5 YEARS	≥5 < 6 YEARS	≥6 < 7 YEARS	7 YEARS	TOTAL
Never	0	0	0	0	0
Rarely	0	6	2	2	10
Sometimes	0	11	9	2	22
Most of the time	31	46	50	4	131
Always	71	55	53	8	187
TOTAL	102	118	114	16	350

**Table 4: Distribution of children as per their response to question 3**

FREQUENCY	≥4 < 5 YEARS	≥5 < 6 YEARS	≥6 < 7 YEARS	7 YEARS	TOTAL
Never	0	0	0	0	0
Rarely	0	0	0	0	0
Sometimes	0	0	0	0	0
Most of the time	3	2	1	14	20
Always	99	116	113	2	330
TOTAL	102	118	114	16	350

**Table 5: Distribution of children as per their response to question 4**

FREQUENCY	≥4 < 5 YEARS	≥5 < 6 YEARS	≥6 < 7 YEARS	7 YEARS	TOTAL
Never	0	0	0	0	0
Rarely	0	0	0	0	0
Sometimes	0	0	5	1	6
Most of the time	0	6	8	0	14

Always	102	112	101	15	330
TOTAL	102	118	114	16	350

The responses to the question-2, that is, when asked the question-2, as to how often did they wash their hands before eating during the past 30 days, were as shown in table-3 and figure-2.

When asked the question-3, as to how often did they wash their hands after using the toilet or latrine during the past 30 days, the response was relatively uniform as shown in table-4 and figure-3.

It was indeed good to come across small children who adhered to the good habit of washing their hands after using the toilet or latrine, always, or at least most of the times.

The responses to the question-4, that is, when asked the question-4, as to how often did they use soap and water when washing their hands during the past 30 days, were as shown in table-5 and figure-4.

Most of the children used soap and water always to wash hands. This knowledge was inculcated in them by their parents as well as their teachers and both impressed upon them to put this theory into practice. In fact, within the school premises, soap dispensers were placed next to all the taps used for taking water to wash hands; thereby being all the more instrumental in making this a habit for them.

#### 4. DISCUSSION

It is a well known fact that education concerning the prevailing health related problems and the methods for their prevention and control is one of the first eight activities that are listed as essential in primary health care.<sup>6</sup> In a study conducted in West Bengal, the KAP status of the students was assessed. Results indicated that the knowledge of the student about health, attitude towards personal hygiene and the practice of it improved significantly with good education. In another study, school children were examined for their nails, teeth and scalp hairs. This was related to personal hygiene and the relevant infective conditions from the two sets of villages, that is, one set

