

Original Research Article

Swach Bharat Abhiyan: insights from students of a central university

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ABSTRACT

Background: Sanitation has been identified as one of the important determinants of the health and hygiene since ages. Sanitation and hygiene are critical to health, survival and development. Hygiene causes a global health challenge especially in the developing world. Considering the importance of hygiene, a cleanliness drive has been started in India i.e., Swach Bharat Abhiyan (SBA). The study was conducted to assess knowledge, perception and practices regarding SBA and to know the perception between medical and non-medical students towards clean India.

Method: A cross sectional study done for a period of 5 months. A self-explanatory semi-structured questionnaire were used in this study with close ended questions. Sample size was taken as 416.

Results: 98.1% of students were aware of SBA. Only 20.9% were agreed over building infrastructure like public toilets etc. which can help to achieve clean India while all others were disagreed. 65.1% people said that there is no decrease of vector borne disease while 34.9% people said it is. The perception regarding disposal of solid waste is mainly in the community bins by the students.

Conclusions: The current study reflects that majority of the population were aware of SBA and its objective and the amount spent in SBA and the students of central university had shown positive attitudes and perception towards it to make India clean. SBA could have been much more impactful if it was clubbed with issuance of certain ordinance.

Keywords: SBA, Cleanliness, Health, Hygiene, Perception, Sanitation

INTRODUCTION

The word “hygiene” is defined as “conditions or practices conducive to maintaining health and preventing disease, especially through cleanliness”.¹ Hygiene can be achieved through cleanliness and not vice versa. It can be practiced at personal, domestic, and community levels.² Without hygiene, the lives of millions of people are at risk. All disease control interventions to a greater extent rely on hygiene to achieve their goal.

Sanitation has been identified as one of the important determinants of the health and hygiene since ages. As per the report of environmental performance index 2016, 2.4

billion people across the world do not have access to basic sanitation. Addressing sanitation issue is the need of the hour which not only helps in reducing the burden of the communicable diseases but also provides the scope for gross domestic product (GDP) growth, reduction in health care costs and a source of employment.³ Sanitation and hygiene is critical to health, survival and development. Hygiene causes a global health challenge especially in the developing world. These practices affect the perception of the individual and influence their selection of healthcare facilities. As reported by Hoornweg and Bhada-Tata (2012), world cities are producing about 1.3 billion tons of solid waste annually and this is projected to reach 2.2 billion by 2025.⁴ In

recognition of this, improved sanitation through appropriate waste management is being prioritized in major Global developmental agendas including the sustainable development goals (SDG). Despite its awareness, knowledge about segregation and the long-lasting side effects of wastes is not considered to be a major concern. Municipal solid waste collection, treatment and/or disposal remains a challenge to many cities.^{5,6} The developing world continues to struggle with basic collection and disposal issues.

The pathetic state of sanitation index in India has put the country behind many countries. To overcome the sanitation related challenges in any country and to ensure the success of health-related campaigns, the participation of community is very much essential. Considering the importance of hygiene, a cleanliness drive has been started in India i.e., Swachh Bharat Abhiyan. SBA is a national campaign which was started on October 2nd 2014.³ Their major goals included elimination of open defecation municipal solid waste management, healthy sanitation practices, generate awareness etc. by 2019. The central focus being building toilet to eliminate open defaecation.⁶

Cleanliness being an integral part of health and hygiene needs to be maintained at an individual level and also of the surrounding. Issues related to cleanliness remain a major challenge in India. Cleanliness and Hygiene promotion practices had always been neglected in purview of public health care services, demanding for deployment of strategies for its improvement.² Therefore, it becomes important to take the view of the society who is responsible for each and every act they do which can take their country to a significantly different level. Considering this view, this study has been undertaken among the students of central university.

As the implementation of hygiene faces more challenges due to the difference in attitude, beliefs and lifestyles of participants; knowledge and perception towards SBA was assessed among the university students. A younger group was chosen as they are the workforce and backbone of the country. Assessing their viewpoint might give a brief idea about the understanding of SBA and their contribution in this cleanliness drive. Their view might also give an idea about the effectiveness of SBA mission and the changes which can be considered to complete the SBA goals. Also, to know the people's feedback whether it is holding its value in regards of its goal of 2019 as large amount of expenditure was made in SBA.

