International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Impact Factor 2024: 7.101

Assessing the Influence of SBA on Student Awareness and Behavior Towards Sanitation and Hygiene in Degree Colleges of Anantnag

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Abstract: ***The research paper titled "Assessing the influence of SBA on Student Awareness and Behaviour towards Sanitation and Hygiene in Degree colleges of Anantnag" examines college students' awareness of and gender-based disparities about the Swachh Bharat Abhiyan (SBA), a flagship cleanliness initiative by the Government of India. The majority of the students (56.57%) exhibit high awareness of SBA objectives and hygiene practices, followed by moderate awareness (33.23%) and poor awareness (10.44%), according to descriptive analysis. These findings show that student participation is on the rise, which is typically positive. Gender differences in SBA awareness were investigated using an independent t-test. The test first indicated slight gender differences on two questions, but following Benjamini–Hochberg adjustment, they were no longer significant. The lack of significant correlations between gender and responses was further supported by Spearman's correlations (all $p > 0.05$; $\rho = -0.172$ to 0.234). Overall, the results of both tests repeatedly showed that the attitudes, perceptions, and behaviors of the male and female participants were largely comparable, which supported the null hypothesis. Furthermore, there is still some concern regarding the campaign's capacity to make a discernible difference in some regions, even though the majority of participants had a favourable opinion of SBA and acknowledged the importance of individual responsibility. In order to improve the SBA's outreach and long-term behavioural impact, the study concludes by highlighting the necessity of gender-sensitive awareness tactics and ongoing institutional initiatives to raise awareness levels among all student groups.***

Keywords: SBA, Personal Hygiene, Public Health, Behaviour Change, gender difference

1. Introduction

On September 24, 2014, the Prime Minister of India gave his approval to the Swachh Bharat campaign, which was an adaptation of the Nirmal Bharat Program, which had been started by the previous government. On October 2, 2014, the anniversary of Mahatma Gandhi's birth, the Indian government officially launched the Swachh Bharat Abhiyan to clean the nation's roads, streets, and infrastructure at the national level, encompassing 4041 statutory towns. The goal is to achieve the vision of "Clean India" by October 2, 2019, the 150th anniversary of Mahatma Gandhi's birth.[1] The goal is to develop two submissions with well-defined guidelines: the Swachh Bharat Mission (Grameen/Rural) and the Swachh Bharat Abhiyan (Urban). Swachh Bharat Abhiyan's (Urban) objectives include eradicating manual scavenging, open defecation, and solid waste management in a contemporary, scientific way; promoting positive behavioral changes toward sanitation practices; and increasing public awareness of sanitation, hygiene, and its relationship to public health. The government faces a significant task in changing people's attitudes, particularly in rural areas, which is quite different from the achievable infrastructural initiative of providing toilets. It is concentrating on this most crucial element, which necessitates addressing a deeply ingrained, centuries-old practice of people going outside (to defecate) and then encouraging them to discuss it. Several interpersonal techniques through community approaches to sanitation are being used across the country to trigger behavioural change, fundamental to the SBM.[2] The serious business of cleaning India requires significant behavioral changes, in-depth knowledge, and scientific competence, in addition to substantial investments in technology, research, and development.[3] Since Indian citizens are the primary stakeholders in the Swachh Bharat Abhiyan, the government should concentrate on encouraging individuals to actively participate to ensure the mission's success. Accessible and secure toilets have induced a big qualitative change in villagers' lives, especially women who were forced to defecate in the open in darkness, suffering mental torture, with their safety, security, and dignity imperiled.[2] Very little research has examined how SBA affects students' knowledge of and behavior toward sanitation and hygiene in the Kashmir valley as a whole, and in District Anantnag specifically. In light of this, the purpose of this study was to evaluate how the Swachh Bharat Abhiyan affected the attitudes and behaviors of Anantnag college students.

2. Material and Methods

The current study uses the descriptive survey method as part of a quantitative research strategy. In the context of the Swachh Bharat Abhiyan (SBA) campaign, this strategy is appropriate for methodically gathering quantitative data from a population in order to evaluate the present state of awareness and behavioral habits regarding sanitation and hygiene. To evaluate the expected effect of the Swachh Bharat Abhiyan (SBA) on college-bound students' understanding and behavior about sanitation and hygiene, a cross-sectional study was conducted, where a semi-structured questionnaire based on the objectives of the study was designed after a relevant literature review.[4][5][6] The sample population for the present study consists of students enrolled in different degree colleges in the Anantnag district of Jammu and Kashmir. The study's sample consisted of 200 students who were chosen at random from several degree colleges in the Anantnag area.

