Original Research Article

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A cross sectional, analytical study of personal hygiene related morbidities of children residing in welfare hostels, Tirupati town, Andhra Pradesh, India

Karamthoti Ravi Naik¹, K. Srinivasan^{1*}, G. Raviprabhu², K. Ashok Kumar Reddy², B. Prameela³

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*Correspondence: Dr. K. Srinivasan,

E-mail: ravinaik2001@gmail.com

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ABSTRACT

Background: The objective of the study was to find out the personal hygiene status among boys residing in social welfare hostels by class and age and type of hostel.

Methods: Cross sectional study, analytical study, social welfare hostels in Tirupati town of Andhra Pradesh. Participants was 524 boys. Statistical analysis are percentages and Chi-square test.

Results: The prevalence of scabies was found to be significantly higher in those children with poor personal hygiene (35.7%) compared to average level (18.8%) and good (14.4%) of personal hygiene. The prevalence of other specific morbid conditions was found to be similar in all the three levels of personal hygiene and the differences were not statistically significant.

Conclusions: The prevalence of scabies was found to be significantly higher in those children with poor personal hygiene compared to average level and good of personal hygiene. In view of higher proportion of children with poor level of personal hygiene of children in scheduled tribe hostel, there is a need to sensitize and give health education on personal hygiene related diseases and take necessary preventive steps and supervision by hostel staff especially in scheduled tribe hostel. Hand washing with soap can protect about one out of every three young children.

Keywords: Hostel children, Morbidity pattern, Nutritional disorder, Personal hygiene, Scabies, Skin disorders

INTRODUCTION

Good health increases enrolment and reduces absenteeism sanitation is a basic determinant of the quality of life and the human development index. Good sanitary practices help to prevent diseases. Hygiene plays an important role in preventing many bodily diseases. Prevention is brought about by focusing on personal hygiene of the human body, particularly the parts that require special care/cleaning from hair, and the apertures or holes that

are exposed more to dirt - the eyes, ears, urinals and anus. These body parts also include places that are not exposed to sunlight and air like the arm pits and pubic regions in addition to the human skin - the prime focus of hygienic cleaning.

Human beings feel physically and psychologically relaxed after bathing; they also feel their morale boosted. Clean skin, nails, teeth, hair and clothes indicate physical, mental and social health. Clothing hygiene or cleanliness

¹Department of Community Medicine, Government Medical College, Anantapuramu, Andhra Pradesh, India

²Department of Community Medicine, S.V. Medical College, Tirupati, Andhra Pradesh, India

³Department of Anatomy, Kurnool Medical College, Kurnool, Andhra Pradesh, India

and tidiness are two necessary activities to bring about or enjoy health; both healthy and sick individuals perform the two activities that have many benefits like: Creating a sense of rest and relaxation, improving a person's self-esteem by improving his/her appearance and removing odors, activating or boosting blood circulation. Maintaining healthy skin, excrescences/outgrowths and mucous membranes or mucosa.

Hand washing and oral hygiene are the basic steps to maintaining good health. At present, there are 2,358 social welfare hostels for scheduled castes functioning in Andhra Pradesh at the rate of 100 per each hostel with a sanctioned strength of 2,35,800 students of which scheduled caste children comprise 70% of the inmates.¹

There are 1,429 hostels for backward classes with a sanctioned strength of 1, 42,900 students and 442 hostels for tribal children with a sanctioned strength of 44,200 students.^{2,3} In Chittoor district, 124 scheduled castes, 67 backward classes, 16 scheduled tribes, and 2 Minority hostels are currently functioning. In Tirupati division, there are 15 scheduled castes hostels, 12 backward classes and 2 scheduled tribe hostels.

Out of these hostels, one hostel each for scheduled castes, scheduled tribes and backward classes is selected by simple random sampling technique for the present study (Department of social, tribal, backward class welfare, Hyderabad 2013). Among the special facilities to the scheduled castes, scheduled tribes and other backward classes to promote their educational advancement, the provisions of hostels for the school going children is an important measure.

Indicators of personal hygiene

Clean and combed hair, clean and cut nails, clean clothes, clean teeth, wax in ear. Morbidities related to poor personal hygiene: diarrhea, fever, upper RTI, head lice, scabies, multiple boils, dental caries, history of worm infestation. Personal hygiene is a public health tool that is used for disease prevention and health promotion in individuals, families and communities. Individual health cards to each boarder has been introduced to facilitate the visiting medical officers from urban school health clinic to record their findings in respect of sick boarders for taking up necessary follow up action (Department of Social Welfare, Hyderabad, 2013).