With this background, this study was undertaken to assess knowledge, perception and practices regarding SBA. To know the perception to draw comparison between medical and non-medical students towards clean India and to compare them and to determine whether SBA plays its role in improving the attitude of people towards cleanliness.

METHODS

This study was conducted at Jawaharlal Nehru medical college, Aligarh Muslim university, Aligarh, U.P. India. It was a cross sectional study done for a period of 5 months (15th September 2018 to 15th February 2019). Self-explanatory semi-structured questionnaire were used in this study with close ended questions in English language.

Part 1 of the study contains student particulars i.e., name, age, sex, qualification, college and contact address. The name of students was kept confidential. Part 2 of the paper had three divisions i.e., knowledge, attitude and practices regarding the programme. This included 10, 14 and 7 questions of knowledge, attitude and practices respectively. We had taken the questions from the previous study Kishore et al. The pilot study was conducted on thirty students and the questions were modified accordingly. The time allotted to fill the questionnaire was about 20 minutes.

The enrolled students of Aligarh Muslim university, belonging to medical and non-medical fields in the age group of 17 to 30 years were selected according to their availability in the University. The medical students from MBBS, BDS, BUMS and non-medical undergraduate and post graduate students from the faculty of engineering, science, commerce and arts were selected to fill the questionnaire. The consent was taken from the available students present in the classes and hostels and then the students were randomly selected and the proforma were distributed amongst them (and explained according to the need). The students were asked to fill up the proforma to assess their knowledge, attitude and practice the complete filled up proformas were included in the study. The incomplete performs, the students who were not aware of SBA were excluded from the study. The pilot study which was conducted among 30 students were not included in the survey. The sample size was 416.

Taking the prevalence, the sample size (N) was taken as 416 where:³ $p=55\%$, $q=45\%$, $l=5-10\%$ at 95% confidence level. $N=4pq/l^2$

Equal proportion of medicos and non-medicos i.e., 208 students from both groups participated in the study. The data was entered in Microsoft excel and analyzed in SPSS statistical software version 20.0. The value of $p<0.05$ was considered as statistically significant.

The participation was strictly voluntarily and was dependent on oral consent by the participants. The respondents were informed of the study and the data was strictly kept confidential.

RESULTS

The students were taken in the age group of 17 to 30 years (median age 21 years). Out of 416 participants, 201

(48.5%) were male while 215 (51.7%) were female. The distribution of people who took the part to make the India clean, 194 (46.63%) were medicos while 190 (45.67%) were non-medicos.

Out of 416 participants (98.1%) were aware of SBA while others remain unaware (Table 1). The survey analysis showed that media had a major role whether they are medico or non-medico in increasing awareness regarding SBA as shown in Figure 1, in comparison to awareness created due to newspaper and people. Knowledge regarding source of information about SBA (through newspaper, media, and paper) was found to be significantly different ($p < 0.05$) between medicos and non-medicos as shown in the Table 1. This shows the significance of medical education towards cleanliness and hygiene.

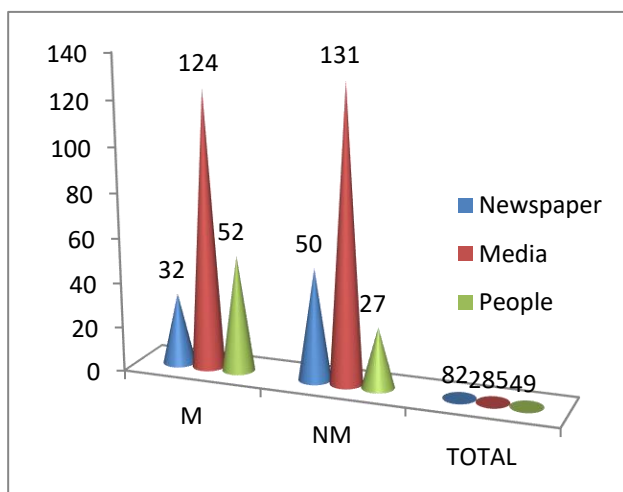


Figure 1: Sources of awareness among the students regarding SBA.