Following the Swachh Bharat Abhiyan (SBA) initiative, the sample was selected to represent the overall understanding and behavioral patterns of college students regarding sanitation and hygiene. The participants were selected randomly after seeking proper consent. The respondents were informed about the study, and the identity of the participants was kept confidential. All the respondents were above 18 years of age. The data were subjected to descriptive and inferential analysis, such as an independent sample t-test to compare scores based on gender. Benjamini-Hochberg adjustment was used to account for false discovery rate (FDR), and Spearman's rank order correlation between gender and each questionnaire item. A p-value < 0.05 was considered statistically significant.

Hypothesis:
H_0: There is no significant difference in the level of awareness regarding the Swachh Bharat Abhiyan (SBA) initiative among college-going students of Anantnag district concerning gender.

3. Results

While the independent samples t-test and Spearman's correlation were used to identify statistically significant differences in the level of awareness regarding the Swachh Bharat Abhiyan (SBA) initiative among college-going students of Anantnag district based on gender, the collected data were subjected to percentage analysis for descriptive insights.

Table 1: Descriptive Analysis.

SBA awareness	Percentage
High Level	56.57%
Middle Level	33.23%
Low level	10.44%

A descriptive summary of students' knowledge of the Swachh Bharat Abhiyan (SBA) across Anantnag's degree colleges is shown in **Table 1**. It draws attention to three different student awareness levels: high, moderate, and low. According to the results, a sizable majority of students—56.57%—show a high degree of understanding of the objectives and methods supported by the SBA campaign. This high percentage shows how engaged and receptive students are to the government initiative's promotion of sanitation and hygiene concepts. After this, 33.23% of the pupils are classified as having a moderate level of awareness. Although these pupils probably have a general awareness of the goals and procedures of the SBA, it's possible that they don't actively participate in or regularly use these concepts in their daily lives. Through focused awareness campaigns and persistent institutional initiatives, this group—which represents an important portion of the population—could be better informed and inspired to go from moderate to high engagement.

Just 10.44% of the pupils show signs of low awareness. This is a crucial issue that warrants attention, even if it only affects a small percentage of the student body. These pupils may be ignorant of the significance of hygiene and sanitation, as well as the wider social and health ramifications of the SBA movement. Their lack of exposure, poor communication techniques, or socioeconomic and cultural hurdles could all be contributing factors to their low awareness.

Overall, the data shows that student interest in SBA-related topics is on the rise, which is encouraging. The vast majority of students demonstrate an admirable level of comprehension and agreement with the campaign's goals, indicating that awareness campaigns in educational institutions have been generally successful. However, targeted interventions must be created to raise the awareness levels of the remaining student groups, especially those in the moderate and low categories, to accomplish the SBA's overall success. Regular awareness campaigns in colleges, student-led cleanliness drives, and interactive seminars could all be useful tools for raising student knowledge and engagement. The results highlight the value of consistent educational interventions for long-term behavioral change and confirm the potential of young people as change agents in national cleanliness and hygiene initiatives.

An independent sample t-test was conducted to compare the mean score of male and female participants on each questionnaire item. The data is presented in **Table 2.** Females reported slightly higher mean scores than males on two items, Q1 ($t(df) = 2.05$, $p = 0.0432$) and Q14 ($t(df) = 2.13$, $p = 0.036$), which demonstrated statistically significant differences at the unadjusted level. These differences were no longer statistically significant, though, once the Benjamini-Hochberg adjustment was used to account for false discovery rate (FDR) (p-adj > 0.05). Adjusted p-values for all 19 items varied from 0.684 to 1.000, suggesting that responses did not differ significantly by gender. These findings imply that the attitudes, knowledge, and behaviors of the study's male and female participants were largely similar with relation to the themes being examined.

Table 2: Independent sample t-test for gender differences.

Question	t-statistic	p-value	Mean (Male)	Mean (Female)	95% Cl (Lower)	95% Cl (Upper)	Adjusted p-value
Q1	2.05	0.0432	4.62	4.86	0.01	0.47	0.821
Q2	1.27	0.2080	3.86	4.11	-0.14	0.64	1.000
Q3	0.16	0.8730	4.28	4.31	-0.38	0.44	1.000
Q4	0.36	0.7160	3.67	3.76	-0.41	0.60	1.000
Q5	-0.67	0.5080	4.22	4.09	-0.54	0.27	1.000
Q6	0.64	0.5260	4.10	4.21	-0.23	0.46	1.000
Q7	0.64	0.5250	3.74	3.86	-0.25	0.49	1.000
Q8	-0.36	0.7190	3.07	2.98	-0.56	0.39	1.000
Q9	0.49	0.6240	4.19	4.29	-0.28	0.47	1.000
Q10	0.59	0.5540	4.18	4.18	-0.25	0.46	1.000
Q11	0.47	0.6400	3.31	3.44	-0.41	0.66	1.000