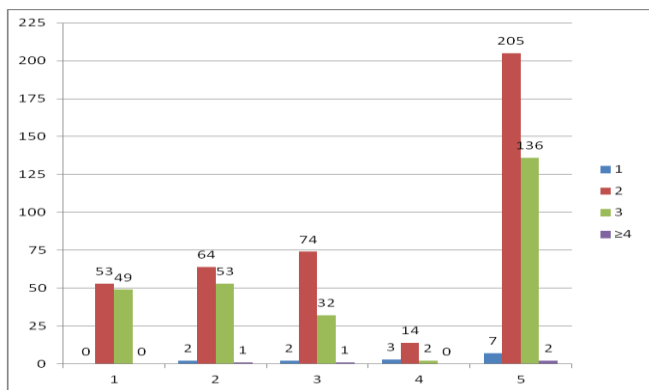


Fig 1: Distribution of children as per their response to question 1

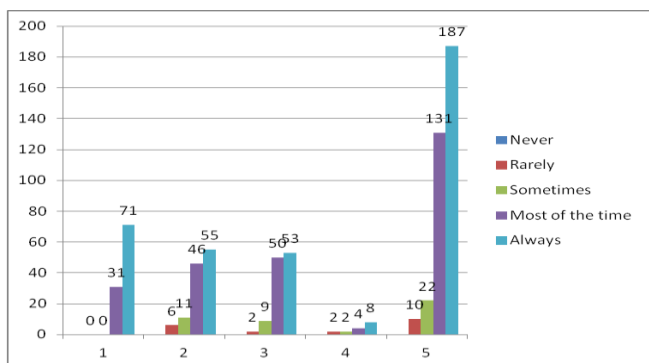


Fig 2: Distribution of children as per their response to question 2

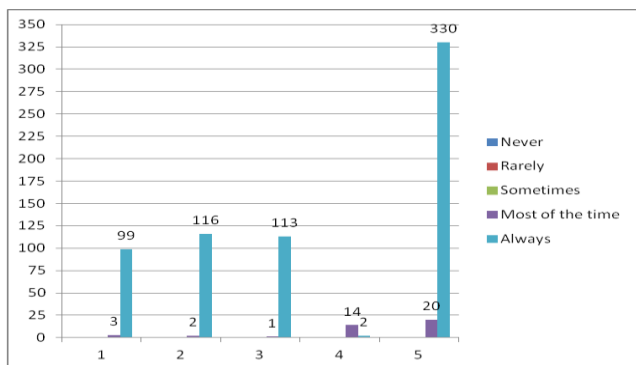


Fig 3: Distribution of children as per their response to question 3

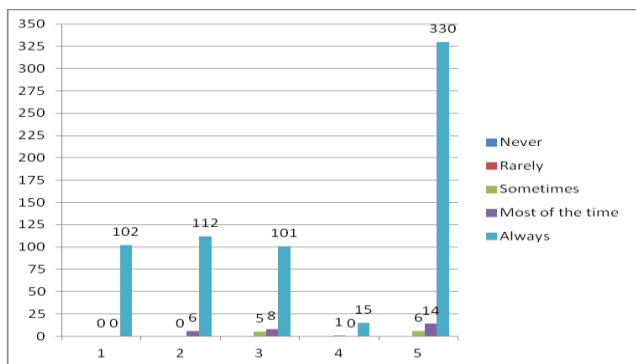


Fig 4: Distribution of children as per their response to question 4

in which primary school teacher was also working as a primary health care worker (Group I) and the second set where the Community Health Volunteer (CHV) was instrumental in delivering primary health care (Group II).<sup>7</sup> The objective of the study was to evaluate the efficiency of role of school teachers as compared to that of the CHVs' in imparting relevant health education to the school children. The results indicated that the teacher better education on this matter too, as compared to the CHV<sup>7</sup>. The importance of school health and the role of teachers has been highlighted in another study conducted in Calcutta.<sup>8</sup> School health services have had the tendency to focus on nutritional support as well as clinical assessment. These inputs are necessary but so also is the need to assess the state of the personal hygiene, which directly or indirectly, is related to the aforementioned factors. This is especially true for a developing country like India. The teacher is considered to be the guardian of the child while in school and plays a pivotal role where the process of primordial prevention is concerned. The consequences of poor personal hygiene become obvious in the form of diarrhea, typhoid, dysentery, gastroenteritis and intestinal worms etc. Due to this morbidity, the affected children are at risk of detrimental effects, for example, poor physical growth and cognitive performance. Majority of these diseases are preventable by the promotion of hygienic practices at school and at home, among school children through proper health education.

In the study conducted in Calcutta, the girls had better hand washing practices than the boys before eating at home (70.4% vs. 56.3%), as well as at school (92.6% vs. 79.6%), while a total of 70% children had good oral hygiene<sup>8</sup>. Clearly, the findings of the present study were better. May be, the difference in place of study was an important factor, because the present study was conducted in north India, where people have

a comparatively better standard of living, even in rural areas.

## 5. CONCLUSION

Good habits are better inculcated during the formative years of life. The time of introduction and reinforcement of good habits is very important in the life of a child. Parents and teachers have a very important role to play in the growth and development of children. They have a tremendous impact on these impressionable minds. The present study revealed a good standard of hygiene amongst the study population. However, steps are required to be taken so as to improve the status of personal hygiene of all the school children, who are found lacking in this aspect, through various coordinated primordial as well as primary preventive measures like imparting health education. The researchers have undertaken to impart health education to these students and also the teachers of the school, subsequent to the study. The school has already framed a plan to organize a regular series of health education camps for the school children in the months to come. Simple and cost effective measures like the improvement of personal hygiene as well as following safe and hygienic practices by children will definitely go a long way in effectively reducing the morbidities and finally breaking the vicious cycle of prevalent infection and malnutrition.

## 6. ACKNOWLEDGEMENT

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## **CONFLICT OF INTEREST**

None identified.