The difference in knowledge about the amount spent in SBA between both the group were found to be significant ($p < 0.05$). Hence medical education plays an important role in creating awareness towards making of any policies and programmers (its pros and cons).

The study reflects that majority of the medicos felt that SBA required in India and this difference was found to be statistically significant.

The difference of opinion about SBA responsibilities which has been shifted from actual worker to the people were significantly different ($p < 0.05$) and 220 (52.9%) of the students were agreed while 70 (16.8%) were disagreed.

The believe that only building infrastructure like public toilets etc. can help to achieve clean India were only 20.9% while all others were disagreed over this.

The knowledge regarding improvement of public toilet 175 (42.5%) students said yes while 137 (32.9%) of them said no.

While regarding cleanliness which has increased after launch of SBA 181 (43.5%) people were agreed, 125 (30.1%) were disagreed while others remained neutral as shown in Figure 3. This means government efforts to provide sanitation leaves more to be desired (Table 1).

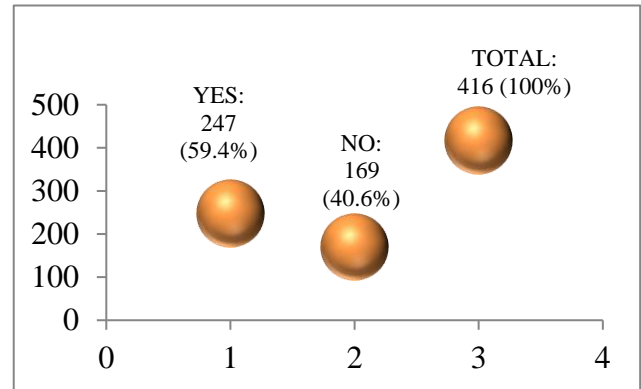


Figure 2: Awareness of objectives among students regarding SBA.

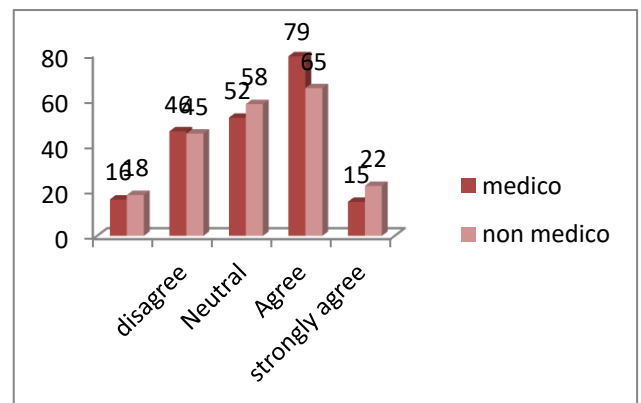


Figure 3: Opinion of the students regarding the cleanliness after the launch of SBA.

While judging the attitude of participants (as described in Table 2), 240 (57.7%) of the agreed that SBA is for political benefit while 176 (42.35%) disagreed over this. Total 241 (58%) people felt that participation of celebrity is only for publicly while 78 (18.7%) participants disagreed. 271 (65.1%) people said that there is no decrease of vector borne disease while 145 (34.9%) people said it is.

Poor municipal solid waste management in developing countries is epitomized in inappropriate dump sites, which are often located close to residential facilities. This proximity to residential spaces has been associated with disease outbreaks including cholera, acute respiratory infections and malaria (WHO, 2013).

The present study stated that 346 (83.2%) students agreed that it is useful programme, 25 (6%) disagreed over this while others remained neutral. Figure 4 and 5 describes the perception regarding improvement of the city after SBA and perception of medical and non-medical students regarding usefulness of SBA respectively (Table 2).

