Original Article

Swachh Bharat Mission – An overview of its impact on knowledge and practices on sanitation, hygiene and waste disposal among general population in selected villages of Belagavi, Karnataka

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DOI: 10.47750/pnr.2022.13.S06.152

Abstract

Introduction & Objectives: Sanitation and hygiene practices are inevitably an important component of everyone's life. This is certainly a major public health concern in India and as a part of this, Swachh Bharat Mission (SBM), a national level cleanliness programme launched by Government of India in 2014 which has influenced the lifestyle and behaviour change among general population. The study aims to understand the impact of Swachh Bharat Mission (SBM) on knowledge and practices among general population.

Methods: A descriptive study was carried out with a sample size of 300 in Kangrali Village for a period of 3 months. Convenient Sampling technique was used to get the desired sample size. A semi structured interview questionnaire was used to analyse the knowledge and practices. Descriptive and inferential statistics was calculated and SPSS 21.0 version software was used for analysis of data.

Results: The study results revealed that 210 (70%) had access to household toilet, 114 (38%) still preferred open defecation, 272 (90.6%) cleaned house floor only with water. 231 (77%) had access to community bin. Interestingly, almost 298 (99.3%) people were aware about Swachh Bharat Mission. As far as knowledge was concerned, around 105 (35%) has good knowledge, 97 (32.3%) had average knowledge and 98 (32.6%) had poor knowledge regarding sanitation, hygiene, and waste disposal. On the other hand, majority 156 (52%) showed poor practices, 81 (27%) good practices and 63 (21%) with average practices related to sanitation, hygiene, and waste disposal. Age, gender, religion, type of family, occupation and socioeconomic status had significant association with knowledge.

Conclusion: The results showed that though people had awareness regarding Swachh Bharat Mission, their practices were not healthy as far as the responses were recorded. In order to overcome this, proper educational model or awareness programme is required to educate the people and make them understand the importance of Swachh Bharat Mission which is one of the Government's important and ambitious programme. The health of people is very important and to achieve optimal health, knowledge and practices related to hygiene and sanitation is of prime importance.

INTRODUCTION

Environmental sanitation aims to promote the health of community by providing clean environment which in turn helps to break the circle of disease. Various factors contribute for this that include hygiene status of people, resources that are available and the technologies which suffice the needs of the community, cultural and social factors. Another important component that decides the status of sanitation and hygiene was behaviour change among general population.1 When adequate and functional sanitation facilities are not utilized and complemented by appropriate types of sanitation behavior, communities become vulnerable to recurrence of water- and sanitation-related diseases.2

According to the India National Census, 2011 around 49.8% population practised open defecation for which Government focused more on sanitation measures in order to provide proper sanitation and hygiene for the entire population.3 Unsafe hygiene practices has many major health effects and the sewage water that is generated has become the important source of

water pollution in India. In addition to this, improper waste disposal has become another cause for poor sanitation and hygiene practices among general population.4

To achieve the universal sanitation coverage, the Prime Minister of India launched the Swachh Bharat Mission on 2nd October, 2014. The mission was implemented all over India aiming at eliminating open defecation specially in rural areas during the period of 2014 to 2019 through mass behavior change, constructing household toilets, community toilets. Behavior change has been a key factor of Swachh Bharat Mission which helps communities into adopting safe and sustainable sanitation practices though effective process of behavior change communication.5

According to statistics of 2018, around 89,369,285 latrines have been constructed amounting to 97% coverage. Similarly, 92,358,614 latrines were constructed in 2019, with a coverage of 98.9%.6 On the other hand, use of household toilets has become a great challenge. Research carried out in five Indian states with 3235 households and 22,787 respondents showed that over 40% of households having latrines had at least one member of the family still practicing open defecation. Moreover, it was found that people preferred privately built toilets compared to those built with government funds.7

Many other studies ruled out three major hygiene practices like safe faeces disposal, washing hands with soap and treatment and storage of drinking water were the most possible means of reducing water borne diseases.8 There is a very ardent need to find out approaches that can help increase and maintain the use of toilets. But, research in India also focuses on strategies that must address other associated factors with open defecation. The reason why rural Indian households prefer open defecation were poor quality of latrines, lack of access to water, larger family size, lack of habit for toilet use etc.9

