

Original Article

Swacha Bharat Abhiyan's WaSH Technique" – Assessment of Knowledge and Practices in Urban Slum Settings: A Cross-sectional Study

M.C. Yadavannavar¹, Praveen Ganganahalli², Soumya Mirji³, Sneha Arkeri³, Sadafara Janwekar³

¹Professor, ²Associate Professor, Dept of Community Medicine, ³Intern, BLDE(DU) Shri.B.M.Patil Medical College, Vijayapura

Abstract

Background: Safe drinking water, sanitation and healthy hygienic practices are essential for an individual to carry a healthy life and absence of these is directly or indirectly responsible for most communicable and non-communicable diseases. **Objective:** To assess the current status of knowledge & the level of practice regarding WaSH among urban slum dwellers. **Methods:** A cross-sectional study was conducted in urban slums of field practice area of Shri B. M. Patil Medical College, Vijayapur. Using systematic random sampling method, the sample size of 384 households was selected. Data was collected through house-to-house survey using predesigned questionnaire by interviewing one adult respondent from each selected household about knowledge and practices regarding water, sanitation and hygiene. **Results:** The average age of the adult respondent of the house was 40.65 ± 17.54 years among which majority were females (63.80%). Only 28.39% of households had knowledge regarding water borne diseases & around 72.4% of households were aware of Swacha Bharat Abhiyan. **Conclusion:** Even though Swacha Bharat Abhiyan was initiated in 2014 there is a clear gap between their knowledge and their actual practice. Therefore, better measures have to be taken to spread awareness among the public.

Keywords: Swacha Bharat Abhiyan, WaSH, urban slum, waste disposal

Introduction

Water is an important resource for sustaining the lives of man, animals and plants. Majority of the communicable and non-communicable diseases are

directly or indirectly linked with poor sanitation and hygiene. Although 89% of the world's population has access to drinking water facilities, about 768 million people rely on contaminated drinking water-sources.¹

Improper sanitation facilities and unsafe drinking water are of prime concern in India where at least 1000 children die every day as a result of diarrheal diseases. India is far behind many developing countries in the area of sanitation and hygiene. Most cities and towns in India are facing issues of dense settlement, shortage of water supply and inadequate facilities for disposal

Corresponding Author:

Dr. M C Yadavannavar

Professor Dept of Community Medicine,
BLDE(DU) Shri B.M.Patil Medical College, Hospital
& Research Center, Solapur Road, Vijayapura 586103,
Karnataka, Phone numbers - 9448816783
E-mail address – mc Yadavannavar@gmail.com

of human excreta.²

Poor sanitation and hygiene are like nuclear bomb which needs a trigger of a new pathogen to initiate a medical calamity.³ Several Studies revealed that, three key hygiene practices i.e. safe disposal of faeces, hand washing with soap at critical times along with safe treatment and storage of drinking water are the most effective ways in reducing water borne disease prevalence.⁴ A variety of factors influence the contamination of water like rapid urbanization, chemicals from industrial discharge, population growth and factors resulting from climate change.⁵

In mid socio-economic countries like India which faces dual threat of both communicable and non-communicable disease these are all the more essential. But most cities and towns in India are dealing with problems regarding waste disposal (both solid and liquid), overpopulation and availability of portable drinking water.⁶⁻⁹

India is a densely populated country with a population of more than 1.21 billion which is still growing even more. And it becomes an issue to provide such a vast population with the basic sanitation, portable water and waste disposal properties using the limited resources available.¹⁰ Unclean water causes nearly 37.7 million people to get sick every year.¹¹ Studies have observed a 50% reduction in incidences of diarrhoea just by practicing healthy hygienic practices like hand washing.¹²

Thus, to tackle these preventable indirect causes of many communicable and non-communicable diseases the government of India introduced multiple initiatives that enabled nearly 1.9 billion people to gain access to improved sanitation facilities.¹ But this still wasn't sufficient to enough to achieve the sanitation target of Millennium Development Goals.⁵ In October-2014 the government of India launched the "Swachh Bharat Abhiyan" to address the deficiencies

in the pre-existing programmes and schemes which mainly aims at providing hygienic sanitation facilities to the majority of the population deprived of it and proper and sanitary methods for disposal of solid and liquid waste and also to increase the awareness among people about sanitation and proper waste disposal.²

But not many studies are available regarding the knowledge and attitude of people towards these practices and even fewer of those from urban slums of south India. There are not many studies available regarding the awareness and effectiveness of the "Swachh Bharat Abhiyan" either. Thus, the present study intends to highlight the factors hindering the success of this programme in urban slums of India.

