

Assessment of indicators on drinking water, sanitation, and hygiene (WASH) practices from rural schools of Kathua

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ABSTRACT

Introduction: Safe and adequate water supply and sanitation in schools are prerequisites for right to basic education for school children. The provision of water, sanitation, and hygiene (WASH) facilities has been linked to the achievement of Sustainable Development Goals. **Objective:** The objective of this study is to assess the indicators of WASH in schools falling under the Rural Health and Training Centre (RHTC), Budhi, GMC Kathua. **Material and Methodology:** A cross-sectional study was conducted during a period of two months in the month of September 2019 to October 2019. It was done in the rural area under CHC Nagri Parole Kathua. The total number of schools under CHC is 981. Interview of the head of the school was done using world health organization (WHO) and united nations international children's emergency fund (UNICEF) Standardized Questionnaire for WASH Practices. The Questionnaire includes core and expanded questions on drinking water, sanitation, and hygiene practices. Data were entered in Microsoft Excel and descriptive statistics was analyzed in the form of number and percentages. **Results:** Out of total 139 schools, 57.72% schools had basic drinking water facilities. Only 29.11% schools have basic hand-washing facilities with soap and water; 81.29% of the schools have improved toilets. **Conclusion:** Political will and financing and effective delivery of interventions will be required to ensure universal access to WASH in schools.

Keywords: School indicators, UNICEF, WASH

Introduction

Water, sanitation, and hygiene (WASH) access is essential for the overall healthy growth and development of children from all around the world. As stated in the Rights of the Child Convention held during 1989 that the adequate access to WASH is the right of every child.^[1] Now, the recently 2030 agenda approved for Sustainable Development (United Nations, 2015) also encompasses WASH in schools under the various goals

like the Sustainable Development Goals (SDGs) for health and well-being (SDG 3), also on education (SDG 4) mainly focus on girls education and water and sanitation (SDG 6).^[2]

Over 850 million people have poor access to the water for drinking as well as for other purposes with most of the population globally have poor access to the sanitation facilities. If the facilities attained the access to the WASH facilities, then the morbidity and mortality rates could be reduced.^[3]

According to the WHO/UNICEF statement, school with adequate WASH must have a clean and sufficient water supply, adequate number of toilets which are safe and gender-segregated with proper hand-washing facilities with soap and water.^[4] Facilities in the school should cater to all age groups, including

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small children, children with disabilities, and girls of menstruation age. Still many schools lack the basic facilities. Yet schools in many developing countries lack WASH services, with associated potential detrimental effects on health and school attendance. In 2016, only 57% of schools in the least-developed countries had adequate drinking water facilities and 53% had adequate sanitation.^[5] Due to the consolidated efforts of various policymakers, communities, parents, and the most important government to ensure that each and every child at the school level receives the benefits of WASH.

Material and Methodology

A cross-sectional study was conducted during a period of two months in the month of September 2019 to October 2019. It was done in the schools falling under the rural area of Community Health Centre, Nagri Parole Kathua, with a population is 1,20,000.

Total numbers of PHCs under CHC Nagri Parole are five. We randomly selected three PHCs as per lottery method. All schools under the three PHCs were covered. The total numbers of schools which fall under the three PHCs are 36 under PHC Budhi, 51 under PHC Lakhanpur, and 52 under PHC Kharote. So, total 139 schools were covered. Institutional ethical approval was taken for conducting the study. Interview of the head of the school was done using WHO and UNICEF Standardized Questionnaire^[4] for WASH Practices. 139 schools were selected with prior permission from the principals of the schools. Two teams were formed so that the maximum coverage can be attained in a short span of time. Each team visited five schools a day and took 40 min to assess one school. Information was gathered from the head of the school as well as from other staff members after taking individual consent from them. The questionnaire includes core and expanded questions on drinking WASH practices. Data were entered in Microsoft Excel and descriptive statistics was analyzed in the form of number and percentages.

Permission to conduct the study was obtained from The Institutional Ethics Committee.