There is a need to create an immediate awareness and practical measures in order to identify the factors making people to practice unhygienic conditions for which the underlying causes are strong beliefs in culture, no proper awareness about sanitation, misconceptions about cost as well as implementation challenges from the concerned authorities including active public participation.10

The Millennium Development Goal (MDG) number 7, for 2015, which aimed at reducing the percentage of people without proper access to safe drinking water and basic sanitation facilities by half, focusing mostly on the provision of infrastructure to meet the demands of communities in developing countries.11

Community involvement and active participation is very much important for the success of any health programme and campaign. In this regard, people must be made aware and sensitised about achieving the objectives and bring about desired change. Government of India has been actively promoting Swachh Bharat Abhiyan through mass media, awareness campaigns, involving in school and college curriculum. Considering this, the present study was conducted to understand the impact of Swachh Bharat Abhiyan on knowledge and practices on sanitation, hygiene and waste disposal among general population in selected villages of Belagavi.

Objectives

1. To assess the impact of Swachh Bharat Mission on knowledge and practices related to sanitation, hygiene, and waste disposal among general population of selected villages of Belagavi.

2. To find out association between knowledge and practice on Swachh Bharat Mission and selected demographic variables.

Materials and Methods

A descriptive study was conducted in two villages namely Kangrali and Bennalli which come under Belagavi rural from October 2021 to November 2021. 300 samples were selected randomly using convenient sampling technique, using power analysis formula $X = Z\alpha/22 * p*(1-p) / MOE2$, and $Z\alpha/2$ is the critical value of the Normal distribution at $\alpha/2$ (e.g., for a confidence level of 95%, α is 0.05 and the critical value is 1.96), MOE is the margin of error, p is the sample proportion, and N is the population size. Data was collected using semi structured interview questionnaire which contained sociodemographic information of the

study population and questions pertaining to knowledge and practices related to sanitation, hygiene, and waste disposal. Descriptive and inferential statistics was calculated and SPSS 21.0 version software was used for analysis of data.

Results

The results were described under the following components:

1. Distribution of study participants according to the sociodemographic variables

2. Distribution of study participants according to knowledge and practices related to sanitation, hygiene and waste disposal

3. Association between knowledge and practice on Swachh Bharat Mission and selected demographic variables

Table 1: Distribution of samples according to socio demographic variables

Socio demographic variables	Frequency	Percentage
Age		
20-30 years	**69**	**23%**
31-40 years	**103**	**34.3%**
41-50 years	**97**	**32.3%**
50 years & above	**31**	**10.3%**
Gender		
Male	**169**	**56.3%**
Female	**131**	**43.6%**
Religion		
Hindu	**242**	**80.6%**
Muslim	**39**	**13%**
Christian	**13**	**4.3%**
Other	**6**	**2%**
Type of family		
Joint Family	**267**	**89%**
Nuclear Family	**33**	**11%**
Occupation		
Self employed	**100**	**33.3%**
Private Job	**54**	**18%**
Government Job	**10**	**3.3%**
Unemployed	**21**	**7%**
Student	**59**	**19.6%**
Housewife	**56**	**18.6%**
Education		
Literate	**197**	**65.6%**
Illiterate	**103**	**34.3%**
Socioeconomic status		
Upper	**33**	**11%**
Upper middle	**114**	**38%**
Middle	**71**	**23.6%**
Lower middle	**51**	**17%**
Lower	**31**	**10.3%**

- 103 (34.3%) study participants belonged to age group of 31-40 years, 97 (32.3%) were between 41-50 years, 69 (23%) were 21-30 years and only 31 (10.3%) were 50 years and above.

- Majority 169 (56.3%) were males and 131 (43.6%) were females.

- Most of them 242 (80.6%) were Hindus, 39 (13%) were Muslim, followed by 13 (4.3%) Christians and only 6(2%) belonged to other religion.