This study also focuses on the personal hygiene related morbidities of children residing in social welfare, tribal welfare, and backward class welfare hostels. This study is expected to give valuable inputs on the status of the social welfare hostels and help in correcting the deficiencies.

Objective of this study was to find out the personal hygiene status among boys residing in social welfare hostels by class and age and type of hostel.

METHODS

After conducting a pilot study, the study was conducted from August 2013 to July 2014 among boys residing in three welfare hostels, one each for scheduled castes, scheduled tribes and backward classes in Tirupati town. After obtaining institutional ethical committee approval, permission from the Deputy Director of Social Welfare, Assistant tribal welfare officer and Assistant backward classes welfare officer was obtained for conducting the study.

The wardens were interviewed, and hostel registers were used to secure information regarding the number of residential children, their ages and particulars regarding in hostels etc.

Sampling method are simple random technique.

Study design are cross-sectional study, analytical.

Study setting

Three welfare hostels in urban area of Tirupati, one each for scheduled castes, scheduled tribes and backward classes.

Study subjects

A total 524 boys residing in three welfare hostels in Tirupati town. In the present study, 275 students out of 280 in scheduled caste hostel, 140 out of 152 and 109 out of 124 in backward class and scheduled tribe hostel formed the subjects of the study.

Simple random method used for sampling. All the inmates of the hostels formed the study population. The age of the students ranged from 6 to 16 years.

Inclusion criteria

All those children available at the time of the study and who have given consent for the study.

Exclusion criteria

Those children who were not available even after 3 visits to the institution and who had not given consent for the study. It was found that 524 out of 554 inmates in the hostel (around 95%) had participated in the study.

Study period are 6 months for data collection from September 2013 to February 2014 and 3 months for data analysis and 3 months for report writing from May 2014 to July 2014.

Statistical analysis

Data collected in hostels were entered in Microsoft Excel-2007 and analyzed using epi info 3.2.1 version.

Descriptive statistical measure such as percentage was used. For testing the statistical significance of proportions, chi-square test was used. Adjacent rows and columns were combined in cases where the expected value is less than 5 in any cell. In all cases, a probability value of less than 0.05 was considered as statistically significant.

Limitation of this study is the WHO standard global school health survey questionnaire for personal hygiene consists of 35 questions which are very exhaustive and time consuming. Hence in this study, only relevant questions pertaining to this study were taken from GSHS questionnaire and grading of personal hygiene was done by advice from faculty of department.

Since this study is limited by its small sample size, the results may therefore be generalized. A large sample size of children with more number of hostels could have given better results.

Assessment personal hygiene

Assessment of personal hygiene was done by using certain questions of Global School Health Survey Hygiene core questionnaire module updated in January 2013 and graded as per the advice of the guide and faculty of the department of Community Medicine.

RESULTS

Personal hygiene

With consultation from the faculty of Community Medicine the, personal hygiene was graded into good, average and poor based on the score obtained in the various activities mentioned below.

The combined score in all the activities related to personal hygiene has been determined and children were graded into good, average or poor based on the following categories. The minimum score is zero and the maximum score is 12. Accordingly, the following classification was used for grading the personal hygiene of the children - score range-0-12 (Table 1).

Thus, majority of the subjects had good level of personal hygiene (66.2%) while average and poor levels were found in 28.4% and 5.3% subjects respectively (Table 2).

It was found that a majority children belonged to 14-16 years age group (46.6%), studying between 6-8 classes (51.5%) and to scheduled caste (44.1%) (Table 3).

The prevalence of nutritional disorders was found to be significantly higher among those children with poor personal hygiene (53.6%) compared to good (38.6%) and average levels (51.7%). The prevalence of other morbidity disorders was similar with all levels of personal

hygiene with no statistically significant differences among them (Table 4).

Table 1: Assessment of personal hygiene -activities and scores.

Activity	Score
Number of times brushing teeth	
Irregularly	0
Daily once	1
Two or more times	2
Number of times taken bath	
Irregularly	0
Daily once	1
Two or more times	2
Hand washing before eating food	
Yes	2
No	0
Hand washing after toilet	
Yes	2
No	0
Wearing clean clothes	
Yes	1
No	0
Hair combed	
Yes	1
No	0
Nails cut regularly	
Yes	1
No	0
Nails clean	
Yes	1
No	0

Table 1a: Category of personal hygiene score range.

