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RESEARCH ARTICLE

A COMPARATIVE ASSESSMENT OF KNOWLEDGE AND PRACTICE REGARDING PERSONAL HYGIENE AMONG URBAN AND RURAL SCHOOL CHILDREN IN BELAGAVI, INDIA

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ABSTRACT

Background: Poor hygiene practices and inadequate sanitary conditions play major role in the increased burden of communicable diseases in developing countries.

Objectives: To assess the knowledge and practice regarding personal hygiene among school children.

Materials and Methods: A cross sectional study was conducted in Belagavi district, among 200 children of urban and 200 children of rural area aged between 8 to 16 years. Pre-tested and self administered questionnaire was used to collect information. Percentage and chi-square test were calculated to see the association. Ethical clearance, informed consent and assent were obtained from the concerned authority and person.

Result: The study revealed that more of urban school children (91.5%) compared to rural school (51.5%) were having good knowledge about personal hygiene and (48.5%) of rural school children were having poor knowledge about the same with $P < 0.001$. A statistically significant difference was detected among the practices of urban and rural school children with $P < 0.001$.

Conclusion: Urban school children were having more knowledge regarding personal compared to rural school children. Periodic personal hygiene education is needed to improve hygienic practices.

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INTRODUCTION

The practice of personal hygiene is as old as the origin of mankind. It is the practice of maintaining cleanliness of the body through hand washing, brushing teeth, bathing, hair grooming, trimming nails and cleaning ears etc (Rao, 2004). There are about 6.3 lakh schools in India, both primary and upper primary, with 128.3 million children in primary schools and about 50 million in upper primary schools. But it is also a fact that only 8% of the schools have sanitation facilities in school premises, only 44% have water supply facilities, 19% have urinals and 8% have lavatory facilities (Deb *et al.*, 2010). School children are vulnerable to neglect basic personal hygiene, exposing them to various infection and infestation, due to habit of sharing things. Consequences of health problems in school children based on the survey carried out in India are malnutrition, infectious diseases, intestinal parasite, diseases of skin, eye and ear; and dental caries (White *et al.*, 2003). A large fraction of the world's illness and death is attributable to communicable diseases. 31% of all deaths in Asia are attributed to infectious disease.

This trend is especially notable in developing countries where acute respiratory and intestinal infections are the primary causes of morbidity and mortality among school going children (Takalkar *et al.*, 2013). 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. Poor hygiene practices and inadequate sanitary conditions play major role in the increased burden of communicable diseases in developing countries. 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 (Pruss-Ustun *et al.*, 2008). The school sanitation and hygiene education (SSHE) program in India aims to promote sanitation and hygiene in the schools to bring about behavioural change that will have a lasting impact. 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 (Patil *et al.*, 1996). Childhood is the best time for children to learn hygiene behaviours. In rural India, the involvement of teachers and school children in message dissemination has significant effort on improvement in personal hygiene & related morbidities among children.

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MATERIALS AND METHODS

The present cross-sectional study was carried out between September 2011 and March 2013 among the randomly selected urban and rural school children in Belagavi district. The selected schools were Siddarameshwar high school in urban area and government high school Hunchanhutti in rural area. Children between the age group of 8-16 years of 8th, 9th and 10th standard who gave the assent were included in the study. Children below the age of 8 years and above 16 years and who were absent during the data collection period were excluded. Due to lack of published literature investigating knowledge and practice about personal hygiene among children, the present study calculated the maximum possible sample size.

To achieve this, 50% prevalence (p) is considered and was calculated by the formula $n = 4pq/d^2$ ($q=1-p$). Sample size came to 400, after considering an allowable error (d) 5%. Secondly, 200 children of 8th, 9th and 10th standard each from urban and rural area school was selected by proportionate based systematic random sampling in order to select the sample of 400. In urban area 58 children were from 8th standard, 76 were from 9th standard and 66 were from 10th standard. Similarly, 82 children were from 8th standard, 74 were from 9th standard and 44 were from 10th standard in rural area. Correct answer by the children to the question was considered as having good knowledge and wrong answer as poor knowledge.