- Similarly, 267 (89%) major chunk of study participants belonged to joint families and only 33 (11%) came from nuclear families.

- As far as occupation was concerned, 100 (33.3%) were self-employed, 59 (19.6%) were students, 56 (18.6%) were housewives, 54 (18%) were doing a private job, 21 (7%) were unemployed and only 10 (3.3%) were government employees.

- Almost 197 (65.6%) were literate and 103 (43.3%) were illiterates.

- Most 114 (38%) belonged to upper middle class, 71 (23.6%) were from middle class, 51 (17%) were lower middle class, 33 (11%) were upper class and only 31 (10.3%) were from lower class.

Table 2: Distribution of study participants according to practices related to sanitation and hygiene

Components	**Frequency**	**Percentage**
Practices related to toilet use / defecation		
Participants practicing open defecation	114	38%
Participants having access to household toilet	210	70%
Participants using soap and water to wash hands	227	75.6%
Participants washing hands with water only	69	23%
Participants using mud and water to wash hands	4	1.3%
Practices related to water use / consumption		
Participants using water directly for drinking	240	80%
Participants using filter at home for drinking	44	14.6%
Participants using boiled water for drinking	16	5.3%
Practices related to cleaning of houses		
Participants cleaning floor of house with only water	272	90.6%
Participants cleaning floor of house with phenyl / bactericidal liquids	28	9.3%
Practices related to personal hygiene		
Participants washing hands before having food	201	67%
Participants wearing same clothes consecutively for 3 days	67	22.3%
Participants taking bath with soap	213	71%

Table 2 depicts information about practices related to sanitation and hygiene. Practices related to toilet use showed that majority 227 (75.6%) used soap and water to wash hands, 210 (70%) had access to household toilet, 114 (38%) of them still preferred open defecation, 69 (23%) washed hands only with water and only 4 (1.3%) used mud and water to wash hands.

Practices related to water consumption showed that majority 240 (80%) used water directly for drinking, whereas 44 (14.6%) had filter at home and only 16 (5.3%) used boiled water for drinking.

Practices related to cleaning of houses showed that majority 272 (90.6%) of them cleaned floor only with water whereas only 28 (9.3%) used phenyl / bactericidal liquids for cleaning floor.

Practices related to personal hygiene showed that most of them 213 (71%) had bath using soap, 201 (67%) washed hands before having food and only 67 (22.3%) preferred wearing same clothes consecutively for 3 days.

Table 3: Distribution of study participants according to practices related to waste disposal

Components	**Frequency**	**Percentage**
Practices related to waste disposal		
Access to Community bin	231	77%
In open space	66	22%
In open drainage	45	15%
Practices related to separating solid and liquid waste before disposal	15	5%
Aware about colour coding practices for different bins	40	13.3%

Table 3 depicts practices related to waste disposal. Here, almost 231 (77%) had access to community bin in the surroundings, 66 (22%) throwed waste in open space, 45 (15%) said they disposed in the open drainage, only 15 (5%) said they practised separating solid and liquid waste before disposal and 40 (13.3%)

