

SHORT ARTICLE

Swachh Bharat Swachh Vidyalaya Campaign: Situation Analysis of Select Schools in Karnataka State, India

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Abstract

Introduction: Swachh Bharat Swachh Vidyalaya (SBSV) campaign was launched to improve the health and hygiene status in schools of India, giving children a better opportunity to perform well overall. **Objective:** To assess the environment and sanitation status in select government schools as per Swachh Bharat Swachh Vidyalaya campaign guidelines. **Methodology:** This descriptive study included 95 schools from Mangalore. The data abstraction tool was formulated using the SBSV campaign guidelines. **Results:** The findings of this study showed that most schools (88%) had gender segregated toilets and 93.8% schools had regular sanitary napkins supply although 57.5% of them did not have any appropriate provision for their disposal. There were no arrangements for solid waste disposal in 59% of the schools. Majority of the schools (96.8%) provided clean water for drinking. **Conclusion:** The study findings have implications in few key areas ensuring adherence to the campaign guidelines and promote health of the children.

Keywords

Schools; Environment; Health and Sanitation; Swachh Bharat Swachh Vidyalaya; Situation Analysis

Introduction

The Government of India, in prime partnership with United Nations Children's Fund (UNICEF) launched Swachh Bharat Swachh Vidyalaya (SBSV), a nationwide campaign, in 2014.(1) It provides guidelines for schools so that all essential aspects are managed well to keep the quality of water, sanitation and hygiene high. The goal of SBSV was to strengthen the implementation of Water, Sanitation and Hygiene (WASH) program which requires separate toilet units with handwash facilities for girls and boys that are child-friendly, adequate facility for group handwashing (10-12 students), provision of safe drinking water, clean food storage and preparation, operation and maintenance of these facilities, promotion of behavior change and communication activities directed towards health and hygiene and promotion of menstrual hygiene.(2)

Aims & Objectives

To assess the environment and sanitation status in select government schools as per Swachh Bharat Swachh Vidyalaya campaign guidelines in Mangalore.

Material & Methods

Mangalore taluk is divided into Mangalore North with 90 schools and Mangalore South with 110 schools. We purposively selected Mangalore South as study area in view of operational feasibility. Complete enumeration method was followed and 95 schools were included in the study. The data abstraction tool was developed from SBSV campaign guidelines. It consisted of 47 questions addressing 6 domains. Data collection was by observations made by the principal investigator (PI) and interview with the headmasters and food handlers. The 06 domains are as follows:

1. School environment
2. Sanitation
3. Safe and sufficient water for drinking and hand washing
4. Operation and maintenance
5. Mid-day meal
6. Behaviour change activities (1,3)

Institutional ethical committee approval was sought from Yenepoya Medical College, Mangalore (Protocol number: 2019/175; Approved on: 08-08-2019). Permission was obtained from the Block Education Officer of Mangalore South and school head.

Statistical analysis: Data was analyzed using SPSS Version 23 (IBM Corp. Released 2015. IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp.) and presented as frequencies and proportions.

Results

We assessed the schools under various domains. Among 95 schools, 16% was constituted by Lower Primary or Primary Schools, Higher Primary Schools constituted 61% and High schools composed of 23%.

Domain 1: School environment

Most schools (83/95, 87.4%) had easily accessible roads of approach whereas 12.6% (12/95) of the schools were located in areas with difficult terrains.

About half the schools (50/95) have compounds guarding them and 11.6% (11/95) of the schools have partial compounds. (Table 1)

Domain 2: Sanitation

An alarming 57.5% (34/80) of schools did not have any appropriate provision for disposal of sanitary napkins. The data further highlighted that in these schools, girls were pushed to follow unconventional methods of napkin disposal such as flushing used pads down the toilet, wrapping and carrying them back home, washing them and many others. In this study, merely 20% (16/80) of the schools were provided with incinerators of which 3 schools had non-functional incinerators.