Q12	-1.66	0.1000	4.17	3.79	-0.85	0.08	1.000
Q13	1.52	0.1340	4.29	4.52	0.07	0.52	1.000
Q14	2.13	0.0360	4.07	4.42	0.02	0.68	0.684
Q15	0.04	0.9650	3.34	3.35	-0.51	0.53	1.000
Q16	0.58	0.5640	4.07	4.14	-0.17	0.31	1.000
Q17	1.09	0.2800	4.05	4.25	-0.16	0.54	1.000
Q18	0.61	0.5430	4.04	4.16	-0.28	0.53	1.000
Q19	-0.64	0.5240	3.73	3.61	-0.48	0.24	1.000

Note: Multiple comparisons were corrected for p-values using the Benjamini-Hochberg (FDR) technique. After correction, none of the differences were still significant (p-adj > 0.05).

To further evaluate possible gender influences, Spearman's rank order correlation between gender and each questionnaire item was computed. The data is provided in **Table 3.**

Table 3: Spearman's rank correlation between gender and Likert items

Question	Spearman's (ρ) rho	p-value	Strength	Direction
Q1	0.013	0.9237	Very weak	Positive
Q2	-0.172	0.2013	Weak	Negative
Q3	-0.041	0.7582	Very weak	Negative
Q4	-0.003	0.9809	Very weak	Negative
Q5	-0.056	0.6763	Very weak	Negative
Q6	0.038	0.7762	Very weak	Positive
Q7	0.132	0.3223	Weak	Positive
Q8	0.234	0.0775	Weak	Positive
Q9	-0.038	0.7817	Very weak	Negative
Q10	0.035	0.7961	Very weak	Positive
Q11	0.017	0.901	Very weak	Positive
Q12	0.084	0.531	Very weak	Positive
Q13	0.084	0.5412	Very weak	Positive
Q14	0.104	0.4443	Weak	Positive
Q15	-0.042	0.7578	Very weak	Negative
Q16	0.184	0.1746	Weak	Positive
Q17	-0.12	0.3803	Weak	Negative
Q18	0.02	0.8839	Very weak	Positive
Q19	0.089	0.5197	Very weak	Positive

The findings show that there is no statistically significant correlation between gender and questionnaire responses. Statistical significance has not been achieved by any of these correlations (all p-values> 0.05). All of the correlation coefficients (ρ) fell between weak and very weak categories, ranging from -0.172 to 0.234, even though certain items (like Q8, Q16) had the strongest positive correlations and others (like Q2, Q17) had the strongest negative correlations. This implies that, within the parameters of the study, participants' attitudes, perceptions, and behaviors were not significantly influenced by their gender.

So, both statistical tests show that there are consistently no significant or statistically significant gender differences in the dataset, according to the t-test and Spearman's correlation tests. Some items showed slight positive or negative trends, but these were not statistically supported and were of modest magnitude. Thus, the findings imply that attitudes, information, and actions concerning the research topic were substantially the same for both male and female individuals; hence, the null hypothesis is accepted.

As far as the distribution of participants (n=200) regarding their perception of SBA is concerned, it is represented in Table 4. As shown by the highest mean score of 4.42, this suggests a strong personal responsibility for cleanliness. A huge majority of respondents (91.5%) either agreed or strongly agreed that individual contribution is vital in SBA. Similarly, with a strong mean score of 4.26%, 90.5% of participants agreed that SBA effectively conveys the importance of cleanliness. On the other hand, there was a varied perception regarding the SBA's real contribution to a cleaner India. A large percentage of participants, about 21% strongly disagreed with this statement, resulting in the lowest mean score of 3.37% thereby raising a question mark on the program's impact, yet 65.5% still agreed with it so far.

In addition to this, 91% of participants felt that their involvement in SBA activities was significant, showing a high level of involvement (mean = 4.10). Furthermore, with a mean score of 4.17, 89% of respondents said that SBA could transform India into a clean and green nation. Overall, the data indicate that almost all participants endorse the goals and tenets of SBA, but there is a noticeable discrepancy between expectations and observed results, especially with regard to the apparent impact of the mission.

