

Water, Sanitation and Hygiene Status in the Schools of a District in Karnataka

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How to cite this article: Malingu, Pallavi Sarji Uthkarsh, Gangaboraiah et al. Water, Sanitation and Hygiene Status in the Schools of a District in Karnataka. Volume 13 Issue 3 July-September 2022

Abstract

Background: Safe water, Sanitation and hygiene practices is one of the cost effective way to prevent diseases but open defecation is one of the major public health challenge in India in order to create healthy environment and awareness regarding safe sanitation and hygiene practices at primary school level Government of India implemented WASH(water, sanitation and hygiene) programme throughout the country. **Methods:** A cross sectional study was conducted at 80 schools of Tumakuru district where schools were selected based on multistage sampling technique to assess the WASH activities. Data was analyzed using SPSS version 20. **Conclusion:**Majority of the schools had gender based toilet facility and hand washing facility but lacked soaps for hand wash. Less than one third of school displayed sanitation and hygiene charts and provided filtered water for drinking purposes. Majority of the schools had satisfactory WASH facilities but in terms of monitoring and supervision of hygiene activities but behavioural change activities were found to be average.

Keywords: School-health, Government schools,Health promotion, Hygiene promotion, Sanitation, WASH. Menstrual hygiene management.

Introduction

Unsafe water, poor sanitation, and hand hygiene are responsible for 8, 29, 000 annual deaths globally ¹Whereas in India, 15.5% of total deaths in the year 2016 were due to diarrhea, lower respiratory and other common infectious diseases in India. Karnataka state reported 23.7% of deaths reported in the age group of 0-14 were due to diarrheal diseases, lower respiratory diseases and others.² In India, 40% of population practices open defecation.³ As per ICMR report open defecation, is responsible for 4.6% of the

disease burden through diarrheal diseases and other infections in India.²Safe sanitation hygiene practices acts as a primary barrier for such infections.⁴

Where sanitation and hygiene promotion are one of the components of health promotion and it is cost effective strategy⁵ to eradicate open defecation by creating awareness through education about safe sanitation and hygiene practices and to make every child as an agent to promote sanitation and hygiene in their family and community.

As its commitment to achieve Sustainable

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development goal 6, Government of India (GOI) started WASH (Water, sanitation and hygiene) programme⁶ on 14th August 2015, the GOI declared 100% sanitation coverage in all schools of India.⁷ Current study aimed to assess the status of WASH infrastructure, hygiene and sanitation promotion activities in selected government schools of a district in Karnataka state.

Materials and Methods

A cross sectional study was done in four Taluks of Tumakuru district of Karnataka state from July 2018 to December 2018 after obtaining an institutional ethical committee approval. Multi stage sampling techniques was used to select schools. In the first stage, four taluks out of ten were selected based on convenient sampling technique. In the second stage, from each taluk one hobli was selected conveniently. In the third stage all the government upper primary schools which had co-education coming under the

selected hobli was prepared and 20 schools from each hobli i.e, total 80 schools (20 urban and 60 rural) were selected using a simple random sample technique. Data was collected using a standard observational check list of "Swachh Vidyalaya Puraskar 2017-18. Data was entered in a SPSS software and analyzed using a version 20.

Results

Among 20 urban schools studied only 6(30%) schools were providing filtered and packed water. Out of which 3 schools (50%) were providing < 1.5 liters water/day/student and 33.3 % of schools used container without the tap to store the water. Whereas in 60 rural schools, 25(41.7%) of them were providing filtered and packed water for students, out of which only 20(51.2%) schools providing > 1.5 liters water/day/student and 34(87.2%) schools used container with tap to store the water (table 1)

Table 1: Availability of drinking water facility in school

Indicator	Variable	Urban	Rural	Total
Source of drinking water N=20(for urban) N=60(for rural)	Students bring drinking water from home	14(70.0)	21(35.0)	35(43.8)
	Water storage cement tank within the school premises.	0(0.0)	14(23.3)	15(18.8)
	Filtered/ packaged water provided by the school	6(30.0)	25(41.7)	30(37.5)
N= 6 for urban and N=39 for rural, total=45(applicable only for schools Which had drinking water source)				
Quantity of drinking water available/day/student	Less than 1.5 litres per student per day	3(50.0)	19(48.8)	22(48.9)
	>1.5 litres/person per day throughout the year	3(50.0)	20(51.2)	23(51.1)
	Not applicable	14(70.0)	21(35.0)	35(43.8)
Method of storage	Container without tap	2(33.3)	5(12.8)	7(15.5)
	Container with tap	4(66.7)	34(87.2)	38(84.5)
	Not applicable	14(70.0)	21(35.0)	35(43.8)
Quality of water	No testing	3(50.0)	19(48.8)	22(48.9)
	Tested once in a year	3(50.0)	20(51.2)	23(51.1)
	Not applicable	14(70.0)	21(35.0)	35(43.8)