It was observed that 87.4% (83/95) of schools had adequate ventilation in their toilets whereas little short of three-fourth (69/95, 72.6%) had adequate lighting. Evidence from the data determined that 88.4% (84/95) of the schools had hygienic toilets. (Table 1)

Domain 3: Safe and sufficient water for drinking and hand washing

One of the most remarkable data to emerge from the study was that nearly 97% (92/95) of schools had potable drinking water made available in steel containers in the school premises. (Table 2)

Domain 4: Operation and maintenance (O&M)

All the schools reported that the school campus, the kitchen and the toilets were cleaned on a daily basis. Of the many options for disposal of solid waste from the staff rooms and classrooms, it was found that nearly 44.2% (42/95) of the schools benefited from the waste collection

facility offered by the panchayat/ municipality, however, 51.6% (49/95) of the schools burned their solid waste. All schools had established arrangements to dispose sewage and sullage wastes. (Table 2)

Critically it was found that only 66.3% (63/95) of the schools had first aid kit provision.

Domain 5: Mid-day meal

All food handlers have been provided with separate soap that they use before cooking and serving food. We observed hand washing practice before mid-day meals in 15% of the schools and it was found that in 71.4% of schools, children used only water to wash their hands before their lunch. Children either ate in halls or inside their own classrooms. Halls were cleaned and mopped by the food handlers but classroom benches were cleaned by students themselves after eating every day.

Domain 6: Behaviour change activities

An important finding is that menstrual hygiene related health education was imparted separately by a nursing staff from a Government health facility or the science teacher of the school or by health personnel to all girls in Higher Primary and High Schools. All schools actively celebrated days of public health importance such as World Health Day, World Environment Day, etc.

Discussion

This is the first study from India assessing the implementation status of SBSV campaign.

Domain 1: School environment

In our study, it was noticed that animals such as goats, cattle, dogs, etc. strolled into the campus due to lack of appropriate compound walls and inadequate guarding. Also, there was no overcrowding with adequate lighting and ventilation in most schools. On the contrary, Majra et al brought out that 90% of the schools had overcrowded classrooms with adequate ventilation and lighting in only 60% and 40% of the schools respectively.(4)

Domain 2: Sanitation

From our study we perceived that good proportion of schools had gender segregated toilets and toilets for children with special needs (CWSN). These values differ from those deduced at a state level and at a national level. In 2013-14, 99.9% of the schools in Karnataka had separate toilets for girls with 29.1% having handwash facilities in close proximity to the toilets and 62.06% of all Government schools had toilets for CWSN.(5) The national estimate for separate toilet for girls was 91%.(6)

An astonishing 57.5% of the schools did not have any appropriate provision for disposal of sanitary napkins. Similar was the observation in studies by Sivakami M et al and Sharma S et al.(7,8) As per WHO-UNICEF baseline report of 2018, 36% of schools in India had functional incinerators for disposal of sanitary pads.(9)

As per the Drinking water, sanitation and hygiene in schools, Global baseline report 2018, 54% of the schools

in India had basic hygiene facilities of handwash and provision of soap.(9) In our study, 88.4% (84/95) of the schools had hygienic toilets with water supply for flushing. U DISE 2013-14 report reveals that 27.4% and 31.5% of the schools had clean boys' and girls' toilets with water supply.

Domain 3: Safe and sufficient water for drinking and hand washing

Potable drinking water was obtained mostly from purifiers (63/95, 66.3%). In a study done by Shrestha M V et al, schools in the urban and rural settings were found to use methods of boiling, straining through cloth or chlorination for purification of water.

Our study reveals that less than half the schools (42/95, 44.2%) have been provided with group handwash facilities. In a study by Shrestha M V et al, most (98.9%) of the students preferred washing hands before meals in the rural areas which was found to be relatively higher than those in the urban regions. Similar findings in a study by Dajaan D S et al observed that 6 out of 10 schools (60%) had hand washing points available of which only 1/3rd of this number had soap and water supply at these points.(10)

Domain 4: Operation and maintenance (O&M)

While few schools resorted to paper collectors for recycling solid waste (16.8%), Gupta V. showed that 75% of the schools handed their waste to the recyclers or paper collectors and 65% of the schools discarded their plastic waste with other wastes.(11) A study done by Majra J P et al showed that 40% of the schools dumped their solid waste indiscriminately.(4) Whereas in our study, 37.9% of the schools dumped their biowaste at the base of plants and trees in the vicinity or in their kitchen garden. A very productive practice noted was the installation of Biogas plants in 4 schools.

