

Impact of Swachh Bharat Mission on Rural Sanitation: A Case Study of Dhaneli and Gwalior District

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Abstract

The Swachh Bharat Mission (SBM), launched by the Government of India in 2014, aims to improve sanitation and eliminate open defecation, particularly in rural areas. This study investigates the impact of SBM on rural sanitation in Dhaneli Gram and Gwalior District in Madhya Pradesh. The research focuses on key aspects such as infrastructure development, public health improvements, and changes in sanitation behavior. Field surveys and interviews revealed a substantial increase in toilet construction in both regions, leading to a significant reduction in open defecation. Public health records indicated a decline in waterborne diseases, such as diarrhea and cholera, following the mission's implementation. Behavioral changes, supported by community-led awareness programs, improved regular toilet usage, although initial resistance was observed. Despite these successes, challenges remain in ensuring the sustainability of sanitation infrastructure, particularly in maintaining toilets and ensuring a steady water supply. In some rural areas, consistent usage and maintenance of toilets continue to be issues, threatening long-term success. This study concludes with recommendations for addressing these challenges, including the need for ongoing community engagement, improved water infrastructure, and sustained government support to maintain sanitation standards in rural India.

Keywords: Swachh Bharat Mission (SBM), rural sanitation, open defecation, toilet construction, public health, hygiene practices, infrastructure sustainability

INTRODUCTION

The Swachh Bharat Mission (SBM), launched by the Government of India in 2014, is one of the most ambitious cleanliness campaigns in the world. Its vision is to achieve a “Clean India” by addressing critical sanitation issues, particularly the elimination of open defecation and the promotion of proper waste management [1]. Prior to the launch of the SBM, rural India faced severe sanitation challenges, with millions of households lacking access to toilets and basic hygiene facilities. Open defecation, poor

sanitation infrastructure, and inadequate waste management have led to widespread health problems, especially in rural areas where waterborne diseases such as diarrhea and cholera are rampant [2].

The mission targeted both rural and urban populations; however, rural areas, where open defecation was the most prevalent, became a particular focus. The SBM aimed to build millions of toilets, raise awareness about the importance of sanitation, and promote behavior change through a variety of communication campaigns. By focusing on community participation and local leadership, the mission aimed to create a lasting impact on both individual behaviors and public health outcomes [3].

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Received Date: December 13, 2024

Accepted Date: December 16, 2024

Published Date: January 10, 2025

Citation: Ranjeet Singh Jadaun, Dhruv Narwariya. Impact of Swachh Bharat Mission on Rural Sanitation: A Case Study of Dhaneli and Gwalior District. Journal of Water Resource Engineering and Management. 2025; 12(1): 29–34p.

In this context, this study examined the impact of SBM in two specific locations: Dhaneli Gram, a small village in Madhya Pradesh, and Gwalior District, which includes a mix of rural and urban populations. These areas were selected to provide a comprehensive understanding of how SBM has influenced rural sanitation, particularly in terms of infrastructure development, toilet construction, and public health improvements. The study also assessed the challenges in sustaining these improvements and the level of community awareness and participation regarding hygiene and cleanliness. Through a comparative case study approach, this research sought to highlight the successes and ongoing issues faced by rural communities under SBM, offering insights for future sanitation initiatives [4].

METHODOLOGY

This study employs a mixed-method approach to assess the impact of SBM on rural sanitation in the Dhaneli Gram and Gwalior Districts. By combining qualitative and quantitative research methods, this study aimed to provide a comprehensive understanding of the changes in sanitation infrastructure, public health, and hygiene behavior in these areas. The mixed-method approach included primary data collection through interviews and surveys, secondary data analysis of government reports and official documentation, and a comparative analysis between the two study locations to assess differences in the program's effectiveness and challenges.