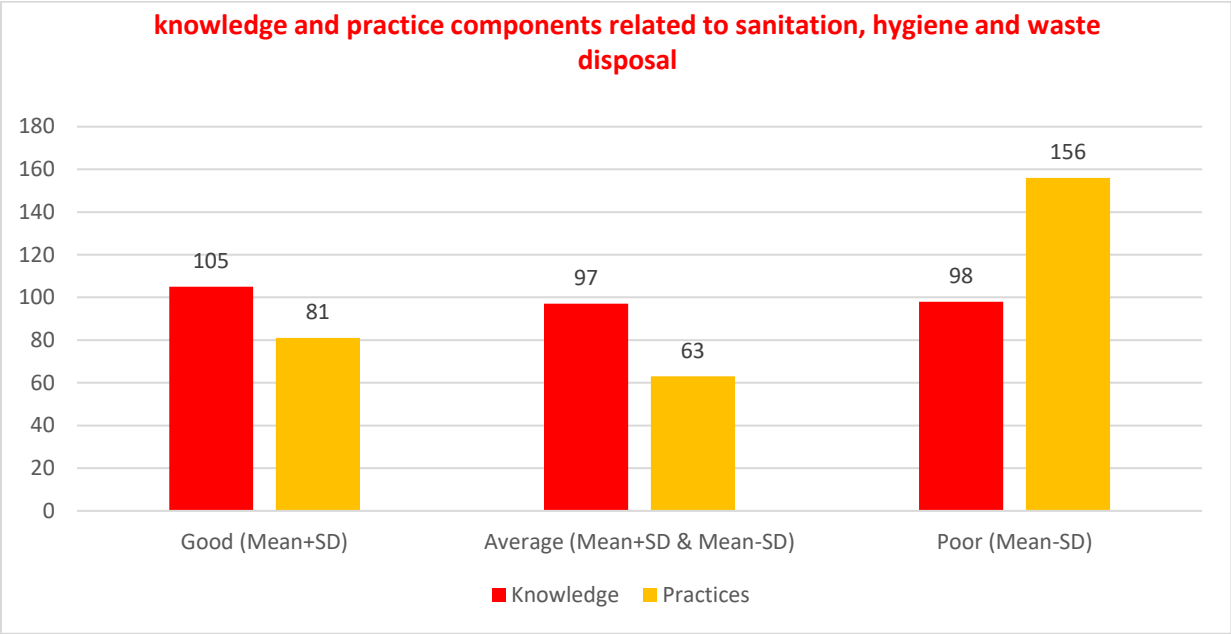
Table 4: Distribution of study participants according to knowledge regarding Swachh Bharat Mission

Components	**Frequency**	**Percentage**
Knowledge / Awareness related to Swachh Bharat Mission		
Participants aware / heard about Swachh Bharat Mission	298	99.3%
Participants aware of diseases spread due to open defecation	112	37.3%
Participants aware of water borne diseases	89	29.6%
Participants aware of communicable diseases spreading due to improper hygiene	103	34.3%

Table 4 shows information related to knowledge of Swachh Bharat Mission. Majority 298 (99.3%) were aware or heard about Swachh Bharat Mission. 112 (37.3%) said they were aware of diseases spread due to open defecation, 103 (34.3%) were aware of communicable diseases spread due to improper hygiene and 89 (29.6%) said they were aware of water borne diseases.

Table 5: Distribution of study participants according to knowledge and practice components related to sanitation, hygiene and waste disposal

Components	**Good (Mean+SD)**	**Average (Mean+SD & Mean-SD)**	**Poor (Mean-SD)**
Knowledge	105 (35%)	97 (32.3%)	98 (32.6%)
Practices	81 (27%)	63 (21%)	156 (52%)



Column graph showing distribution of study participants based on the knowledge and practice components related to sanitation, hygiene and waste disposal

Table 5 and the column graph depict information regarding distribution of study participants based on the knowledge and practice components related to sanitation, hygiene and waste disposal. As far as knowledge was concerned, around 105 (35%) has good knowledge, 97 (32.3%) had average knowledge and 98 (32.6%) had poor knowledge regarding sanitation, hygiene and waste disposal. On the other hand, majority 156 (52%) showed poor practices, 81 (27%) good practices and 63 (21%) with average practices related to sanitation, hygiene and waste disposal.

Table 6: Association between knowledge and practice on Swachh Bharat Mission and selected demographic variables

Sociodemographic variables	**Knowledge Component**					**Practice Component**				
	Good	**Average**	**Poor**	**Chi square**	**P**	**Good**	**Average**	**Poor**	**Chi square**	**P**
Age										
20-30 years	17	14	11	26.7	0.000162*	21	11	31	19.03	0.004*
31-40 years	36	55	39			19	21	59		
41-50 years	27	26	40			26	29	38		
50 years & above	20	2	8			15	2	28		
Gender										
Male	76	41	51	19.4	0.000059*	58	46	98	3.04	0.218
Female	29	56	47			23	17	58		
Religion										