Domain 5: Mid-day meal

All food handlers reported that they have been provided with separate soap. This finding was in line with a study done by Sembiah S et al.

Domain 6: Behaviour change activities

In India, there is lack of studies based on the concept of health promotion in schools.(12) In our study, all schools gave adequate health education on sanitation and hygiene but only few schools supplied reading material for menstrual hygiene

Conclusion

Provision of safe water supply, hand washing practices among school children and food handlers, gender 'segregated' toilets, timely and adequate provision of sanitary napkins were important observations made in most schools and were in line with SBSV guidelines. However, attention needs to be given to extension of gender segregated toilets facility to all schools and provision of facilities for disposal of sanitary napkins and solid waste.

Recommendation

This is a descriptive study conducted in 95 schools. It focused on adherence to Swachh Bharat Swachh Vidyalaya campaign guidelines. The domains considered for this study are 'School environment', 'Sanitation', 'Safe and sufficient water for drinking and hand washing', 'Operation and maintenance', 'Mid-day meal' and, 'Behaviour change activities'. Results in most domains were in line with the campaign guidelines barring a few namely solid waste disposals, especially disposal of sanitary napkins, use of soap for handwash, vector breeding sites at schools and supplementary reading material on menstrual hygiene.

The study has few implications and recommendations. Facilities for appropriate disposal of sanitary napkins, appropriate waste management, biogas plants, kitchen garden are recommended as environment friendly solutions. Provision of soaps for handwashing both to school children and food handling staff is an essential component of prevention of infections. In-depth interview of various stakeholders is recommended to understand the enablers and challenges in implementation.

Limitation of the study

This is a descriptive study and we are not looking into testing of any hypothesis. This study is from a select area of Mangalore and the observations may show state wise variation as political, administrative and budget allocation factors play an important role in implementation of any program.

Relevance of the study

Good health and sanitation at schools is imperative to ensure appropriate education and low drop-out rate. The Swachh Bharat Swachh Vidyalaya campaign guidelines promote the same but all schools do not adhere to them uniformly.

This study ventured into all aspects related to health and sanitation status of schools in a comprehensive manner. situational analysis reveals various practises in government schools which are direct implications of administration.

Authors Contribution

Concepts: NS, PRN; Design: NS, PRN; Definition of intellectual content: NS, PRN, ASN; Literature search: NS, PRN; Data acquisition: NS; Data analysis: NS, PRN; Statistical analysis: NS, PRN; Manuscript preparation: NS; Manuscript editing and reviewing: PRN, ASN; Guarantor: PRN, ASN

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Tables

TABLE 1 DISTRIBUTION OF SCHOOLS BASED ON SCHOOL ENVIRONMENT AND SANITATION VARIABLES

Domain 1: School Environment Variables	No. of schools (N=95)	Percentage (%)
Accessibility to schools		
Easy access	83	87.4
Distance from busy places		
At fair distance from busy places*	81	85.3
At close proximity to busy places*	14	14.7
Overcrowding		
Less than 40 students per classroom	88	92.6
Ventilation		
Adequate ventilation in classrooms	95	100.0
Lighting		
Adequate lighting	83	87.4
Domain 2: Sanitation Variables	No. of schools (N=95)	Percentage (%)
Gender segregated toilets		
Yes	84	88.4
Gender segregated toilets for CWSN**		
Yes	4	4.2
Access to toilets		
Within 30m from classrooms and staff room	83	87.4
Separate handwash facility in respective gender segregated toilets		
Yes	31	32.6
Provision of sanitary napkins		
Yes	(N=80) 75	93.8
Soap availability at handwash site		
Available	73	76.8
Provision for disposal of sanitary napkins		
Yes	(N=80) 34	42.5

