

“HYGIENE PRACTICES AMONG RURAL SCHOOL CHILDREN IN PUDUCHERRY”

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ABSTRACT: AIM: To assess the hygiene practices among rural school children. **SETTINGS AND DESIGN:** This cross-sectional study was conducted at Government higher secondary school in rural area of Puducherry. **METHODS AND MATERIAL:** Around 214 children studying in standard 6th to 8th were randomly selected for the study during June to August 2011. The study was explained to the school children and their assent was taken before the study. They answered the pre-designed questionnaires. Data was collected by face to face interview. **STATISTICAL ANALYSIS:** Statistical analysis was done by using EPI INFO 3. **RESULTS:** Hygiene practice of hand washing before eating was 95.33%. Only 81.31% students used slippers/chappals during use of toilet. Around 58.41% of students went to open field for defecation and 6.07% of students did not wash their hands after defecation. Regarding the frequency of hygiene practice, only 62.15% and 68.22% of students brushed their teeth and bathed every day respectively. The study finding also showed that only 68.69% students washed their face twice daily where as 3.27% students washed their face weekly. As regards to the materials used for hygiene practice, 93.86% of students used tooth brush & paste for brushing of teeth, 85.98% of students used soap while taking bath and 25.70% of students did not use soap for hand wash after defecation.

CONCLUSION: Study findings suggest the need for more hygiene practice education in rural schools. Such healthy practices may help to decrease the burden of communicable diseases in rural school settings.

KEY WORDS: Hand washing, Hygiene, Practices, School Children.

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INTRODUCTION: According to the World Health Organization unsafe water, inadequate sanitation, and insufficient hygiene account for an estimated 9.1% of the global burden of disease and 6.3% of all deaths. ⁽¹⁾ Poor hygiene practices and inadequate sanitary conditions play major role in the increased burden of communicable diseases in developing countries. Hygiene always has been a role of great importance for school children in day to day life. Poor sanitation in the school impairs child's growth and development. It also limits school attendance and negatively affects a student's ability to concentrate and learn. ⁽²⁾ In Senegal out of over 5000 schools, 53% do not have water supply, 46% do not have sanitation facilities, and only half of the schools have separate toilet facilities for girls and boys. ⁽³⁾ As projected by Ministry of Human Resource Development, Government of India, out of all categories of rural schools, 45.9% are without toilets and only 17.3% are without water supply. ⁽⁴⁾

In rural India, intestinal parasites are among the most common infections of school age children. Due to this morbidity, they are at risk of detrimental effects like poor cognitive performance and physical growth. ⁽⁵⁾ To control parasitic load among rural Indian school going children focused participatory hygiene education is very much required. ⁽⁶⁾ One in 10, school going girls does not attend school during menstruation or dropout at puberty because of lack of clean and proper sanitation facilities. Poor menstrual hygiene can lead to fungal infection and repeated infections can lead to serious reproductive problems. ⁽⁷⁾ These also can cause infertility in future life.

Hygiene promotion and sanitation in school education can improve the health & wellbeing of the student. The school sanitation and hygiene education (SSHE) program in India aims to promote sanitation and hygiene in the schools to bring about behavioral change that will have a lasting impact. ⁽⁸⁾ Children, when they acquire health related knowledge and skills become well placed to pursue a healthy life and to work for improved health of their families and communities. ⁽⁹⁾

In India, though there are lots of studies regarding hygiene practice among school children, very few studies focused in rural areas. The present study was carried out with the main objective to assess the hygiene practices among rural school children and also to identify the frequency and types of materials used in the hygiene practice.

MATERIAL AND METHODS: This cross sectional study was conducted on hygiene practices among school children in a rural area, Ariyur, Puducherry, India. The study population comprised of 214 students of standard 6th to 8th of a Government higher secondary school. These class standards were chosen, as they are early in high school education and they can carry the message of hygiene easily among themselves, to their family and to the community. The study period was from June to August 2011. Institutional ethical committee and School head mistress of Government higher secondary school, Ariyur, granted permission to carry out this study. The assent of each student was taken before the study. Each student was interviewed by using a structured questionnaire (drafted in English and translated to Tamil) consisting of demographic information (age, sex, literacy status of parents & family income), environmental information (separate toilet, kitchen, smoke outlet, domestic animal & drainage system in house) and hygiene practice information (hygiene about hand, face, oral, hair etc. and specifically menstrual hygiene in girls). Students were asked about methods and frequency of washing their hands, face, teeth, hair, and consuming food from vendors at school and cutting the nail. They also asked about type of material used for brushing teeth (tooth brush, neem stick, own finger, coal dust), hand washing (soap and water, only water, shikkakai & turmeric), presence of carries tooth & how they wash hand after defecation (only water, soap with water, sand with water), behavior about defecation (using sanitary toilet or open field), using

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slippers/ chappals during toilet use. Information of any episodes of scabies, pediculosis, acute respiratory tract infection, diarrhea in the study year was collected. Other aspects about hair (combing, washing, oil application) and type of water they use (boiled water, normal pipe water, mineral water) was collected. Lastly girls who attained menarche were asked about use of sanitary napkins during menstrual period. Confidentiality of all the data was maintained throughout the study & statistical analysis was done by using EPI INFO 3.