Material and Methods

The Cross-sectional study was conducted during the month of June & July 2018 in urban slums of field practice area of Shri B. M. Patil Medical College, Vijayapur after taking Institutional Ethical Committee approval.

Sample Size: With the assumption of knowledge of 50% on sanitation and hygiene at 95% confidence level and 5% permissible error, sample size came out to be 384, using formula

$$n = \frac{Z^2}{d^2} \times p \times (1 - p)$$

Where Z = confidence level, p = proportion rate, d = margin of error

Hence 384 households were covered to assess the knowledge, attitude and practices regarding water, sanitation and hygiene.

Sampling Method: There are 2000 houses in the study area. Using systematic random sampling method, the sample size of 384 households was selected. Data was collected through house-to-house survey using predesigned questionnaire by interviewing one adult respondent from each selected

household. The questionnaire was divided in various sections covering the background details of the family, water and sanitation facilities, knowledge and practices of hand wash hygiene and knowledge and perception regarding the SBA.

Data Analysis: Data was presented using mean ± SD, percentages and diagrams. Association between knowledge, attitude, practices and demographic variables was found using Chi-square / Fisher’s exact test. Data was analyzed using SPSS v.17.

Results

A total of 384 houses were surveyed and data was analyzed, which shows the average age of the adult respondent of the house was (40.65±17.54) among which majority were females (63.80%), unemployed (53.38%), completed primary school (27.08%), living in joint families (63.80%), Muslims by religion (58.33%) and belonged to socioeconomic class-IV (31.25%) as shown in Table 1.

Table 1: Socio-demographic distribution of participants

Sl. no.	Demographic variables	Characters	Frequency (n=384)	Percentage (%)
1	Age group (of respondent)	< 30years	124	32.29
		30-45 years	126	32.81
		46-60 years	73	19.01
		>60years	60	15.62
2	Gender (of respondent)	Male	139	36.20
		Female	245	63.80
3	Educational status (of respondent)	Illiterate	56	14.58
		Attended primary school	104	27.08
		Attended High school	95	24.74
		Pre-university	53	13.8
		Graduated	76	19.79
4	Occupation (of respondent)	Unemployed	205	53.38
		Unskilled	72	18.75
		Skilled	48	12.5
		Professional	38	9.9
		Student	21	5.47

Cont... Table 1: Socio-demographic distribution of participants

5	Family type	Nuclear	139	36.20
		Joint	245	63.80
6	Socioeconomic class	I	30	7.81
		II	76	19.79
		III	112	29.17
		IV	120	31.25
		V	46	11.98
7	Religion	Hindu	160	41.67
		Muslim	224	58.33
		Others	0	0

WATER (Table 2): The source of drinking water was most commonly Private tap (64.06%) and the water were collected weekly (86.46%). Majority of the houses did not use any kind of method for treatment of water prior to drinking (66.92%). Only 28.39% of houses had knowledge regarding water borne diseases like cholera, typhoid etc.

Table 2: Details of Water resource

Sl. no.	Variables	Frequency (n=384)	Percentage (%)	
1	Source of water	Private tap	246	64.06
		Community tap	86	22.4
		Bore well	44	11.46
		Packaged drinking water	8	2.08
2	Interval of water collection	Weekly	332	86.46
		2-4 days	4	1.04
		Daily	48	12.5
3	Treatment method	Nil	257	66.92
		Boil	9	2.34
		Alum	26	6.77
		Candle filter	56	14.58
		Any other filter	37	9.64
4	Knowledge about water borne diseases	Yes	109	28.39
		No	275	71.61

NITATION (Table 3): The community toilets were being used by 22.91% of houses where water facility was available, 75.6% of houses had own toilet while only 1.82% of houses did not utilize any toilet facility and went for open air defecation. About 76.82% of houses had water facility in the toilet. 7.29% (28) of house members went for open air defecation during

last 3 months from the time of data collection among which 2 were elders, 20 were children and 6 were others/adults. Among the study houses 123 houses had children aged less than 3 years. About 83.85% of houses were aware about the financial assistance provided by the government for construction of toilet and 78.65% of houses had utilized the facility.