* Places such as markets, railways, factories, main roads; ** CWSN: Children with special needs

TABLE 2 DISTRIBUTION OF SCHOOLS BASED ON SAFE, SUFFICIENT WATER FOR DRINKING, HAND WASHING VARIABLES, OPERATION AND MAINTENANCE VARIABLES, MID-DAY MEAL AND, BEHAVIOUR CHANGE ACTIVITIES VARIABLES

Domain 3: Safe and Sufficient Water for Drinking and Hand Washing Variables	No. of schools (N=95)	Percentage (%)
Sources of water supply		
Panchayat/Corporation water supply	44	46.3
Own well or installed borewell	37	38.9
Dual source (Panchayat and borewell)	14	14.7
Drinking water made available at schools		
Yes	92	96.8
No	2	2.1
Bring from home	1	1.1
Taste, odor and color of drinking water		
Acceptable	95	100.0
Type of filtration method		
Boiling	29	30.5
Purifier	54	56.8
Boiling and purifier	9	9.5
None	3	3.2
Handwashing facility for at least 10-12 students		
Yes	42	44.2
No	52	54.7
Handwash in garden	1	1.1
Group handwash sessions before mid-day meal	95	100.0
Encourage handwash practice after using toilet	95	100.0
Domain 4: Operation and Maintenance variables	No. of schools (N=95)	Percentage (%)
Disposal of solid waste from the staff rooms and classrooms		
Panchayat/Municipal waste	42	44.2
Burned	49	51.6
Dumped indiscriminately	7	7.4
Paper collectors	16	16.8
Others	1	1.1
Mid-day meal preparation		
ISKCON	21	22
School kitchen	74	77.9
Method of disposal of organic waste		
Panchayat/Municipal waste collection	4	4.2
Buried/ground compost/pipe compost	17	17.9
Dumped at base of plants	36	37.9
Biogas	4	4.2
No kitchen waste	21	22.1
Given to pig/cattle farms	7	7.4
Taken by food handlers for cattle	1	1.1
Prepared compost or dumped at base of plants	5	5.3
Disposal of sewage		
Septic tank	84	88.4
Others	11	11.6
Disposal of waste water from handwash areas		
Functioning sewer/drainage	7	7.4
Soakage pit	1	1.1
To plants, trees	78	82.1
Others (Run offs, stagnation)	9	9.5
Disposal of waste from urinals		

Functioning sewer/drainage system	10	10.5
Septic tank	84	88.4
Others	1	1.1
Disposal of sullage		
Soakage pit	6	6.3
To plants, trees	75	78.9
Others (run offs)	14	14.7
Drainage system		
Pipe system	53	55.8
Open drainage	23	24.2
No drainage system (direct outlet to plants)	7	7.4
Pipe system and open drains	12	12.6
Domain 5: Variables pertaining to Mid -day meal	No. of schools (N=95)	Percentage (%)
Use of soap and water to wash hands before mid-day meal		
Yes	86	90.5
No (i.e., used only water)	9	9.5
Protection of raw food material and milk powder from rodents and insects		
Yes	64	67.4
No	10	10.5
Not applicable (as food prepared at ISKCON)	21	22.1
Domain 6: Behaviour change activities variables	No. of schools (N=95)	Percentage (%)
Behaviour change components available as supplementary reading materials	95	100.0
Information on menstrual hygiene in textbooks or supplementary reading materials	(N=80)	
Yes	9	11.3
Health education on menstrual hygiene to girls	(N=80)	
Yes	78	97.5
Health promoting activities*		
Skits	6	6.3
Competitions (drawing, essay, quiz)	31	32.6
Others (health education, etc)	14	14.7
Skits and competitions	15	15.8
Skits and others	4	4.2
Competitions and others	21	22.1
Skits, competitions and others	4	4.2
*Multiple responses		