RESULTS: In this study of hygiene practice among rural school children of 6th to 8th standard majority of them were girls 51.9%, maximum students belong to the age group of 13 to 14 years (40.65%) & reading in 8th standard (42.52%) [Table1]. Literacy status of majority of student's mother (38.80%) and father (28.98%) was up to primary school. Father's occupation as unskilled worker (74.29%) was found in majority of students. The highest monthly family income was in between Rupees 980 to 2935 (66.36%), where as the lowest income is less than Rupees 979 (16.36%) [Table 2]. Majority of students (66.72%) belonged to lower upper socio-economic status [Figure 1]. About 71.03% students did not have separate toilet, in their house and 67.29% did not have drainage system near their house. Maximum students (39.25%) were having kutcha house. The smoke outlet in the kitchen was absent in maximum houses (55.61%). About 44.39% of houses had domestic animals. Only 39.25% of students had kutcha house. Around 95% of children washed their hands before having food where as 93% of children washed their hands after having food & after defecation. Around 88.32% of children were using chappals in the school and around 50.47% children had history of head louse infestation. More than fifty percent of children eat the food items from the roadside venders (64.49%). Among the girls 54.05% had attained menarche and out of them only 70% were using sanitary napkins [Table 3]. Regarding the frequency of hygiene practice 62.15% of children brushed their teeth everyday and 68.22% of them took bath daily but only 18.69% children had head bath daily. Majority of the children were applying oil in their body (86.92%) daily. In oral health 36.92% told that, they have dental caries and 29.91% have skin itching once in a year [Table 4]. The materials used in hygiene practice were found to be with tooth paste and brush (93.86%), where as 3.74% of children brush by their own finger. More than half of children went to open field for defecation (58.41%). About 74.30% of children wash their hands with soap and water and 84.98% of children washed their face by soap and water [Table 5].

DISCUSSION: Improved hygiene education programs in schools promote personal hygiene of school children at home and at school, contribute better health, reduces the burden of communicable diseases also improve class performance in children. If good hygiene practice is adopted among school children in their school life it will help them to build a better quality of health in their future, as sustaining appropriate hygiene behaviors remains a major challenge in schools. School teachers too can also motivate, influence and guide the students to practice good hygiene in their daily life by observing their critical behavior on hygiene practice. Healthy hygiene practice will help to reduce infectious disease morbidity and mortality. Every student can be a role model regarding good hygiene practice in their place. Girl students must be provided menstrual hygiene education by health educators, senior lady teachers of the school.

In this study of rural school children belong to standard 6th to 8th were assessed about the hygiene practices. Being a rural area more than 50% students are girls. About 54% of girls had

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already attained menarche. Around 50% of parents are either illiterate or educated up to primary school. Though the good thing is parents are interested about education of their children particularly girls but the unfortunate thing is there was no separate toilets for girls and boys.

Around 4.67% & 6.54% of students did not wash their hands before & after eating respectively. It indicates that though majority had the knowledge of hand washing, still 5% of them did not have the knowledge. Similar studies by Visvas et al shows that 98.8% wash hand before eating meals where as only 53.1% wash hand after eating meals.⁽⁶⁾ Surprisingly about 6.07% students did not wash their hands after defecation increasing risk for faeco-oral transmission of diseases. In a KAP study on hygiene among school children in Angolela, Ethiopia, it was reported that 75% students felt hand washing after defecation is important. ⁽⁶⁾ In contrast, studies conducted in Colombia and India reported that hand washing after using the toilets were 82.5% and 86.4% of respectively. ^(10, 11) In our study though the finding is more as compared to other studies but it is still not 100%.