Table 4: Distribution of study participants according to their perception about SBA (n=200)

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean
Contribution at individual level is important in SBA	55%	36.5%	5%	2.5%	1%	4.42
SBA is able to communicate the importance of cleanliness	43.5%	47%	5%	1%	3.5%	4.26
SBA has contributed towards a clean India	16.5%	49%	10%	3.5%	21%	3.37
Your participation in SBA activities is important	22%	69%	7%	1%	1%	4.10
Swachh Bharat Abhiyan will make India clean and green country	38%	51%	5%	2%	4%	4.17

4. Discussion

Gender differences in any of the Likert items (Q1-Q19) measuring sanitation and Swachh Bharat Abhiyan (SBA) knowledge were examined using independent-samples t-tests. On two items, Q1 (t(df) = 2.05, p = 0.0432) and Q14 (t(df) = 2.13, p = 0.036), females had somewhat higher mean scores than males. However, after Benjamini–Hochberg adjustment for false discovery rate, these differences were no longer significant ($p_{adj} > 0.05$). There was no statistically significant difference by gender for any of the items, with adjusted p-values ranging from 0.684 to 1.000. Previous studies

conducted in various Indian contexts support these conclusions. According to a Jodhpur urban survey, both sexes had extremely high levels of SBA awareness (97.2% for men and 94.7% for women), and aside from one knowledge item ($p < 0.005$), there was no discernible gender awareness correlation.[5] With coefficients (ρ) ranging from -0.172 to 0.234, Spearman's rank-order correlations between gender and item responses were also non-significant (all $p > 0.05$), suggesting at most modest relationships. Overall, both statistical tests consistently indicate that the awareness, attitudes, and behaviors examined in this study were not significantly influenced by gender. Multivariable analysis showed that only socioeconomic level, not gender, substantially influenced sanitation outcomes in Cochin, despite univariate analysis showing an initial gender difference.[7] Research carried out in different areas of Punjab revealed that there was no discernible difference in SBA awareness levels amongst demographic factors, such as gender.[8] This uniformity across various geographic contexts raises the possibility that the campaign's reach and messaging were just as successful for men and women.

Talking about the perception regarding Swachh Bharat Abhiyan, the current study revealed that a huge percentage of (83.2%) students surveyed actually actively participated in Swachh Bharat Abhiyan initiatives in their college, making the mission a great success. As per Swain and Pathela, SBA mainstreamed sanitation in policy planning by integrating Information, Education, and Communication (IEC) activities through schools and colleges. These involved cleanliness campaigns, pledges for cleanliness, and active involvement by students through sanitation clubs.[9] Another finding of this study indicated that 91.2% of students in the survey strongly agree that their contribution to Swachh Bharat Abhiyan activities is very important. Institution-wise, student participation in campus-driven sanitation programs by "Swachhata Pakhwadas," posting, and peer-led awareness campaign have been effective in getting a culture of hygiene naturally.[10] This shows that participants have a positive perception of SBA, which is also in agreement with other similar studies done in other states of India. Yadav, K et al. conducted to assess knowledge, perception, and practices regarding SBA among rural people.[4] He revealed that 77.45% of the study subjects thought that all people must actively participate in SBA activities. Suthar, P. et al**.,** in their study conducted in Jodhpur, also found a positive perception among respondents about SBA. In their study, a majority (82.00%) of the respondents agreed that SBA has contributed towards a cleaner India, and they realized that individual-level contribution is important for the success of the SBA program.[5] In another study conducted by Utpat et al in Pune, it was found that 80.43% of subjects thought that there is a need of SBA, and 72.82% felt that SBA is effective. These findings reflect the community's positive perception of the SBA.[11] Our study also shows that 88.6% of students involved in the survey think that Swachh Bharat Abhiyan will make India a clean and green country, reflecting a strong sense of optimism about its potential.

It can be concluded that both independent samples t-tests and Spearman's rank correlation analysis supported the current study's conclusion that there was no statistically significant difference in the awareness of the Swachh Bharat Abhiyan (SBA) between male and female college students in the Anantnag area. This implies that within the study population, students' involvement with sanitation and hygiene efforts was not significantly influenced by gender. The same awareness and attitude levels between the sexes suggest that SBA-related activities and messaging may have been successfully shared with both male and female students, maybe as a result of the campaign's inclusive communication tactics and wide exposure.

Additionally, the study shows that most participants have positive opinions of the Swachh Bharat Abhiyan and value both personal accountability and active involvement. Despite the broad support for the campaign's goals, there is still some doubt about its ability to produce noticeable improvements in cleanliness. Overall, the results emphasize the necessity of consistent work to increase the initiative's impact and visibility, in addition to specialized public health education that supports all students' equal involvement. These observations urge academic institutions, decision-makers, and campaign planners to uphold inclusive frameworks that keep maximising the abilities of both male and female students to contribute equitably and to the best of their ability to meet the goals and demands of the Swachh Bharat Abhiyan.

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