Table 1. Demographic characteristics of school children among urban and rural school

Variables	Urban school	Rural school
Total children	200	200
Age		
8-10	56(28)	34(17)
11-13	89(44.5)	79(39.5)
14-16	55(27.5)	87(43.5)
Standard		
8 th	58(29)	82(41)
9 th	76(38)	74(37)
10 th	66(33)	44(22)
Gender		
Male	108(54)	126(63)
Female	92(46)	74(37)
Religion		
Hindu	112(56)	123(61.5)
Muslim	61(30.5)	42(21)
Christian	7(3.5)	8(4)
Other	20(10)	27(13.5)
Occupation of Father		
Laborer	56(28)	51(25.5)
Driver	31(15.5)	18(9)
Farmer	32(16)	92(46)
Officer	21(10.5)	2(1)
Business	41(20.5)	21(10.5)
Others	19(9.5)	16(8)
Occupation of Mother		
Housewife	93(46.5)	32(16)
Laborer	47(23.5)	48(24)
Farmer	24(12)	96(48)
Officer	2(1)	0(0)
Business	20(10)	12(6)
Others	14(7)	12(6)
Literacy status of Father		
Illiterate	7(3.5)	42(21)
Primary	19(9.5)	28(14)
Secondary	41(20.5)	18(9)
PUC	24(12)	9(4.5)
Graduate	9(4.5)	3(1.5)
Literacy status of Mother		
Illiterate	73(36.5)	99(49.5)
Primary	48(24)	53(26.5)
Secondary	54(27)	32(16)
PUC	16(8)	12(6)
Graduate	9(4.5)	4(2)

(Figures in the parenthesis indicate percent)

Pre designed and pre tested self administered questionnaire were used to elicit the information on socio-demographic status, knowledge and practices about personal hygiene. Data entry and analysis was made by using Statistical Package for Social Science (SPSS) software (Version 20.0). The results were expressed in percentages. Chi square test was applied to see the association. Ethical clearance was obtained from Institutional Ethics Committee (IEC) of KLEU, J.N.M.C. Written informed consent from principal of respective schools was taken and assent from the students was obtained after explaining about the whole study.

RESULTS

The analysis shows that majority (44.5%) of children belonged to the age group of 11-13 years in urban school whereas in rural school (43.5%) of the children belonged to the age group of 14-16 years. Out of 200 children of Siddarameshwar urban school majority (38%) were from 9th standard while (41%) of children were from 8th standard of Hunchanhutti rural school. In both the schools there were more boys in comparison to girls.

A higher proportion of the children belonged to Hindu religion in both urban (56%) and rural (61.5%) school and there were more illiterate mothers and fathers in rural than urban area. A higher proportion of fathers were working as laborer in both the urban and rural. Majority (46.5%) of the mothers were housewives in urban while (48%) of mothers were farmer in rural. (Table 1)

Of the total 200 urban school children, majority (91.5%) had good knowledge about personal hygiene and (8.5%) had poor knowledge about the same while in rural school only (51.5%) had good knowledge about the personal hygiene and (48.5%) had poor knowledge about the same which was statistically significant. (Table 2)

Regarding the knowledge of children about the various diseases spread due to poor personal hygiene revealed that majority of children in both the urban (51.5%) and rural (49%) were aware that poor personal hygiene causes skin disease, intestinal infection and dental caries. The difference was statistically significant among the urban and rural school children (Table 3)

Table 2. Children according to their knowledge on personal hygiene

Knowledge	Urban school		Rural school		P value
	Number	%	Number	%	
Good	183	91.5	103	51.5	<0.001*
Poor	17	8.5	97	48.5	
Total	200	100	200	100	

*- Significant

Table 3. Children according to their knowledge on various diseases spread due to poor personal hygiene

Diseases	Urban school		Rural school		P value
	Number	%	Number	%	
Skin disease	76	38	94	47	<0.001*
Dental caries	17	8.5	8	4	
Intestinal infection	4	2	0	0	
All of the above	103	51.5	98	49	
Total	200	100	200	100	

