Original Article

Assessment of Water, Sanitation and Hygiene (WASH) in Schools of Jammu District- A Cross Sectional Study

Bhavna Sahni[1], Dinesh Kumar[2], Kiran Bala[3]

[1]Associate Professor, Department of Community Medicine, ASCOMS Sidhra, [2]Additional Professor, Department of Community Medicine, All India Institute of Medical Sciences, Vijaypur, Jammu, [3]Associate Professor, Post Graduate Department of Community Medicine, GMC Jammu.

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Abstract

Background: Provision of safe sanitation services reduces transmission of fecooral diseases, school drop outs, under-nutrition which in turn are important for overall development of children. The study was conducted to evaluate the adequacy of water, sanitation and hygiene (WASH) facilities in schools of rural Jammu.

Methodology: A Cross Sectional survey was conducted in 54 (public and private) schools in rural Jammu using the questionnaire approved by the Global Task Team for Monitoring WASH in Schools.

Results: Piped water was the main source of water supply. Facilities for drinking water were available in all schools. 94.3% schools had 1-9 drinking water points. All schools were doing filtration/chlorination of water. 51% schools reported water and soap availability in girl's toilets and group hand washing activities were conducted once a week in 31.5% schools. Toilets were cleaned once per day in 80% of the schools. 88% schools had toilets within school premises. Menstrual hygiene materials were available in 42 schools.

Conclusions: Environment and sanitation facilities at most of the surveyed schools were reasonably good but not fully satisfactory.

Key-words: WASH, Sanitation, Indicators, School, Assessment

Introduction

Sanitation is not only about hygiene and illness, but also about individual and social dignity. Of the 6 Health related MDGs, Goal 7 is related to environmental sustainability focusing on sustainable access to improved water sources and improved sanitation.[1] In light of the strong interaction between sanitation and health, and of insufficient progress towards improving sanitation, 2008 was declared the International Year of Sanitation.[2] The impact of deficient sanitation on health, education and economic development is profound. In 2015, United Nations General Assembly agreed to adopt the 2030 memorandum for sustainable development. However, even after seven years into SDG there is no remarkable achievement into SDG targets 6.1 and 6.2 (Access to safely managed drinking water source and Access to safely managed sanitation).[3]

The centrality of sanitation to development though widely acknowledged appears to be a distant

Corresponding Author: Kiran Bala, Associate Professor, Department of Community Medicine , GMC Jammu.

E-mail: kiranlachala@gmail.com

reality given the fact that in 2020, 3.6 billion people lacked access to basic sanitation services. Two third of Population resides in rural areas and half in sub-Saharan Africa still lack even basic services.[4] Other challenge is urbanization, it is estimated that 57% of urban dwellers lack access to toilets that provide full sanitation, 16% lack access to basic sanitation services, and almost 100 million urban residents practice open defecation. [5]

India being the second most populous country in the world is faced with the challenge to provide safe water and sanitation facilities to its countrymen. It is encouraging to note that as per National Family Health Survey – 4, in India 91% of urban households and 89% of rural households have access to an improved source of drinking water. Half of Indian households (48%) use improved toilet facilities. Although the number of households practicing open defecation was 55 percent during NHFS-3 survey, it reduced to 39 percent during NFHS-4. The percentage of households with improved sanitation facilities has increased in almost all the states and union territories over the last four years from 2015-2016 (NFHS-4) to 2019-2020 (NFHS-5).[6]

The Government of India is committed to provide sanitation facilities to each and every child of the country and to achieve this many Total Sanitation Campaign (TSC) introduced in 1999 to expand sanitation coverage throughout the country with more focus on rural areas. School Sanitation Hygiene Education (SSHE) has been given due importance in TSC with toilet coverage in every school for two main reasons one is increase in school attendance by reducing security concerns for girls and other one is to improve health outcomes through reduction in diseases.[7] Similarly Swachh Bharat Swachh Vidyalaya is again an effort of the government to guarantee that all Indian schools have fully functional and well maintained water, sanitation and hygiene facilities.[8]

Parsing through the published literature revealed that very few researchers have studied WASH in rural schools both in India and globally. Against this background, the present study was conceptualized to comprehend the ground realities as far as school environment and sanitation is concerned by evaluating the adequacy of WASH facilities at school level.