Table 3: Details of Sanitary facilities

SI no.	Demographic variables	Frequency (n=384)	Percentage (%)	
1	Toilet facility	Own	289	75.6
		Community	88	22.91
		Nil	07	1.82
2	Water facility in the toilet	NA	07	1.82
		Yes	294	76.56
		No	83	21.61
3	Location for defecation (n=123)	Toilet	90	73.17
		Open air	33	26.83
4	Awareness about the financial assistance provided by the government	Yes	322	83.85
		No	62	16.15
5	Financial assistance utilized	Yes	302	78.65
		No	82	21.35

HYGIENE (Table 4): All the houses perceived that hygiene was important and took bath and brushed teeth daily. Significance of hand washing as perceived by them is tabulated in table. (52%) of houses utilized both soap and water for maintaining hand hygiene while (28%) utilized only water.

Table 4: Hand Washing Significance

Sl.No.	Significance of hand washing	% (n=384)
1	Cleanliness	42.45% (163)
2	Disease prevention	27.08% (104)
3	Don't know	5.73% (22)
4	Cleanliness and disease prevention both	7.55% (29)
5	Kills germs	11.46% (44)
6	Others	5.47% (21)
7	Not significant	0.27% (1)

WASTE DISPOSAL (Table 5): Majority of the houses disposed their domestic waste by giving it to vehicle collectors (88%), others dumped it in municipal pit(07%) and threw indiscriminately near the house. Majority disposed the waste on daily basis(96%) while (04%) disposed it once in 2-4days. The Liquid waste was disposed using closed drain in majority of the houses (97%) which others (03%) used open drain/threw indiscriminately in front of the house.

Table 5: Waste disposal techniques

Sl.No.	Demographic variables		Frequency (n=384)
1	Method of disposal	Municipal pit	27
		Vehicle collector	336
		Thrown indiscriminately	21
2	Frequency of disposal	Daily	368
		Alternate days	00
		2-4 days	16
3	Liquid waste disposal	Closed drain	371
		Open drain	12
		Thrown indiscriminately	01

SWACH BHARAT ABHIYAN: About 72.4% of houses were aware of SBA. 71.09% of houses thought it to be necessary while others responded as “don’t know”. 47.13% thought that it was effective while 23.96% told it wasn’t. 38.8% of houses

believed that the attitude of people has changed since the implementation of SBA and 45.31% believed the Vijayapur Mahanagar Palika is working for implementation of the program. Responsibility of keeping the surrounding clean as perceived by them is tabulated in table 6.