(column percentages are mentioned in the parenthesis)

Availability Accessibility and safety of toilet facilities

Nearly 89% Co-education schools had at least one toilet unit each for boys and girls. Only 32% of schools in urban and rural area had separate toilet for teachers. Majority (83%) of both rural and urban schools didn't

have toilets that are accessible by CWSN. Height and size of toilet and urinal facilities in all the rural and urban schools were suitable for all age groups. Where as 76% of rural schools toilets had door with latch/bolt and in 13.3% of rural schools didn't have proper door with latch and bolt and 5% of them lacked roof

and proper ventilation and natural light .None of the schools in urban and rural area had separate dustbins

with lid facility for disposal of sanitary waste and facilities for the treatment of sanitary waste(table 2).

Table 2. Accessibility and safety of toilet facilities

Indicator	Variable	Urban	Rural	Total
Height and size of toilet and urinal facilities suitable for all age groups	Yes	20(100.0)	60(100.0)	80(100.0)
	No	0(0)	0(0)	0(0)
All Toilets with secure door with latch and cloth hanging hooks	1. No	0(0)	8(13.3)	8(10.0)
	2. Door with latch/ bolt only	20(100.0)	46(76.7)	66(82.5)
	3. Door with latch/ bolt and cloth hanging hooks	0(0)	6(10.0)	6(7.5)
All Toilets with roof and proper ventilation for natural light and air	Yes	20(100.0)	57(95.0)	77(96.3)
	No	0(0)	3(5.0)	3(3.7)
separate dustbins with lid for disposal of sanitary waste	Yes	0(0)	0(0)	0(0)
	No	20(100.0)	60(100.0)	80(100.0)
Facility for disposal of sanitary waste(treatment/ disposable option)	Yes	0(0)	0(0)	
	No	20(100.0)	60(100.0)	80(100.0)

Hygiene Facilities in Schools

All rural and urban schools had hand washing facilities at accessible height to all children of all age group. There was a shortage in teachers trained

in sanitation and hygiene education but the Child cabinet member were taking active role in promotion of sanitation and hygiene in urban and rural areas by involving in cleaning of school premises, class rooms , teaching areas and toilets. (table 3)

Table 3. Supervision of Hygiene Practices

Indicator	Variable	Urban	Rural	Total
Two teachers trained in sanitation and hygiene education	Yes	0(0)	0(0)	0(0)
	No	20(100.0)	60(100.0)	80(100.0)
Do Child cabinet members taking active role in promotion of sanitation and hygiene	Yes	15(75.0)	42(70.0)	57(71.2)
	No	5(25.0)	18(30.0)	23(28.8)
Supervises the cleaning and maintenance of toilet	1. No one in particular	5(25.0)	18(30.0)	23(28.8)
	2. Team of teachers, staff and child cabinet members	15(75.0)	42(70.0)	57(71.2)
Supervises the hand washing of students before MDM(mid day meal)	1. No one in particular	0(0)	12(20.0)	12(15.0)
	2. Teacher/ staff member	20(100.0)	48(80.0)	68(85.0)

Operation, maintenance of WASH services and capacity building activities

Nearly 90% of the urban and 86.7% of the rural schools were disposing liquid waste to drain. Total 10% urban and 13.3% rural schools didn't have any specific measures to dispose the liquid waste, whereas separated solid organic waste in some of urban schools and in majority of rural schools were handed over to the farmers even though it is required to kitchen garden. The staff incharge mentioned that sustainability and maintenance of kitchen garden was difficult to lack of improper compound wall/barrier facility around the schools.

In all rural and urban school classrooms and teaching areas been cleaned daily. Only 10% of the urban and 16.0% rural school premises were not cleaned daily and had water logging issues. Nearly 30% of schools did not clean their toilets on a regular basis. Majority of the schools were providing awareness on hand washing with soap in the daily morning and assembly clubs. Nearly half of the schools were imparting menstrual hygiene education at least once in 3 months and majority lacked display materials on sanitation and hygiene.