Category of personal hygiene	Score range
Good	10-12
Average	6-10
Poor	0-5

Table 2: Grade of personal hygiene of the study subjects.

Grade of personal hygiene	Number of children	Percentage (%)
Good	347	66.2
Average	149	28.4
Poor	28	5.3
Total	524	100.

The prevalence of scabies was found to be significantly higher in those children with poor personal hygiene (35.7%) compared to average level (18.8%) and good (14.4%) of personal hygiene.

Table 3: Age, class and social category distribution of subjects (N=524).

Variable	Number of subjects	Percentage (%)
Age group of childs	ren (years)	
8 -10	77	14.7
11 - 13	203	38.7
14 -16	244	46.6
Class of study		
3 - 5	85	16.2
6 - 8	270	51.5
9 -10	169	32.3
Social category		
Scheduled caste	231	44.1
Scheduled tribe	117	22.3
Backward classes	154	29.4
Other castes	22	4.2

The prevalence of other specific morbid conditions was found to be similar in all the three levels of personal hygiene and the differences were not statistically significant (Table 5).

Higher proportion of children residing in scheduled tribe (10.1%) and scheduled caste (5.1%) hostels had poor level of personal hygiene compared to backward classes hostel (2.1%). Thus personal hygiene was better in backward classes hostel compared to scheduled caste and scheduled tribe hostels. The differences were also statistically significant (p<0.001; S) (Table 6).

In children aged 8-10 years, a comparatively higher proportion of poor level of personal hygiene (22.1%) was found compared to 11-13 years (4.4%) and 14-16 years (76.6%) followed by 11-13 years (59.1%). The differences were also statistically significant (p<0.001; S) (Table 7).

Table 4: Morbidity disorders by personal hygiene of subjects.

	Personal hygiene			
Morbidity disorder	Good (%)	Average (%)	Poor (%)	P value
	(n=347)	(n=149)	(n=28)	
Skin disorders	159 (45.8)	70 (47.0)	14 (50.0)	0.89; NS
Nutritional disorders	134 (38.6)	77 (51.7)	15 (53.6)	0.01; S
Eye disorders	98 (28.2)	45 (30.2)	9 (32.1)	0.84; NS
Respiratory disorders	48 (13.8)	24 (16.1)	8 (28.6)	0.10; NS
Gastrointestinal disorders	45 (13.0)	21 (14.1)	5 (17.9)	0.74; NS
ENT disorders	32 (9.2)	14 (9.4)	4 (14.3)	0.67; NS

Table 5: Specific morbidity disorder by personal hygiene of children.

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Morbidity disorder	Good (%) (n=347)	Average (%) (n=149)	Poor (%) (n=28)	P value
Pediculosis	98 (28.2)	45 (30.2)	9 (32.1)	0.85; NS
Scabies	50 (14.4)	28(18.8)	10 (35.7)	0.01; S
Worms in stool	27 (7.8)	13 (8.7)	3 (10.7)	0.83; NS
Tinea	22 (6.3)	13 (8.7)	4(14.3)	*0.24; NS
Pyoderma	15 (4.3)	7 (4.7)	2 (7.1)	*0.78; NS
Diarrhoea	13 (3.7)	6 (4.0)	3(10.7)	*0.20; NS
Skin ulcers	8 (2.3)	6 (4.0)	2(7.1)	

^{*}In the calculation of chi-square value, the average and poor levels were combined to make a minimum expected value of 5 in all the cells

Table 6: Personal hygiene of subjects by type of hostel (n=524).

*Type of heatel	Grade of Perso	Grade of Personal hygiene		
*Type of hostel	Good (%)	Average (%)	Poor (%)	Total (%)
Scheduled caste	185 (67.3)	76 (27.6)	14 (5.1)	275 (100.0)
Scheduled tribe	50 (45.9)	48 (44.0)	11 (10.1)	109 (100.0)
Backward classes	112 (80.6)	25 (17.9)	3 (2.1)	140 (100.0)
Total	347 (66.2)	149 (28.4)	28 (5.3)	524 (100.0)

 $^{*\}chi^2 = 33.1$; df=4; P<0.001; S

Table 7: Personal hygiene of subjects by age group (n=524).