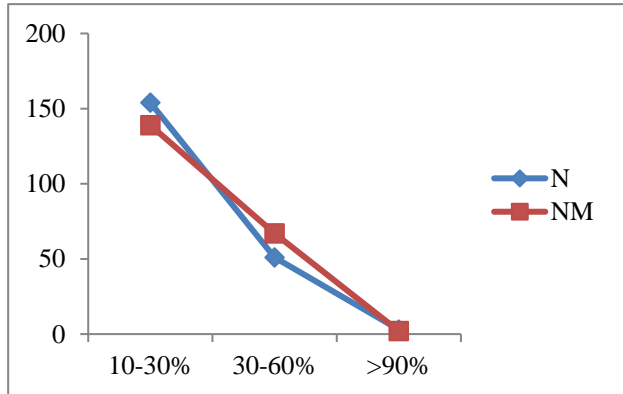


Figure 4: Perception regarding improvement of the city after SBA among medicos and non-medicos.

Table 3 contains some questions which reflects the student's behaviour and practices. Regarding the part played at individual level to make India clean, 194 (47.08%) medicos 190 (46.11%) non-medicos said yes. Students perceived that behavior change communication is very important to bring change in community whether one belongs to medical field or non-medical field. Hence the difference in opinion among the two groups were same. The difference of opinion amongst the two groups regarding SBA was found to be significant.

Treating your society as your own property and not dumping the waste at a corner can be the first step in making India clean. Majority of the students 366 (88%) believe in disposing the solid wastes in community bins

while 50 (36.6%) used to dispose in open (Table 3). This shows the active participation at individual level about clean India is still lacking. While if you talk about to volunteer oneself towards clean India majority said no. The difference of opinion regarding SBA required in India amongst the two groups was found to be significant. 346 (83.2%) were agreed while 25 (6%) were disagreed over this. If talking about the usefulness of this programme in a country, the reviews from both the group was also found to be significant.

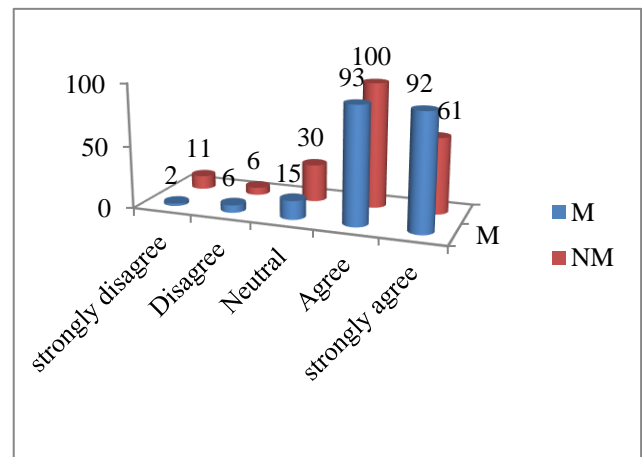


Figure 5: Perception of medical and non-medical students regarding usefulness of SBA.

In the current study about 92.3% played their part to make India clean, 83.7% encouraged other individuals to participate while only 32% volunteer themselves to clean the streets. The distribution amongst the two groups i.e., medico and non-medicos, males and females remain the same. The perception regarding disposal of solid waste is mainly in the community bins by the students which show that they are responsible and taking a step forward for cleanliness (Table 3).

Table 1: The knowledge among medical and non-medical students regarding SBA.

Question assessing knowledge	No. of medical students	No. of non-medical students	Total students (%)	Chi square value	P value
How did you come to know about SBA?					
Newspaper	32	50	82 (19.7)	6.318	0.042
Media	124	131	285 (68.5)		
People	52	27	49 (11.8)		
Are you aware of SBA?					
Yes	205	203	408 (98.1)	0.51	0.475
No	3	5	8 (1.9)		
Are you aware of the amount spent on SBA?					
Yes	35	64	99 (23.8)	11.148	0.001
No	173	144	317 (76.2)		
Are you aware of objectives to achieve clean India by 2019?					
Yes	115	132	247 (59.4)	2.880	0.90
No	93	76	169 (40.6)		
The cleanliness has increased after launch of SBA?					
Strongly disagree	16	18	125 (30.1)	3.141	0.534
Disagree	46	45			

Continued.