In our study about one fifth of students do not use chappals during use of toilet and 11.68% students were found to be not using any kind of slippers or chappals while going to school. It also revealed that only 20.09% student use socks in their foot. Other hygiene practices like trimming of nail, combing of hair & applying oil on head were not practiced by some of the students. Other study shows that only 38.6% students trimmed their nails.⁽⁶⁾ A study by Catalina Lopez et al reports that finger nail cleaning practices are 67.6% in Bogota, Colombia.⁽¹⁰⁾ Surprisingly in our study roughly 50% of students had the history of head louse infestation and 40.19% students had the habit of spitting saliva/sputum in public places. Other unhygienic practices like nail biting, not using handkerchief during coughing and sneezing were practiced by many students. Many of them were eating food items from the road side vendors near the school. These practices increase the chances of communicable diseases. In a study among 118 school going children of 6 to 14 years of age, Dongre AR et al compared the prevalence of parasitic infection before and after hygiene education. They concluded that hygiene practices like hand washing and trimming of nails significantly decreased the intestinal parasitic infections. ⁽¹²⁾ During menstruation around 70% of girls were not using sanitary napkins making themselves prone for gynaecological diseases. Study by Subhash B et al reports that 49.35% school going girls using sanitary pads. ⁽¹³⁾

Regarding the frequency of hygiene practice not a single practice was done properly by the students. Similar findings also reported by Baral P et al ⁽¹⁴⁾. The high incidence of dental caries and skin itching indicates that the oral hygiene and care of skin was not done properly.

Different materials were used by the students in day to day practices for their hygiene practice. In our study, 2.80% of students used neem stick and 3.74% used their own finger for brushing of teeth. Similar studies Visvas et al, shows that materials used for cleaning teeth was 91.5% by twigs, followed by 1.5% by water.⁽⁶⁾ Some of the students were not using proper materials for hygiene practice during bathing, defecation, cutting of nail, head bath and face wash. Other studies reveals that materials used for bathing with soap is 94.3%, followed by only water without soap 4.5% and by other ways 1.2%. ⁽⁶⁾ Studies by other investigators showed that 36.2% of students used soap and water for hand washing where as 63.8% of students used only water for hand washing.⁽⁶⁾ Other studies show that 38.6% of students trimmed their finger nails regularly. ⁽⁶⁾ Similar study report showed that 21% of students had poor hair washing practices. ⁽⁶⁾

CONCLUSION: The hygiene practice though practiced by majority of students in rural schools, still it has to be improved to make it universal. The frequency of practices should be proper and suitable

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materials must be used. Such healthy practices may help to decrease the burden of communicable diseases in rural school settings.

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TABLE 1: Demographic information (n=214)

Variable	Number (%)
Sex	
Boys	103(48.1)
Girls	111(51.9)
Age in years	
11+	42(19.63)
12+	44(20.56)
13+	87(40.65)
14+	26(12.15)
15+	15(7.01)
Standard	
6 th	55(25.70)
7 th	68(31.78)
8 th	91(42.52)

TABLE 2: Literacy, Occupation & Family Income

Variable	Number (%)
Mother's Literacy	
Professional	0
Graduate	3(1.40)
Intermediate	5(2.33)
High school	43(20.09)
Middle school	42(19.62)
Primary school	83(38.80)
Illiterate	38(17.76)
Father's Literacy	
Professional	0
Graduate	5(2.35)
Intermediate	6(2.80)
High school	61(28.50)
Middle school	52(24.29)
Primary school	62(28.98)
Illiterate	28(13.08)
Family Income	
Above 19575	2(0.93)
9788 - 19574	3(1.40)
7323-9787	2(0.93)
4894-7322	8(3.74)
2936-4893	22(10.28)
980-2935	142(66.36)
< 979	35(16.36)
Occupation	

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Professional	0
Semi-professional	0
Clerical, Shop owners, farm owners	8(3.73)
Skilled workers	34(15.88)
Semi skilled workers	9(4.20)
Unskilled worker	159(74.29)
Unemployed	4(1.86)

TABLE 3: Environmental & Hygienic Practice Information (N=214)

Parameter	Yes [€]	No [€]
Environmental Information		
Separate Toilet	62(28.97)	152(71.03)
Separate Kitchen	81(37.85)	133(62.15)
Smoke outlet	29(13.55)	185(86.45)
Domestic Animal	95(44.39)	119(55.61)
Nearby Drainage	70(32.71)	144(67.29)
Type of House	Number (%)	
Kutcha	84(39.25)	
Pucca	58(27.10)	
Thatched	72(33.65)	
Hygienic Practice Information		
Hand Washing		
Before Eating	204(95.33)	10(4.67)
After Eating	200(93.46)	14(6.54)
After Defecation	201(93.93)	13(6.07)
Using Chappals		
In Toilet	174(81.31)	40(18.69)
Other than Toilet	180(84.11)	34(15.89)
In school	189(88.32)	25(11.68)
Wearing Socks	43(20.09)	171(79.91)
Trimming Nail	180(84.11)	34(15.89)
Nail biting	81(37.85)	133(62.15)
Combing Hair	201(93.93)	13(6.07)
Applying Oil on Head	199(92.99)	15(7.01)
History of Head Louse	108(50.47)	106(49.53)
Spitting Saliva/Sputum	86(40.19)	128(59.81)
Using Hand care chief while Coughing/sneezing	116(54.21)	98(45.79)
Eatable from roadside vendors	138(64.49)	76(35.51)
For Girls (n=111)		
Attained Menarche	60(54.05)	51(45.95)
Using Sanitary Napkins	42(70.00)	18(30.00)