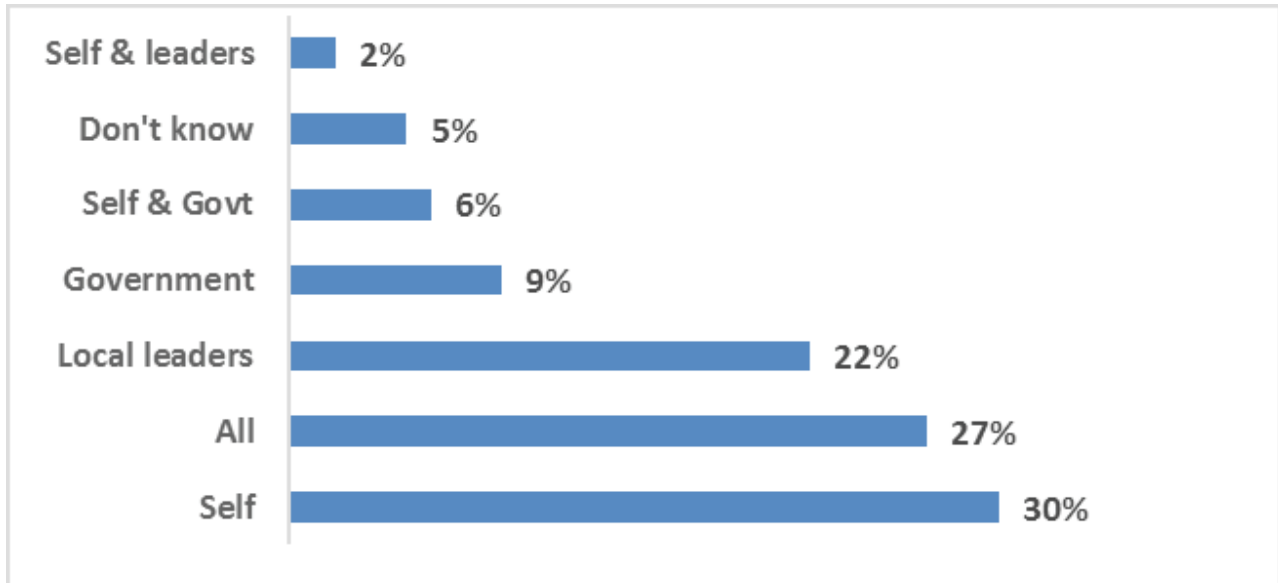


Figure 1: Responsibility bearer

Table 7: Association between SBA and other parameters

Sl.No.	Variables	‘p’ value	‘r’ value
1.	SBA awareness and hand hygiene	0.22	0.062330083
2.	SBA awareness and Sanitation practices	0.36	0.046898952
3.	SBA awareness and Methods of disposal of domestic waste	0.06	0.096876452
4.	SBA awareness and Safe and potable water availability	<0.001***	0.256004008

*p<0.05, **p<0.01, ***p<0.001

Table 7 indicates a positive correlation between awareness about Swach Bharat Abhiyan and awareness about significance of hand washing, sanitary practices, proper waste disposal and safe water consumption. But only safe water is observed

to be significantly associated with Swach Bharat Abhiyan awareness, while, other parameters, although, show positive correlation are observed to be not significantly associated it.

Discussion

In our study of sample size 384, the average age of the adult respondent of the house was (40.65 ± 17.54) among which majority were Females (63.80%), unemployed (53.38%), attended upto primary school (27.08%), living in joint families (63.80%), Muslims (58.33%), belonged to socioeconomic class VI (31.25%). In study by Mohd R et al. average age of the respondents was 35.4 (SD=11.9) and majority of them were females (68.1%).⁴

WATER: majority of the houses did not use any kind of method for treatment of water prior to drinking (66.92%) which was similar to study conducted by Joshi A et al, Mittal A et al, Mohd R et al and Bhattacharya M et al who reported that 73% , 78%, 55.6% and 72% respectively of the surveyed houses in their study population did not follow any methods of water treatment.^{1,3,4,6}

In our study only 28.39% of houses had knowledge regarding water borne diseases contrary to study by Joshi A et al which reported that 83% of the surveyed houses believed that drinking unclean water would cause gastrointestinal disturbances.¹ And a study by Swain P et al revealed that 53% of study population was unaware that diseases like diarrhoea can be water borne.²

SANITATION: About 75.6% of houses had own toilet while which was greater compared to study conducted by Joshi A et al¹ and only 1.82% of houses did not utilize any toilet facility and went for open air defecation contrary to study by Swain P et al wherein 46% were defecating in open area.² These differences may be due to different settings in the study area or population. In total 76.82% of toilets had water facility.

HYGIENE: about 27.08% perceived the significance of hand washing is to prevent disease which was very low compared the study at Joshi A et

al (75%).¹

Our study found that majority of houses utilized both soap and water for maintaining hand hygiene which was similar to findings of study at Sah et al (95.3%)⁷ and contrary to findings of study at Mohd R et al (48.7%).³

WASTE DISPOSAL: the study at Swain P et al showed that 83% of the respondents disposed the waste in open area, compared to our study where 87.5% disposed by help of vehicle collector of waste. The study at Swain P et al revealed that 71% of the respondent used open drainage for disposal of liquid waste contrary to findings of our study (3.39%).

SWACH BHARAT ABHIYAN: In our study 72.4% of houses were aware of SBA whereas in Swain P et al study 76% of the respondents were not aware about SBA.² In our study a strong and statistically significant association was found between awareness about SBA and safe and potable water availability. While other parameters showed positive association, it was not statistically significant.

Conclusion

From the study we can conclude that due to insufficient knowledge regarding the importance of clean drinking water majority of the population does not use any method to treat the water before consumption. Even though the government has provided assistance for construction of toilets, there has been no mechanism to ensure proper sewers connections and drainage outlets. Even after widespread propaganda of SBA, many people are still unaware of it and its importance, and increased understanding about health and hygiene and its importance might bring about significant improvement in knowledge, understanding and behavior of the people.

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