Methodology

The present descriptive, cross-sectional study was carried in the rural field practice area of the Department of Community Medicine, Government Medical College Jammu after obtaining ethical clearance from Institutional Ethical Committee of Government Medical College, Jammu vide letter no. IEC/GMC/Cat C/ 2020/195 Dated 31-08-2020. A list of all government and private schools in R. S Pura area in Jammu district was obtained. Fifty -four schools were selected from the list by systematic random sampling. Heads of the chosen schools were contacted and were informed about the purpose of the study. They were guaranteed that a total confidentiality of data shall be maintained. Their informed consent was taken. A group of students undergoing training for sanitary health inspectors in the department of Community Medicine were guided to collect data for the study. They collected data during school working hours. A pre tested close ended questionnaire was used to for monitoring WASH in the selected schools.[9] The questionnaire used in the present study was approved by the Global Task Team for Monitoring WASH in Schools in the SDGs, convened by the Joint Monitoring Programme for Water and Sanitation (JMP). The questionnaire consists of core questions which are the minimum needed to monitor WASH in schools as part of the SDGs and a set of expanded questions to support harmonised monitoring of WASH in schools as part of the SDGs. Information on parameters was collected from Head of the school/ Deputy/ or in their absence, any senior teacher, teacher on duty or any other teacher who was deputed for the purpose by the Head. Direct observation of the water, sanitation and hygiene facilities was also carried out by the investigators using a defined checklist.

Results:

Out of the 54 schools that were surveyed, majority were co-educational and a little less than half of the surveyed schools were higher secondary and one third of the surveyed schools were Government schools.

Table1: Core Drinking Water, Sanitation and Hygiene (WASH) questions in surveyed schools:

QUESTIONS	Number (n=54)	Percentage (%)
Water:		
1. What is the main source of drinking water provided by the school?	54	100
Piped water Supply		
Well/spring, Rainwater, Bottled water, Tanker-truck, Lake/River/Stream or No water source	0	0
2. Is drinking water from the main source currently available at the school		
Yes	54	100
Sanitation:		
1. What type of student toilets/latrines are at the school?		
Flush / Pour-flush toilets	54	100
Pit latrines with slab, Composting toilets, Pit latrines without slab, Hanging latrines, Bucket latrines, No toilets or latrines	0	0
2. How many students Toilet/ Latrines are currently usable	14	26.0
1-3		
3-5	10	18.5
>5	20	37.0
3 (a) Are the toilets/latrines separate for girls and boys?	52	96.2
(b) How many Toilet/ Latrines are at the School		
Girls only	30	55.6
Boys only	22	40.7
Common use	2	3.7
Hygiene Questions		
1. Are there hand washing facilities at the school?	54	100
Yes		
2. Are both soap and water currently available at the hand washing facilities?	28	51.8
Yes Water and Soap		
Water only	26	48.2

Piped water was the main source of water supply in all the schools. Half of the facilities had both soap and water for hand washing. None of the school was without availability of water for hand washing (Table 1).

Table2 a: Expanded Drinking Water questions:

QUESTIONS	Number (n=54)	Percentage (%)
AVAILABILITY		
1.In the previous two weeks was drinking water from the main source available at the school throughout each school day		
Yes	54	100
2. Is drinking water from the main source typically available throughout the school year		
Yes (always)	54	100
Mostly (Unavailable < 30 days total)	0	0
No (Unavailable)	0	0
ACCESSIBILITY		
3. Is drinking water accessible to those with limited mobility or vision		
Yes	53	98.1
No	1	1.9
4. Is drinking water accessible to the smallest children at the school		
Yes	50	92.6
No	4	7.4
5. How many drinking water points (e g taps) are at the school		
1 -9	51	94.3
10-19	3	5.7
QUALITY		
6.(a) Does the school do anything to the water from the main source to make it safe to drink		
Yes	54	100
6.(b) if yes, what treatment method is used		
Filtration	39	72.2
Chlorination	15	27.8
Boiling, Solar water Disinfection, Ultraviolet disinfection, Others	0	0

Drinking water facilities were adequate in most of the schools (Table 2a)

Table 2b: Expanded Sanitation Questions:

Questions	Number (n)	Percentage (%)
ACCEPTABILITY		
1. Are water and soap available in a private space for girl's to manage menstrual hygiene		
Yes, water and soap	28	51.8
Water, but not soap	26	48.2