A an annum (im manum)	Grade of Person	Grade of Personal hygiene		
Age group (in years)	Good (%)	Average (%)	Poor (%)	Total (%)
8-10	40 (51.9)	20 (26.0)	17 (22.1)	77 (100.0)
11-13	120 (59.1)	74 (36.5)	9 (4.4)	203 (100.0)
14-16	187 (76.6)	55 (22.5)	2 (0.8)	244 (100.0)
Total	347 (66.2)	149 (28.4)	28 (5.3)	524 (100.0)

 $^{*\}chi^2 = 65.6$; df=4; P<0.001; S

Table 8: Personal hygiene of subjects by class of study (n=524).

Class of study	Grade of person	Grade of personal hygiene		
	Good (%)	Average (%)	Poor (%)	Total (%)
3-5	43 (50.6)	24 (28.2)	18 (21.2)	85 (100.0)
6-8	180 (66.7)	82 (30.4)	8 (3.0)	270 (100.0)
9-10	124 (73.4)	43 (25.4)	2 (1.2)	169 (100.0)
Total	347 (66.2)	149 (28.4)	28 (5.3)	524 (100.0)

 χ^2 =53.5; df=4; p<0.001; S

Children studying in classes 3-5 had higher proportion of poor personal hygiene (21.2%) compared to 6-8 classes (3.0%) and 9-10 grades (1.2%). In other words, the level of personal hygiene was better in 9-10 classes (73.4%) compared to other grades. The differences were also statistically significant (p<0.001; S) (Table 8).

DISCUSSION

In the present study, it was found that (66.2%) had good level, (28.4%) had average level and (5.3%) had poor level of personal hygiene. A higher proportion of poor hygiene (26.2%) was found in Kolkata study among boys. A similar high proportion of poor hygiene was found in Nigerian study (30.0%).4,5 In the present study, the children aged 8-10 years had significantly higher proportion of poor level of personal hygiene (22.1%) compared to 11-13 years (4.4%) and 14-16 years (76.6%). In the present study the prevalence of nutritional disorders was found to be significantly higher among those children with poor personal hygiene (53.6%) compared to good (38.6%) and average levels (51.7%). The prevalence of other morbidity disorders was similar with all levels of personal hygiene with no statistically significant differences among them. Similar finding of higher morbidity was reported with poor personal hygiene (51.0%) compared to average (30.6%) and good levels (18.4%) 5 in the Kolkata study. In the present study, higher proportion of children residing in scheduled tribe (10.1%) and scheduled caste (5.1%) hostels had significantly poor level of personal hygiene compared to backward classes hostel (2.1%). Thus personal hygiene was better in backward classes hostel compared to scheduled caste and scheduled tribe hostels. In children aged 8-10 years, a significantly higher proportion of poor level of personal hygiene (22.1%) was found compared to 11-13 years (4.4%) and 14-16 years (76.6%) followed by 11-13 years (59.1%). Similarly, children studying in classes 3-5 had significantly higher proportion of poor personal hygiene (21.2%) compared to 6-8 classes (3.0%) and 9-10 grades (1.2%). In other words, the level of personal hygiene was better in 9-10 classes (73.4%) compared to other grades. Children belonging to scheduled tribes had significantly higher proportion of poor personal hygiene (7.7%) compared to scheduled caste (5.6%) backward classes (3.9%) and other castes(nil). Very few studies were done especially in our area comparison could not be made. Discussion was done with very few studies.

CONCLUSION

The prevalence of scabies was found to be significantly higher in those children with poor personal hygiene compared to average level and good of personal hygiene. In view of higher proportion of children with poor level of personal hygiene of children in scheduled tribe hostel, there is a need to sensitize and give health education on personal hygiene related diseases and take necessary preventive steps and supervision by hostel staff especially in scheduled tribe hostel. Hand washing with soap can protect about one out of every three young children. Thus, the personal hygiene was better in backward classes & other caste children compared to scheduled caste and scheduled tribe children. The prevalence of skin disorders, nutritional disorders, respiratory disorders, gastrointestinal disorders was higher in children studying 3-5 standards. The statistical significance was however found with regard to skin disorders and respiratory disorders. Education on Health including personal hygiene as well as nutrition education may be made as part of the school curriculum apart from the regular educational activities.

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