Question assessing knowledge	No. of medical students	No. of non-medical students	Total students (%)	Chi square value	P value
Neutral	52	58	110 (26.4)		
Agree	79	65	181 (43.5)		
Strongly agree	15	22			
Is your local municipal driving civic sense awareness and initiative on the ground?					
Strongly disagree	25	24	131 (31.5)	3.344	0.502
Disagree	44	38			
Neutral	68	83	151(36.4)		
Agree	59	56	134 (32.2)		
strongly agree	12	7			
Have the availability of public toilet in your city improved after SBA?					
Strongly disagree	26	24	137 (32.9)	3.955	0.412
Disagree	40	47			
Neutral	53	51	104 (25)		
Agree	80	69	175 (42.1)		
Strongly agree	9	17			
Have your municipal become more responsive after SBA?					
Strongly disagree	31	30	166 (39.9)	0.466	0.977
Disagree	55	50			
Neutral	51	55	106 (25.5)		
Agree	62	63	144 (34.6)		
Strongly agree	9	10			
Overall, how much % is your city improved (%)?					
10-30	154	139	293 (70.4)	3.137	0.208
30-60	51	67	118 (28.4)		
>90	3	2	5 (1.2)		
Have vector borne disease decreased after SBA?					
Yes	79	66	145 (34.9)	1.789	0.181
No	129	142	271 (65.1)		

Table 2: The attitude among the medical and non-medical students regarding SBA.

Question assessing attitude	Medical students	Non-medical students	Total students (%)	Chi square value	P value
Should all people participate?					
Yes	176	166	342 (82.2)	1.644	0.200
No	32	42	74 (17.8)		
Do you think SBA is propagated for political benefits?					
Yes	116	124	240 (57.7)	0.630	0.427
No	92	84	176 (42.3)		
In your opinion, would the political idea to reap benefit for the nation?					
Yes	148	138	286 (68.8)	1.119	0.290
No	60	70	130 (31.3)		
Do you believe that only building infrastructure like public toilets etc. can help to achieve clean India?					
Yes	36	51	87 (20.9)	3.270	0.071
No	172	157	329 (79.1)		
What according to you needs to be done to make campaign more effective?					
Contribution at public level	6	11	17 (4.1)	4.654	0.325
Proper disposal of industrial wastes	1	3	4 (1)		
Ban on plastic bag use	1	4	5 (1.2)		
Improvement of sewage system	8	9	17 (4.1)		
All	192	181	373 (89.7)		
I am willing to contribute to SBA					
Strongly disagree	9	8	29 (7)	8.732	0.068
Disagree	1	11			

Continued.

Question assessing attitude	Medical students	Non-medical students	Total students (%)	Chi square value	P value
Neutral	32	32	64 (15.4)		
Agree	102	99	323 (77.6)		
Strongly agree	64	58			
I feel that SBA required in India					
Strongly disagree	14	8	64 (15.4)	12.822	0.012
Disagree	23	19			
Neutral	7	20	27 (6.5)		
Agree	34	50	325 (78.1)		
Strongly agree	130	111			
I feel that participation of celebrities will increase my participation					
Strongly disagree	38	25	158 (37.9)	7.981	0.092
Disagree	48	47			
Neutral	56	71	127 (30.5)		
Agree	33	43	131 (31.5)		
Strongly agree	33	22			
I feel participation of celebrities is only for publicly					
Strongly disagree	8	13	78 (18.7)	7.051	0.133
Disagree	30	27			
Neutral	39	58	97 (23.3)		
Agree	83	67	241 (58)		
Strongly agree	48	43			
I feel that municipal corporation of Aligarh is actively participating in SBA					
Strongly disagree	41	32	173 (41.5)	7.544	0.110
Disagree	59	41			
Neutral	50	60	110 (26.4)		
Agree	45	60	133 (31.9)		
Strongly agree	13	15			
I think in the name of SBA responsibilities have shifted from actual worker to people to carry it forward					
Strongly disagree	2	11	70 (16.8)	13.049	0.011
Disagree	38	19			
Neutral	63	63	126 (30.3)		
Agree	83	92	220 (52.9)		
Strongly agree	22	23			
I think participation of MLA and MP will increase contribution of people towards it					
Strongly disagree	36	14	84 (20.2)	4.944	0.293
Disagree	48	28			
Neutral	82	42	82 (19.7)		
Agree	180	94	250 (60.1)		
Strongly agree	70	30			
I think SBA is media attraction look for leaders					
Strongly disagree	10	7	60 (14.4)	3.699	0.448
Disagree	23	20			
Neutral	47	63	110 (26.4)		
Agree	84	74	246 (59.2)		
Strongly agree	44	44			
Is it useful programme for public health?					
Strongly disagree	2	11	25 (6)	17.766	0.001
Disagree	6	6			
Neutral	15	30	45 (10.8)		
Agree	93	100	346 (83.2)		
Strongly agree	92	61			