Results

Core question regarding the WASH were assessed in Tables 1–3. Table 1 revealed that the 87.05% of schools were using piped water supply. Table 2 about the sanitation revealed that 43.88% of the schools were using pour-flush toilets. About 60% of the schools were having toilets separated for both girls and boys. Table 3 revealed about the hand-washing facilities available at the school. About 56.83% of the schools were having hand-washing facilities available at the school. Tables 4 and 5 revealed about the expanded questions which included drinking water facilities for primary school children, about the menstrual hygiene management, toilets availability for disabled children, about the activities related to hand-washing. Table 6 revealed about the WASH indicators which were calculated as per manual.^[4]

Table 1: Core survey questions about drinking water (n=139)

Questions	n (%)
What is the main source of drinking water provided by the school?	
Piped water supply	121 (87.05%)
Protected well/spring	2 (1.43%)
Rainwater	-
Unprotected well/spring	-
Packaged bottled water	-
Tanker-truck or cart	16 (11.51%)
Surface water (lake, river, stream)	-
No water source	-
Is drinking water from the main source currently available at the school?	
Yes	87 (62.58%)
No	52 (37.41%)

Table 2: Core survey questions about sanitation (n=139)

Questions	n(%)
What type of student toilet/latrines are at the school?	
Flush/Pour-flush toilets	61 (43.88%)
Pit latrines with slab	49 (35.25%)
Composting toilets	3 (2.15%)
Pit latrines without slab	26 (18.70%)
Hanging latrines	-
Bucket latrines	-
No toilets or latrines	-
How many student toilets/latrines are currently usable?	
2-3	71 (51.07%)
3-5	18 (12.94%)
>5	4 (2.87%)
Are the toilets/latrines separate for boys and girls?	84 (60.43%)
How many toilets/latrines are at the school?	-
Girls only	39 (28.05%)
Boys only	16 (11.50%)
Common use	Nil

Table 3: Core survey questions about hygiene (n=139)

Questions	n(%)
Are there hand-washing facilities at the school?	
Yes	79 (56.83%)
No	60 (43.16%)
Are both soap and water currently available at the hand-washing facilities? (n=79)	
Yes, water and soap	23 (16.54%)
Water only	31 (22.30%)
Soap only	10 (7.19%)
Neither water or soap	15 (10.79%)

Discussion

Adequate sanitation, proper hygiene education, and global access to safe drinking water are the need of the hour, which can improve the quality of life, curtail illness, reducing burden of the disease. Provision of safe drinking water supply along with hygienic sanitation facilities is one of the important elements of primary health care as it leads to the prevention of various diseases. So, improvement in safe drinking water and sanitation facilities helps in achieving the stronger primary health care

Table 4: Expanded survey questions about drinking water (n=139)

Questions	n(%)
In the previous two weeks, was drinking water from the main source available at the school throughout each school day?	
Is drinking water accessible to those with limited mobility or vision?	107 (76.97%)
Is drinking water accessible to the smallest children at the school?	3 (2.15%)
How many drinking water points (e.g, taps) are at the school?	30 (21.58%)
2-3	9 (6.47%)
4-5	31 (22.30%)
5-6	65 (46.76%)
>6	34 (24.46%)
Does the school do anything to the water from the main source to make it safe to drink?	21 (15.10%)
Is the school's main water source tested in past 12 months?	39 (28.05%)

Table 5: Expanded survey questions about sanitation (n=139)