Hindu	78	52	41	91.5	0.00001*	41	27	87	17.13	0.0088*
Muslim	11	24	24			23	14	24		
Christian	4	86	19			14	18	18		
Other	12	11	14			3	4	17		
Type of family										
Joint Family	84	66	59	9.57	0.0083*	62	46	121	0.51	0.77
Nuclear Family	21	31	39			19	17	35		
Occupation										
Self employed	46	27	18	36.2	0.000076*	21	17	26	36.6	0.000065*
Private Job	11	13	9			10	9	16		
Government Job	7	6	7			2	3	5		
Unemployed	5	2	11			4	1	3		
Student	12	27	14			23	21	21		
Housewife	24	19	39			21	12	85		
Education										
Literate	38	29	40	2.55	0.27	55	41	67	17.09	0.0001*
Illiterate	67	68	58			26	22	89		
Socioeconomic status										
Upper	11	9	7	36.2	0.000016*	15	4	13	43.4	0.00001*
Upper middle	14	11	5			12	7	4		
Middle	28	51	59			28	11	29		
Lower middle	40	19	12			17	29	59		
Lower	12	7	15			9	12	51		

- Significance of <0.05 at 95% Confidence Interval
- *p<0.05

Table 6 shows association between knowledge and practice on Swachh Bharat Mission and selected demographic variables. Age of the study participants had significant association with knowledge and practice components with $\chi2$ value of 26.7 (p=0.00016) and 19.03 (p=0.004) respectively. Gender showed significant association with knowledge $\chi2$ being 19.4 (p=0.000059), whereas practice was not significant with $\chi2$ value of 3.04 (p=0.218). Religion was significantly associated with knowledge and practice component $\chi2$ being 91.5 (p=0.00001) and 17.13 (p=0.0088) respectively. Type of family impacted knowledge which was significant with $\chi2$ value of 9.57 (p=0.0083) and practice was not significant $\chi2$ 0.51 (p=0.77). Significant association was found with occupation in knowledge and practice component with $\chi2$ value of 36.2 (p=0.000076) and 36.6 (p=0.000065) respectively. Surprisingly education status was not significant with knowledge $\chi2$ of 2.55 (p=0.27), whereas practice was significantly associated $\chi2$ of 17.09 (p=0.0001). Significant association was found with socioeconomic status in knowledge and practice component with $\chi2$ values of 36.2 (p=0.000016) and 43.4 (0.00001) respectively.

Discussion

The present study showed that majority 169 (56.3%) of study participants were males, 242 (80.6%) were Hindus, Similar findings were found in a study conducted by Anuradha et al. where majority 81.1% were males and 98.2% were Hindus.12 267 (89%) belonged to joint families. These findings were in line with a study conducted by Jeratagi et al. where 99% of them were from joint families.13 Almost 197 (65.6%) were literates, and similar findings were found in a study conducted by Kishore et al. where 62.5% were literates.14 Around 103 (34.3%) were from the age group of 31-40 years and this coincided with a study conducted by Yoada et al. where 40% of them were between 31-40 years.15

Around 114 (38%) were practicing open defecation and this was nearly half of the prevalence in a study conducted by Kuberan et al. with 17% practicing open defecation.16 Around 210 (70%) of the study participants had access to household toilet which was similar around 76% with a study conducted by Anuradha et al.12 Majority 227 (75.6%) washed hands with soap and water after defecation, this was coinciding with a study conducted by Sah et al.17 with 95% prevalence. Around 240 (80%) used water directly for drinking which was similar to a study conducted by Joshi et al.18 where the prevalence was around 75%. Around 231 (77%) were having access to community bins, which was coinciding with a study conducted by Yoada et al.15

Almost 298 (99.3%) were aware about the Swachh Bharat Mission which was almost same 93.62% in a study conducted by Karen et al.19 Age, gender, religion, type of family, occupation and socioeconomic status had significant association with knowledge.