*- Significant

^f - Fisher's exact test

Table 4. Children according to practices of personal hygiene

Practices of personal hygiene	Urban school		Rural School		P value	
	Number	%	Number	%		
Consume filter/boil water	Yes	84	42	45	<0.001*	
	No	116	58	55		77.5
Brush teeth daily	Yes	94	47	42	<0.001*	
	No	106	53	158		79
Frequency of brushing teeth	Once a day	72	76.5	30	<0.001*	
	Twice a day	22	23.5	12		29
Clean school uniform regularly	Yes	24	62	98	<0.001*	
	No	76	38	102		51
Cut nails	Once in a week	21	10.5	9	<0.001*	
	Once in a month	67	33.5	87		43.5
	When they became long	112	56	104		52
Use of materials to wash hand	Only water	79	39.5	59	<0.001*	
	Soap and water	40	20	28		14
	No	81	40.5	113		56.5
Frequency of bathing ^f	Everyday	178	89	152	<0.001*	
	Four days a week	22	11	42		21
	Once a week	0	0	6		3
Comb hair everyday	Yes	176	88	92	<0.001*	
	No	24	12	108		54

*- Significant

^f - Fisher's exact test

While assessing practices of children regarding personal hygiene, majority (58%) in urban and (77.5%) in the rural school did not have filtered drinking water facility in their home nor school. Out of 200 children in each school (47%) brushed their teeth daily in urban school and only (21%) of them brushed their teeth daily in rural school. A large proportion of children both in urban (56%) and rural (52%) cut their nails when it became long. A small proportion of children wash their hands with soap and water in both the urban and rural school. Frequency of bathing on a daily basis was higher in urban school children than rural children. Majority of the children in urban (88%) and in rural (46%) comb their hair daily. The difference among the urban and rural school children regarding the practices of personal hygiene was statistically significant (Table 4)

DISCUSSION

In this study out of 400 children in both Siddarameshwar urban school and Hunchanhutti rural school majority were in the age group of 8-10 years, followed by the age group of 11-13 years and a few were in the age group of 14-16 years, which is similar to the findings reported in a study conducted by (Behera *et al.*, 2013) where maximum number of school children belonged to the age group of 13-14 years. Majority of the school children in both Siddarameshwar urban school and Hunchanhutti rural school were males, which is similar to a study conducted by (Ansari *et al.*, 2014). Religion findings revealed that, majority of the school children belonged to Hindu religion which is also similar to a study conducted by (Ansari *et al.*, 2014). Out of the total fathers of both the urban and rural primary school children, majority of them were farmers and labors. Majority of their mothers were housewives followed by farmers and laborers. There were more illiterate mothers (49.5%) and fathers (21%) in rural than urban area whereas a study conducted by (Ansari *et al.*, 2014) showed that (36%) of fathers and mothers (34%) were educated upto secondary level respectively.

In the present study, out of 200 children of Siddarameshwar urban school (91.5%) had good knowledge about personal hygiene and (8.5%) had poor knowledge about the same, while out of 200 children in Hunchanhutti rural school only (51.5%) had good knowledge about personal hygiene and (48.5%) had poor knowledge about the same which was statistically significant. Similar results were seen in a study conducted by (Vivas *et al.*, 2010) which revealed that approximately (52%) of students were classified as having adequate knowledge of proper hygiene. Another similar study done by (Awate *et al.*, 1997) indicated that poor health resulted from the low awareness of the health benefits of personal hygiene.

Majority of children in both the urban (51.5%) and rural (49%) were aware that poor personal hygiene causes skin disease, intestinal infection and dental caries and the difference was statistically significant. A similar study was conducted by (Ingole *et al.*, 2012) which showed (12.3%) students knew that dental caries were caused due to poor personal hygiene.

Regarding the children practices about personal hygiene majority (89%) in urban and (76%) in rural school took bath every day. About (47%) of children brushed their teeth daily in urban school and only (21%) of them brushed their teeth daily in rural school. A similar study was conducted by (Awate *et al.*, 1997) in which (88.1%) children took bath everyday, (61.9%) children brushed their teeth daily which increased to (93.3%) and (70.1%) respectively after the intervention programme. Out of 400 school children, (62%) in urban and (49%) in rural area washed their uniform daily. Students were also asked about their hand washing practices and it was found that only (20%) children in urban and (14%) in rural practice hand washing properly with soap and water. Similar findings were seen in a study conducted by (Ansari *et al.*, 2014) where (96%) mentioned that they wear clean clothes daily and (78%) of students wash their hands with soap and water. The study found a statistically significant difference among the urban and rural school children regarding personal hygiene practices.

Conclusion

The study concluded that although knowledge of personal hygiene among children of both the urban and the rural schools was good their practice of personal hygiene was below standard. Further improvement of knowledge and promotion of personal hygiene among children is still needed especially in rural schools areas.

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