Table 3: The practice among medical and non-medical students regarding SBA.

Question assessing practice	Medical students	Non-medical students	Total students (%)	Chi square value	P value
Do you yourself clean your toilet?					
Y	78	83	161 (38.7)	0.253	0.615
N	130	125	255 (61.3)		
How many times toilet get cleaned up per week?					
Once	19	17	36 (8.7)	2.051	0.562
Twice	43	35	78 (18.8)		
Thrice	25	33	58 (13.9)		
>Thrice	121	123	244 (58.7)		
At college level do you have separate toilets for boys and girls?					
Y	201	202	403 (96.9)	0.079	0.778
N	7	6	13 (3.1)		
Where you dispose your solid wastes?					
Open	31	19	50 (36.6)	3.273	0.070
Community bins	177	189	366 (88)		
Do you play your part to make India clean?					
Y	194	190	384 (92.3)	0.542	0.462
N	14	18	32 (7.7)		
Do you encourage other people to make India clean?					
Y	172	176	348 (83.7)	0.281	0.596
N	36	32	68 (16.3)		
Have you volunteer during time to clean your own streets?					
Y	59	74	133 (32)	2.487	0.115
N	149	134	283 (68)		

DISCUSSION

In the current study 201 were males while 215 were females. Most of them falls between 19 to 25 years. In the Kishore et al study, most (29.6%) of the subjects falls under 21-30 years age category and were females.³ In the similar study done by Karan et al in Jharkhand, it was observed that majority (39%) of the study subjects falls into 21-30 years age category and most (76%) of the subjects were females. In the current study young individuals were targeted.

Knowledge regarding SBA

In our study 408 students were aware of SBA. That seems to be a very good proportion and highest among all the studies which were done previously. This can be due to awareness which is being spread and the initiatives being taken by the government and non-government organizations through mass media, newspaper etc. Secondly, the students are more active and aware to spread the change to make India clean. In the Kishore et al study it was found that 204 out of 328 participants have heard about SBA.³ Swain et al study which was conducted in Uttar Pradesh and Madhya Pradesh in the year 2015 stated that only 24% of the subjects were aware of SBA which was shockingly low.⁹ In contrast it was found that 93.62% of the participants were aware of SBA in Karan et al study. In the current study about 247 were aware of the objectives of SBA while 169 were unaware. In the study by Kishore et al (87.7%) of the subject were

aware of the objective of SBA regarding disposal of solid wastes only whereas this is only 62.3% according to Karan et al.

271 people said that there is no decrease of vector borne disease while 145 people said it played its impact.

The success of any cleanliness programme in reducing epidemic outbreak is equally important. Epidemic particular like diarrhea, dysentery, cholera, hepatitis etc. are considered by the public health experts to be the most important determinants of cleanliness of the environment and its impact on the health of the community.⁷ Cleanliness drive should be impactful enough to decrease the number of epidemics reported within the community. Hence any success with the SBA should have made some dent in the outbreak of these epidemics but the current data is against it. Though it remained insignificant.