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€ Figures in number (%)

TABLE 4: Frequency of Hygiene Practice (n=214)

Parameter	Daily	Twice a day	Once in two days	Weekly	Never
Brushing of teeth	133(62.15)	74(34.58)	7(3.27)	0	0
Taking Bath	146(68.22)	65(30.38)	3(1.40)	0	0
Washing Hands	8(3.74)	19(8.88)	187(87.38)	0	0
Changing Dress	65(30.37)	125(58.41)	15(7.01)	9(4.20)	0
Applying Oil	186(86.92)	11(5.14)	6(2.80)	4(1.87)	7(3.27)
Head Bath	40(18.69)	98(45.79)	62(28.97)	5(2.34)	9(4.21)
Face Washing	52(24.30)	147(68.69)	8(3.74)	7(3.27)	0
	Once in a year	Twice in a year	Thrice in a year	Fourth time in a year	Never
Dental carries	79(36.92)	21(9.8)	5(2.34)	0	109(50.93)
Skin Itching	64(29.91)	13(6.07)	2(0.93)	0	135(63.08)

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TABLE 5: Materials used in Hygiene Practice (n=214)

Parameter	Number (%)
Materials used in Brushing of Teeth	
With tooth paste & brush	200(93.86)
Neem stick	6(2.80)
Own finger	8(3.74)
Banyan tree stick	0
Materials used in Bathing	
Only water	7(3.27)
Soap & water	201(93.93)
Turmeric	2(0.93)
Oil with water	4(1.87)
Materials used in hand washing after defecation	
Only water	38(17.75)
Soap water	159(74.30)
With ash	4(1.88)
Not washing hands	13(6.07)
Behavior in Defecation	
Open field	125(58.41)
Toilet	82(38.32)
Both	7(3.27)
Others	0
Materials used in Cutting Nails	
Nail cutter	184(85.98)
Used blade	19(8.88)
New blade	11(5.14)
Others	0
Materials used in Head Bath	
Only water	9(4.20)
Shampoo	145(67.76)
Shikakai	53(24.77)
Oil	7(3.27)
Materials used in Washing of Face	
Only water	26(12.15)
Soap with water	184(84.98)
Face wash Gel	4(1.87)

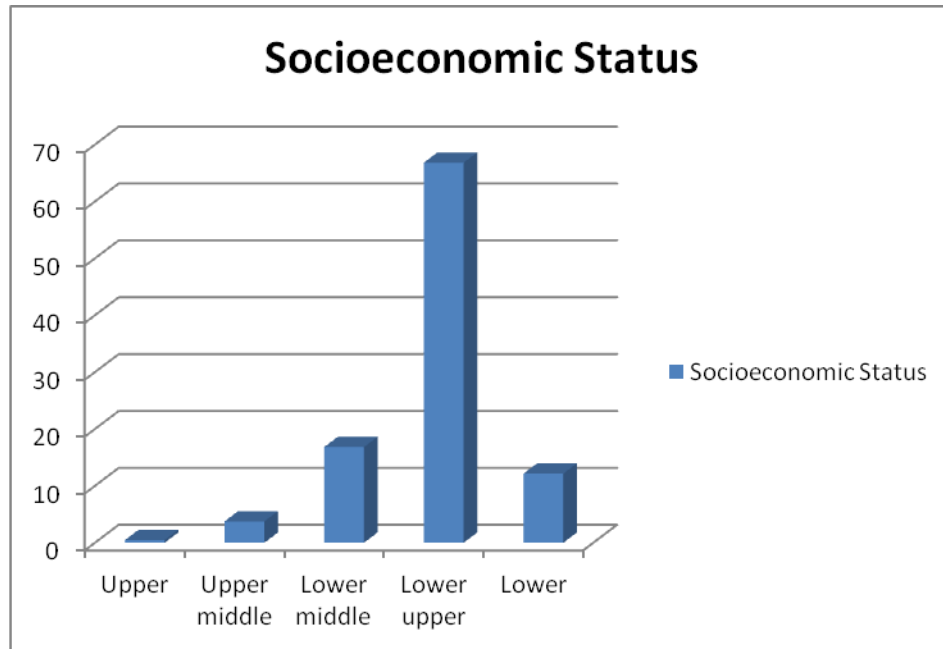


FIGURE 1: Bar diagram showing Socioeconomic Status