Primary Data Collection

Primary data collection focused on gathering first-hand insights from local households and community members in Dhaneli Gram and Gwalior Districts. To achieve this, structured interviews and surveys were conducted in both regions. The key areas of inquiry include the following:

- *Toilet construction and usage:* Households were asked about the availability and condition of toilets, whether they used them regularly, and their experience with the construction process under SBM.
- *Hygiene behavior:* Respondents were asked about their daily hygiene practices, including handwashing, waste disposal, and cleaning habits. This study aimed to assess the behavioral changes fostered by SBM.
- *Community participation:* Questions were designed to understand the role of community awareness programs, local governance, and involvement in SBM-related activities. This included perceptions of public health campaigns and behavior change communication (BCC) strategies introduced under SBM.
- *Public health impact:* Data on any observed reductions in sanitation-related diseases, such as diarrhea, cholera, and dysentery, were collected from households and local healthcare providers.

A sample size of 150 households was selected from the Dhaneli Gram, representing nearly 80% of the village population. In Gwalior District, owing to its larger population and more diverse socioeconomic conditions, a total of 300 households were surveyed, with respondents chosen from both rural and peri-urban areas to reflect the mixed population. The sample design used random sampling to ensure the representation of different socioeconomic groups, including marginalized and low-income households [5].

Interviews were also conducted with local government officials, health workers, and community leaders to gather their perspectives on the implementation of SBM, including the success, challenges, and long-term sustainability of the program in their respective areas.

Secondary Data Collection

Secondary data were gathered from various official sources including government reports, health department records, and SBM documentation. These data provide a broader statistical overview of the impact of SBM at both state and district levels [6].

- *Government reports and SBM documentation:* Reports from the Ministry of Drinking Water and Sanitation, as well as state government updates, were analyzed to obtain quantitative data on the number of toilets constructed, allocation of funds, and achievement of open defecation-free (ODF) status in Madhya Pradesh.

- *Public health data:* Health department records from local primary health centers (PHCs) and district hospitals were reviewed to analyze trends in waterborne diseases and sanitation-related health issues before and after the implementation of SBM. This provided a quantifiable measure of public health improvements that could be attributed to this mission.
- *Community participation records:* Official documentation from local SBM offices was examined to assess the involvement of local government bodies, non-governmental organizations (NGOs), and community leaders in the program. This helped gauge the level of community engagement and participation in sanitation initiatives as well as the effectiveness of BCC campaigns.

Secondary data analysis was essential in providing a macro-level perspective on SBM outcomes in Gwalior District and allowed for comparison with the more localized findings from Dhaneli Gram.

Comparative Analysis

The comparative analysis aimed to highlight the differences and similarities in the implementation and impact of SBM in the Dhaneli Gram and Gwalior districts. These two areas were selected for comparison because they represent different socioeconomic and demographic characteristics. Dhaneli Gram is a small, rural village with a predominantly agrarian economy, while Gwalior District has a mix of urban and rural populations, offering insights into the varied challenges and successes of the SBM in different settings.

- *Toilet infrastructure and usage:* The analysis compares the rate of toilet construction and usage between Dhaneli Gram and Gwalior Districts. It was important to understand how SBM resources were distributed and the extent to which local households adopted newly constructed toilets.
- *Public health outcomes:* This study compared the reduction in sanitation-related diseases in both areas using data from local health centers and household surveys. This provided insights into whether the mission's impact on public health varied between smaller rural communities and larger and more diverse populations.
- *Behavioral changes and challenges:* Behavioral change data collected from household surveys were analyzed to compare the level of awareness and adherence to hygiene practices in both regions. Differences in community participation, cultural practices, and resistance to new sanitation habits were examined to identify region-specific challenges [7].

Data Analysis

Quantitative data from surveys and official reports were analyzed using descriptive statistical methods to identify trends and correlations between SBM implementation and improvements in sanitation and health outcomes. The qualitative data from the interviews were analyzed thematically, with key themes emerging around toilet usage, behavioral change, public health improvements, and challenges in sustaining sanitation practices.

The comparative approach helped to conclude the effectiveness of SBM in different socioeconomic contexts, allowing the study to provide region-specific recommendations for improving sanitation practices and sustaining long-term impacts in both Dhaneli Gram and Gwalior Districts.