Conclusion

The present study aimed to understand the impact of Swachh Bharat Mission on knowledge and practices on sanitation, hygiene and waste disposal among general population. The health of people is very important and to achieve optimal health, knowledge and practices related to hygiene and sanitation is of prime importance. The results showed that though people had awareness regarding Swachh Bharat Mission, their practices were not healthy as far as the responses were recorded. In order to overcome this, proper educational model or awareness programme is required to educate the people and make them understand the importance of Swachh Bharat Mission which is one of the Government's important and ambitious programme. The health of people is very important and to achieve optimal health, knowledge and practices related to hygiene and sanitation is of prime importance.

REFERENCES

1. Pandve HT. Environmental sanitation: An ignored issue in India. Indian J Occup Environ Med. 2008;12:40. [PubMed] [Google Scholar]
2. Chariar VM, Sakthivel RS (2011) Ecological sanitation practitioner's handbook. New Delhi: UNICEF.
3. Puri District: Census 2011-2019 data. https://www.census2011.co.in/census/ district/411-puri.html. Accessed 4 Mar 2019.
4. Available from: http://www.swachhbharaturban.in: 8080/sbm/ content/writereaddata/SBM_Guideline.pdf. [Last accessed on 2018 Jan 23].
5. Available from http://swachhbharatmission.gov.in/SBMCMS/study-survey.htm
6. Ministry of Drinking Water and Sanitation. Swachh Bharat Mission- Gramin Dashboard [updated 3 December 2018. Available from: http://sbm.gov.in.
7. Coffey D, Gupta A, Hathi P, Khurana N, Spears D, Srivastav N, et al. Revealed preference for open defecation. Econ Polit Wkly. 2014;49(38):43
8. World Health Organization (2016) Water, sanitation, and hygiene. UNICEF
9. Gupta AN, Khalid D, Desphande P, Hathi A, Kapur N, Srivastav S, Vyas D. Spears and D. Coffey. Changes in Open Defecation in Rural North India: 2019;2014-2018
10. Shetak RS (2011) Television and development communication in India: A Critical Appraisal. Global Media Journal 2(2): 1-26.
11. WHO/UNICEF. Diarrhea: Why Children Are Still Dying and What can be Done. Available from: http://Whqlibdoc.who.int/ publications/2009/9789241598415_eng.pdf. [Last accessed on 2019 Mar 06]
12. Anuradha R, Dutta R, Raja JD, Lawrence D, Timsi J, Sivaprakasam P. Role of community in Swachh Bharat mission. Their knowledge, attitude, and practices of sanitary latrine usage in Rural Areas, Tamil Nadu. Indian J Community Med 2017; 42:107 10
13. Jeratagi S, Kumar Y, Mallapur MD. Awareness about sanitary toilets in a rural area of north Karnataka, India: A cross sectional study. Int J Community Med Public Health 2017; 4:363 9.
14. Kishore YJ, Naidu NK, Sreeharshika D, Harikrishna B, Malhotra V. Study to assess knowledge, perception and practices regarding Swacch Bharat Abhiyan among rural people of Nalgonda district in Telangana state. Int J Community Med Public Health 2018; 5:3399 405
15. Yoada RM, Chirawurah D, Adongo PB. Domestic waste disposal practice and perceptions of private sector waste management in urban Accra. BMC Public Health 2014; 14:697
16. Kuberan A, Singh AK, Kasav JB, Prasad S, Surapaneni KM, Upadhyay V, et al. Water and sanitation hygiene knowledge, attitude, and practices among household members living in rural setting of India. J Nat Sci Biol Med 2015;6: S69 74.

17. Sah RB, Bhattarai S, Baral DD, Pokharel PK (2015) Knowledge and practice towards hygiene and sanitation amongst residents of Dhankuta municipality. Health Renaissance 12: 44-48.
18. Joshi A, Prasad S, Kasav JB, Segan M, Singh AK (2014) Water and sanitation hygiene knowledge attitude practice in urban slum settings. Glob J Health Sci 6: 1-23.
19. Karan RK. Report on Impact Assessment of Swachh Bharat Abhiyan Project Implemented by Aarogya Foundation India in Blocks of Jharkhand State. 2015: 16-17.