Questions	n(%)
Is water and soap available in the girl's cubicles for menstrual hygiene management? (n=89)	
Yes, water and soap	10 (11.23%)
Water, but not soap	61 (68.53%)
No water	19 (21.34%)
Are there covered bins for disposal of menstrual hygiene materials in girl's toilets? (n=89)	27 (19.42%)
Are there disposal mechanisms for menstrual hygiene waste at the school? (n=89)	56 (62.92%)
How many times per week are the student toilets cleaned?	
At least once per day	103 (74.10%)
2-4 days/week	29 (20.86%)
Once per week	7 (5.03%)
Less than once per week	-
Is there at least one usable toilet/latrine that is accessible to the smallest children at the school? (n=123)	118 (84.89%)
Is there atleast one usable toilet/latrine that is accessible to those with limited mobility or vision?	
Where are the student toilets located?	43 (30.93%)
Within school building	
Outside building, but on-premises	121 (87.05%)
Off-premises	18 (12.94%)
How many times per week are group hand-washing activities conducted for all students?	
At least once per school day	9 (6.47%)
2-4 days/week	17 (12.23%)
Once per week	62 (44.60%)
Less than once per week	51 (36.69%)
Which of the following provisions for menstrual hygiene management (MHM) are available at the school?	
Bathing areas	-
MHM materials (e.g, pads)	32 (23.02%)
MHM education	107 (76.97%)
How is solid waste (garbage) from the school disposed of?	
Collected by municipal waste system	88 (63.30%)
Burned on premises	14 (10.07%)
Buried and covered on premises	29 (20.86%)
Openly dumped on premises	8 (5.75%)
Is there functional lighting in the student toilets on the day of the survey/questionnaire?	
Yes	101 (72.66%)
No	38 (27.33%)

Table 6: Indicators of WASH in schools for reporting of Sustainable Development Goals

Indicators	n (%)
Proportion of schools with an improved drinking water source	123/139*100=88.48%
Proportion of schools with drinking water available from improved source (basic)	71/123*100=57.72%
Proportion of schools with improved toilets	113/139*100=81.29%
Proportion of schools with improved toilets which are usable	93/113*100=82.30%
Proportion of schools with improved toilets which are single-sex	55/113*100=48.67%
Proportion of schools with improved toilets which are usable and single-sex (basic)	45/113*100=39.82%
Proportion of schools with hand-washing facilities which have water available.	31/79*100=39.24%
Proportion of schools with hand-washing facilities that have soap and water. (basic)	23/79*100=29.11%

which is essential to achieve health-related SDG and universal health coverage.

WASH in schools promotes hygiene practices as well as increases quality education. One strategy which is notable of achieving the goals (SDG) related to sanitation and safe water supply by 2030 is that to provide all the schools with sustainable, water supply points should be safe, proper hand-washing stands with soap and water and sanitation facilities.^[5] If the WASH in schools program implemented, it results in healthier students, they will in-turn influence WASH practices at their homes, decreases the school absenteeism, proper menstrual management, and girl students come to school during menstruation also. Gendered and rights-based approach will be needed to achieve SDG 6 to WASH, while that of SDG 5 will only be achieved through WASH specific needs and difficulties that girls face during menstruation.

In our study, about 87.05% of schools were having piped water supply and 88.48% of schools with an improved drinking water source which is an indicator of decrease in water-borne diseases. But the percentage still needs to be 100% to achieve the goal. Similar results were also observed in other studies which indicated that the improved drinking water sources leads to decrease in the incidence of diarrhea cases and also against other illness like helminthes, acute respiratory infections which in turn decreases the absenteeism among school students.^[6-10]

Our study revealed that the most of the schools had Flush/Pour-flush toilets followed by pit latrines with slab and about 18.70% of schools had pit latrines without slab which were also observed in other studies.^[11] Out of 139 schools, 84 were co-educated schools with separate boys and girls toilets. About 48.67% of schools were having improved toilets which are single-sex which were also less as compared to other studies.^[12,13] Our study revealed that less percentage of schools were having hand-washing facilities with less number of schools were having both soap and water which was also observed in other studies.^[11,13-16]

Many studies observed that female students face various challenges of menstrual hygiene management (MHM) in school premises (e.g., privacy, negative attitudes, inadequate facilities, limited health and sexuality information, inadequate facilities and privacy) in addition to general lie also.^[17-19] Our study revealed that about 62.92% of schools were having proper disposal system for MHM and 19.42% of schools were having covered bins for disposal of menstrual hygiene materials in girl's toilets. Many recent studies are now focusing more on MHM at the school premises.^[20]

Conclusion

Political will and financing and effective delivery of interventions will be required to ensure universal access to WASH in schools. It is seen that even importance is given to WASH, but at the practical point of view percentage of indicators were not upto

the mark in the rural areas. Therefore, special efforts need to be implemented for the increase in the percentage of indicators of WASH in schools, and also on the maintenance of WASH in school.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Ethical approval

The study was approved by the Institutional Ethics Committee.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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