Ethical Considerations

In conducting this research, informed consent was obtained from all participants, and confidentiality was maintained to ensure the privacy of household respondents. Local ethical guidelines were followed, and approval was obtained from the relevant local authorities before conducting surveys and interviews.

This mixed-method approach provides a holistic understanding of SBM's impact of SBM on rural sanitation and health, allowing the study to assess both quantitative improvements in infrastructure and qualitative changes in community behavior and public health.

RESULTS AND DISCUSSION

Improvements in Sanitation Infrastructure

The Swachh Bharat Mission brought substantial improvements to sanitation infrastructure in both the Dhaneli Gram and Gwalior Districts. Before the launch of the SBM, Dhaneli Gram faced significant challenges in terms of rural sanitation. Like many small villages in India, a large portion of households do not have access to toilets, leading to widespread open defecation. This not only posed public health risks but also contributed to the environmental degradation of the village. Data collected from household surveys and official SBM documentation indicate that prior to the mission, only approximately 15% of households in Dhaneli Gram had access to individual household latrines (IHHL).

Following SBM's implementation of SBM, the number of households with access to latrines surged by 85%. Nearly every household in the village now has a toilet thanks to government incentives, awareness campaigns, and the provision of construction materials. Significant infrastructure improvements have dramatically reduced open defecation in the Dhaneli Gram, transforming the village into an ODF area.

In the Gwalior District, where the program was implemented in both rural and peri-urban areas, similar progress was observed. Before SBM, large sections of rural Gwalior lacked basic sanitation infrastructure, particularly in remote areas. Surveys indicate that over 90% of households in rural parts of the district now have access to basic sanitation facilities thanks to the SBM campaign. In the peri-urban areas of Gwalior District, the success rate of toilet construction and usage was slightly lower than that in rural areas because of the differing needs and infrastructure challenges in these areas. However, the overall infrastructure improvement in the district has been commendable with the construction of latrines, the creation of waste management systems, and enhanced access to clean water sources in some regions.

Reduction in Sanitation-Related Diseases

Improvements in sanitation infrastructure have directly impacted public health outcomes in the Dhaneli Gram and Gwalior Districts. Poor sanitation has long been associated with the spread of diseases, such as diarrhea, cholera, and other waterborne illnesses. Data collected from local PHCs in Dhaneli Gram showed a notable decline in the number of cases of diarrhea and cholera following the introduction of SBM. Health workers attributed this reduction to the widespread adoption of toilets and increased hygiene awareness, particularly regarding the importance of handwashing after defecation.

In the Gwalior District, the impact of improved sanitation on public health has also been significant. Rural health centers have reported a decrease in hospital admissions related to poor sanitation, especially in areas where open defecation is prevalent. Public health campaigns conducted as part of the SBM's BCC strategy were effective in raising awareness of the link between open defecation and disease transmission. As a result, the district saw a decline in sanitation-related illnesses, particularly among children who are often the most vulnerable to these diseases.

The improved health outcomes in both the Dhaneli Gram and Gwalior Districts highlight the positive impact of SBM on public health. The availability of proper sanitation facilities, combined with hygiene education campaigns, has played a crucial role in reducing the incidence of diseases associated with poor sanitation. This aligns with broader national trends, where studies have shown that the implementation of SBM has significantly contributed to the reduction in child mortality rates and sanitation-related health issues across India [8].

Behavioral Changes and Community Participation

One of the primary goals of SBM was to promote not only the construction of toilets but also their consistent usage. The success of any sanitation program depends on changing long-standing behaviors, particularly in rural areas where open defecation has been a cultural norm for generations. In Dhaneli

Gram, surveys conducted after SBM implementation revealed that despite the widespread availability of toilets, consistent usage was initially a challenge. Many households built toilets but continued the practice of open defecation, particularly older family members who were resistant to change.