Attitude towards SBA

The present study suggested that about 346 students agreed that SBA is a useful programme for the community. Kishore et al study found that 85.78% of the subjects felt the same. Pradhan study stated that 76.08% of the subjects agreed that SBA helps in the development of the country and also 54.34% agreed that SBA has brought changes on the ground level.¹⁰ In another study conducted by Utpat et al in Pune, it was found that 80.43% subjects thought that there is need of SBA and

72.82% felt that SBA is effective.¹¹ These findings reflect the positive perception of the community towards SBA.

Current study revealed that 342 of the study subjects thought that all the people must actively participate in SBA activities. 77.45% according to Kishore et al and 91.30% of the subjects wanted to participate in SBA according to Utpat et al study.¹¹

In the present study 240 students agreed that SBA is for political benefit. Interestingly 22.05% felt that political benefits are other side of the coin for propagating SBA according to Kishore et al If the political benefit is there definitely it will add benefits to the better improvement of the city.⁷ One should keep in mind that the primarily focus should be implementation of the programme rather than its promotion and events of the scheme.

Practice regarding SBA

In the present study 366 of the students using the community bins that remains the large number and showed the positive perception of students towards cleanliness.

In the Kishore et al study it was found that only 34.75% of the subjects were disposing solid waste in community bins.³ Yoda et al in their study reported that 61% of the subjects were utilizing community bins.¹² Other studies showed the low percentage for using community bins. This can be due to illiteracy and lack of awareness amongst the people. Two of the deploying tools which can be used positively are mass media and interpersonal communications.

In the current study about 384 played their part to make India clean, 348 encouraged other individuals to participate while only 133 volunteer themselves to clean the streets. The distribution amongst the two groups i.e., medico and non-medicos, males and females remain the same.

In Kishore et al study, only 25.98% of the subjects have participated in SBA activities, however 59.31% of the participants would like to motivate people to participate in SBA activities.³ Contrast findings were observed in Karan et al report which showed that 94% subjects have participated in SBA.⁸ This shows that the knowledge is increasing among the people but the practice is still lacking. More steps and restricted laws should be made in order to reach the goal to make the country clean. It is the fundamental duty of every citizen to protect and improve the natural environment (article 51 A (g)) of constitution of India.

About whether municipal corporation is active only 133 said yes while 173 said denied of them being active. Sustainable and active participation of public and government and non-government organization in the national cleanliness drive can help proper development of

our cities, towns, and villages. This is possible only if adequate steps are taken to create awareness, impart education and develop a sense of responsibility towards our surroundings.

Often the government's helplessness come to the fore on the cleanliness front and the disparity between policy and practice in waste management and disposal can be due to fundamental reasons i.e., no laws, wrongful operation, shortage of resource, inability of the individual/community to utilize the resources at its best. Every level situation is becoming worst whether you talk about individual or community level. Spending lots of money, building toilets and other infrastructure will not going to solve the problem alone. Behavior change communication with community participation is very important with the enforcement of laws in order to make one's nation clean and green.²

Limitations

As the study subjects are drawn only from the students of one Central university, it would have been a good scientific idea to draw sample considering various other universities so as to draw better scientific conclusion in order to diversify the study. In the present case due to non-availability of funds and paucity of time, the above-mentioned sampling procedure with multicentric approach could not be taken into consideration.

CONCLUSION

The cost of public health crises is far greater than the price of fixing it. That's why SBA must power on its efficacy sharpened by regular impact assessment studies and learning they provide SBA could have been much more impactful if it was clubbed with issuance of certain ordinance or act giving more teeth to the environment pollution act and at the same time invigorating the existing environment laws.

The current study reflects that majority of the population were aware of SBA and its objective and the amount spent and the students of central university had shown positive attitudes and perception towards SBA to make India clean. Students perceive that initiative should start at the ground level. "Charity begins at home". "Be the change you want to see in the world". The first and foremost step towards any proper waste management process depends on positive attitude towards clean environment. It should be a program for public sensitization. Therefore, education should be the priority at school level, university level and national level too. Majority agreed that the programme is needful in one's country and government should take more steps to achieve its goal and municipal and other organization should become more active and come forward from its slumber to make India clean and green. Actions are required and actions do speak louder than words. Government should build up momentum.

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