Discussion

In the current study it was found that 37% of the schools were providing filtered water for drinking. Only 18 % schools were depended on common source for drinking and washing purpose. Majority (81%) of rural and urban schools didn't have toilets that are accessible by CWSN where as a study conducted by water aid of India in 9 states and 453 schools and 34 districts of India found that 32% schools had separate facility for children with special needs(CWSN) (32%(12.5%) schools had Wash basin/taps for hand washing either inside or attached to every toilet unit for hand wash after the toilet.

Current study also found that all the schools had child cabinet members and in nearly 75% of the schools child cabinet members were taking active role in promotion of sanitation and hygiene in schools. Which is really a good progress towards creation of sanitation agents to achieve SDG 6, a study in a similar setting in Tanzania schools 80% of schools had active School Health Club (SHC),⁶ and a study conducted in south western Nigeria in public schools found that hygiene education and promotion was found to be poor because none of the schools had sanitation club.⁸

In current study nearly 75% of the schools were providing awareness on sanitation and hygiene in daily morning assembly clubs where as, in 45% of the schools are providing MHM(menstrual hygiene management) education at least once in 3 months and 77.5 % of the schools Conducted Cultural compilation programmes on sanitation and hygiene. Only 21.3% of the schools displayed sanitation and hygiene chart in the school similar to a study conducted in the schools of Tanzania, where 70% of schools promoted hygiene and sanitation by conducting cultural programme and competitions on sanitation and hygiene (either in community or in the schools involving parents⁹ but a study conducted in south western Nigeria in public schools found that frequency of hygiene education was found to be very less (hygiene talk was given once in a term) and frequency of conducting education programme on menstrual hygiene management was very less.⁸

In majority of schools drinking water facility was found be average where sanitation and hygiene facilities was satisfactory. In terms of operation and maintenance of sanitation and hygiene facilities was found to be not up to the mark.

Ethical Clearance

Ethical clearance obtained from RGIPH & CDC ethical committee.

Source of funding

Nil

Conflict of interest

No conflict of interest

References

1. Mortality and burden of disease from water and sanitation [Internet]. World Health Organization. 2016 [cited 5 January 2019]. Available from: https://www.who.int/gho/phe/water_sanitation/burden/en/
2. India: Health of the Nation's States, The India State-Level Disease Burden Initiative. Delhi, India: Indian council of medical research, public health foundation of India, institute for health metrics and evaluation; 2018 p. 65,127,130.
3. Poirier,P.UNICEF's game plan to end open defecation. www.unicef.org. Accessed 5Jan. 2019. https://www.who.int/gho/phe/water_sanitation/burden/en/

- unicef.org/media/91316/file/Game-plan-to-end-open-defecation-2018.pdf
4. The Director, Total Sanitation Campaign Ministry of Drinking Water and Sanitation Government of India. Ecological Sanitation Practitioner's Handbook. New Delhi-110003: The Director, Total Sanitation Campaign Ministry of Drinking Water and Sanitation Government of India; 2011 p. 5,6,7.
 5. Mills, J. E., Cumming, O. The Impact of WASH on Key Health & Social Outcomes - Review of Evidence. 2016. SHARE/UNICEF. Accessed on 5th Jan 2019. <https://www.susana.org/en/knowledge-hub/resources-and-publications/library/details/2780>
 6. Ministry of Human Resource Development, Government of India. Swachh Bharat Swachh Vidyalaya Government of India Ministry of Human Resource Development A National Mission Clean India: Clean Schools A Handbook. Delhi, India. Ministry of Human Resource Development; 2014 p. 2,4,5.
 7. An assessment of school WASH Infrastructure and hygiene behavior in nine states Status of School WASH two years after the Swachh Vidyalaya Abhiyan [Internet]. Wateraidindia.in. 2015 [cited 30 December 2018]. Available from: <http://wateraidindia.in/wp-content/uploads/2016/10/School-Wash-Report-WEB.pdf>
 8. Olukanni DO. Assessment of wash program in public secondary schools in South-Western Nigeria. ARPN Journal of Engineering and Applied Science. 2013;8(3):222.
 9. Antwi-Agyei P, Mwakitalima A, Seleman A, Tenu F, Kuiwite T, Kiberiti S, Roma E. Water, sanitation and hygiene (WASH) in schools: results from a process evaluation of the National Sanitation Campaign in Tanzania. Journal of Water Sanitation and Hygiene for Development. 2017 Feb 14:washdev2017159.