However, the SBM's focus on BCC has helped address these challenges. Through community-led initiatives, local health workers and SBM volunteers conducted awareness programs to educate residents about the health risks associated with open defecation and the importance of hygiene maintenance. These efforts were instrumental in improving toilet usage rates, with over 80% of households in Dhaneli Gram now regularly using latrines.

Gwalior District saw similar improvements, although some rural pockets still faced challenges in promoting consistent toilet usage. Older generations and more remote rural areas have been reluctant to adopt new sanitation practices despite the availability of toilets. In these areas, SBM community engagement strategies have been crucial in involving local leaders, health workers, and women's groups to spread awareness and encourage behavioral change. This has resulted in gradual improvements in toilet usage, although continuous efforts are required to sustain these changes.

Challenges in Sustainability

While SBM has led to significant progress in sanitation infrastructure and health outcomes, the sustainability of these improvements remains a challenge, particularly in Dhaneli Gram. Some households reported issues related to toilet maintenance, including the availability of water for cleaning and flushing. In areas where the water supply is inconsistent, toilets often fall into disrepair, which could lead to a return to open defecation if not addressed.

Similarly, in Gwalior District, although infrastructure development has been robust, the long-term sustainability of the program requires continuous government oversight and support. In some rural pockets, households face difficulties related to waste management and maintenance of sanitation facilities. Additionally, ongoing awareness campaigns are essential to reinforce behavioral change and prevent reversion to previous sanitation practices. The district also faces challenges in solid waste management, particularly in peri-urban areas where rapid population growth puts additional pressure on the sanitation infrastructure.

Comparative Insights

The comparative analysis of Dhaneli Gram and Gwalior District offers valuable insights into the implementation and impact of SBM in different socioeconomic and demographic contexts. Dhaneli Gram, with its smaller population and targeted campaigns, saw a higher rate of toilet construction and more immediate improvements in sanitation behavior. The close-knit nature of the village allows for greater community participation and quicker adoption of SBM initiatives.

In contrast, Gwalior District, with its mixed urban-rural population, faced more complex challenges in implementing SBM. While rural areas benefited from targeted sanitation efforts, peri-urban regions required different strategies to address diverse sanitation needs. The urban-rural divide in infrastructure, community mobilization, and financial resources influenced the speed and scale of SBM implementation. However, both areas saw marked improvements in public health and hygiene behaviors, underscoring the overall success of SBM.

In conclusion, the SBM has brought significant improvements to rural sanitation infrastructure and public health in both the Dhaneli Gram and Gwalior Districts. Sustaining these improvements will require continued government support, community engagement, and investment in water and waste management infrastructure to ensure their long-term success. Comparative insights from these two regions highlight the need for region-specific sanitation approaches that address the unique challenges of each community.

CONCLUSION

The Swachh Bharat Mission has substantially improved rural sanitation in both the Dhaneli Gram and Gwalior Districts, resulting in enhanced toilet access, reduced open defecation, and better public health outcomes. Increased infrastructure alongside public health campaigns has contributed to improved hygiene practices. However, challenges remain in maintaining sanitation facilities and sustaining behavioral change, particularly in water supply and consistent toilet usage.

To ensure long-term success, continuous government support, active community participation, and the inclusion of public-private partnerships are essential. The insights gained from Dhaneli Gram and Gwalior District highlight the importance of adapting strategies to regional needs and can serve as valuable guidance for future rural sanitation initiatives across India.

Recommendations

1. *Strengthen maintenance systems:* Ensure that households have the resources and knowledge to maintain toilets, particularly in water-scarce regions.
2. *Continuous awareness campaigns:* Extend BCC beyond the initial implementation phase to ensure that new habits are sustained.
3. *Water supply infrastructure:* Improve water access to ensure that toilets are functional and regularly used.
4. *Monitoring and evaluation:* Regular monitoring of sanitation facilities and health outcomes should be implemented to ensure long-term sustainability.
5. *Local governance involvement:* Empower local government bodies and community leaders to take responsibility for the upkeep of sanitation infrastructure and to promote consistent hygiene practices.

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