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2. Are there covered bins for disposal of menstrual hygiene material in girl's toilets		
Yes	45	83.3
No	9	16.7
3. Are there disposal mechanisms for menstrual hygiene waste at the school		
Yes	39	72.2
No	15	27.3
4. How many times per week are the student toilets cleaned		
at least once per day	44	81.5
2-4 days /week	10	18.5
once per week, less than once per week	0	0
5. In general, how clean are the student toilets		
Clean	44	81.5
Somewhat clean	10	18.5
ACCESSIBILITY		
6. Is there at least one usable toilet / latrine that is accessible to the smallest children at the school		
Yes	51	94.4
No	3	5.6
7. Is there at least one usable toilet/latrine that is accessible to those with limited mobility or vision		
Yes	51	94.4
No	3	5.6
8. Where are the student's toilets located		
Within school building	48	88.9
Outside building, but on premises	6	11.1
Off premises	0	0
AVAILABILITY		
9. When are students permitted to use the school toilets / latrines		
At all times during the school day	54	100
During specific times during the school days,	0	0
There are no toilets available for use at the school	0	0
QUALITY		
10. Are culturally appropriate anal cleansing material currently available to all students and latrines or septic tanks emptied (or latrines safety covered) when they fill up		
Yes	54	100
11. Is there currently functional lighting in the student toilets on the day of the survey /questionnaire		
Yes	53	98.1
No	1	1.9

Covered bins for disposal of menstrual hygiene materials in girls' toilets were present in 4/5ths of the schools and less than 3/4th of the surveyed schools had disposal mechanisms for menstrual hygiene waste. Toilets were cleaned at least once /day in at least 80% of the schools. (Table 2b)

Table 2C: Expanded Hygiene Questions:

Questions	Number (n)	Percentage (%)
ACCESSIBILITY		
1. Are there hand washing facilities accessible to those with limited mobility or vision		
Yes	48	88.9
No	6	11.1
2. Are there hand washing facilities accessible to the smallest children at the school		
Yes	49	90.7
No	5	9.3
AVAILABILITY		
3. Where are hand washing facilities with water and soap located at the school		
Toilets	44	81.5
Food preparation area	1	1.9
School Yards	9	16.6
Class rooms, Food consumption area, Other	0	0
4. How many hand washing facilities are located at the school		
(a) Total no of taps		
1 – 3	24	44.0
4-6	22	41.0
≥7	8	15.0
QUALITY		
5. How many times per week are group hand washing activities conducted for all students		
At least once per school day	3	5.6
2-4 days/week	34	62.9
Once per week	17	31.5
Less than once per week	0	0
6. Which of the following provisions for Menstrual Hygiene Management (MHM) are available at the school		
MHM (e.g. pads)		
Yes	42	77.8
No	12	22.2
Bathing areas and MHM education	0	0
7. How is solid waste (garbage) from the school disposed of?		
Collected by municipal waste system	35	64.9
Burned on premises	18	33.2
Openly dumped on premises	1	1.9
Buried and covered on premises	0	0

MHM materials were available in 42 schools and solid waste was disposed of by municipality in 2/3rd of the surveyed schools and was burned in premises in the rest. (Table 2c)

Discussion

Water, sanitation and hygiene (WASH) facilities are the basic requirements of an individual and there is a high political commitment for provision of these services both in homes as well as in schools. The findings of the present study reiterate that we need to have inter- sectoral coordination and the four important components of sanitation which are safety; accessibility; affordability and cultural sensitivity should be addressed together. [10] Our results regarding drinking water facilities in school are in concordance with a study conducted in Kerala and another survey conducted by Water Aid India. [11, 12]

As per Global base line report 2018, approximately 50 per cent of Indian schools were deficient in basic sanitation facilities due to various reasons like lack of resources, lack of infrastructure and lack of attitude.[13] Very few studies have assessed the effect of WinS interventions on pupil health and school attendance. Lack of school toilets affect academic achievement due to high adolescent dropout rates especially among girls.[14, 15] Anjali Adukia observed that school-toilet provision noticeably improved enrollment of adolescent girls, especially when offering separate latrines for girls and boys.[16] All surveyed schools in a Vietnam study had student latrines but activities promoting toilet use among children were not performed in schools whereas in our study, group hand washing activities were conducted at least once a week in 31.5% schools.[17] Assessment of sanitation in schools of rural Karnataka, revealed that 90% of the schools were having drinking water points which is in line with our findings while only 10% of the schools had adequate hand washing points with soap which is much lesser than our reported finding of 50%. [18] A similar study conducted in public primary schools in Kenya revealed that piper water supply was available in only 30% schools and only 55% of the schools had hand washing points as opposed to 100% in our study. [19] In another multi-national cross-sectional WASH study, 2270 schools were surveyed in rural regions of six Sub-Saharan African countries and only 1%-23% of rural schools reported improved water sources on premises, improved sanitation, and water and soap for hand washing. [20]

Conclusion and Acknowledgement:

School children are the most compelling advocates of hygiene practices in the community, so we need to endow them with a healthy school environment. However, more research in this domain is the need of the hour.

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Ethical Clearance: IEC GMC, Jammu

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