Original Article

Swachh Bharat Mission Gramin: Uptake and challenges in rural Coimbatore

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Abstract

Introduction: Water, sanitation, and hygiene (WASH)-related infectious diseases contribute to approximately 5% of the global disease burden. Despite sanitation being a human right, 673 million people worldwide had limited access to toilets. To tackle the same, Swachh Bharat Mission-Gramin (SBM-G) was launched in 2014 to facilitate the construction of over 100 million individual household latrines (IHHLs) across India. However, literature evidence on acceptance of SBM-G in Tamil Nadu, particularly in Coimbatore, is scarce. **Objectives:** The primary objective was to investigate the utilisation of the SBM-G scheme and its associated factors in rural Coimbatore. **Materials and Methods:** In 2022, a mixed-methods study incorporating quantitative (using a purpose-designed questionnaire) and qualitative (using in-depth interviews and focus group discussions) components was conducted among 60 SBM-G beneficiaries in Kovai Medical Center and Hospital Institute of Health Sciences and Research (KMCH IHSR)'s rural field practice area. Quantitative data were analysed using Statistical Package for the Social Sciences (SPSS) v23 and qualitative data using manual thematic content analysis. **Results:** Before IHHL construction, 93.7% of respondents practiced open-air defecation (OAD). The issues perceived with OAD were distance (28.8%) and privacy concerns (12.5%). After SBM-G implementation, 78.3% reported using the IHHL 'all the time', reflecting a substantial shift in behaviour. Most respondents received financial aid within about six months (INR 8,000), often in a single instalment. The majority had constructed their IHHLs before 2015. The expenditures incurred varied significantly, with 58.3% spending extra costs ranging between INR 10,000 and 30,000. Water supply to households significantly influenced IHHL usage. **Conclusion:** While rural villagers appreciate the SBM-G financial assistance for IHHLs, concerns about the inadequacy of the sanctioned amount for proper piped water supply and septic tanks persist. Nonetheless, there is a clear demonstration of positive behavioural change, marked by reduced OAD and increased IHHL usage.

Keywords: Behaviour change, open-air defecation, rural sanitation, sustainable development goals, Swachh Bharat Mission Gramin

Introduction

Globally, despite the recognition of basic sanitation as a human right, over half of the world's population, totaling 4.2 billion people, utilises sanitation services that inadequately manage human waste, with 673 million lacking access to toilets altogether. Water, sanitation, and hygiene (WASH)-related infectious diseases contribute to 4% of global deaths and 5.7%[1] of the global disease burden. In India, an estimated 564 million[2] individuals engage in open defecation, releasing approximately 65,000 tonnes of faeces into the environment daily.

The Swachh Bharat Mission-Gramin (SBM-G), initiated in 2014, represents one of the most extensive rural behaviour change programmes globally, aiming to enhance sanitation conditions in India. Providing financial incentives, approximately 12,000

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rupees[3,4] (about 160 USD), for constructing individual household latrines (IHHL), the programme has facilitated the construction of over 100 million IHHLs nationwide within eight years. However, studies suggest potential challenges in the optimal utilisation of SBM-G, both in terms of programme implementation and behavioural change, warranting further investigation.[5,6]

Addressing Sustainable Development Goals, the United Nations (UN) emphasises ensuring water and sanitation availability globally, highlighting concerns about open defecation's persistence in the Global South. Inadequate sanitation leads to various health impacts, including diarrhoea, neglected tropical diseases, vector-borne diseases, stunting, antimicrobial resistance, anaemia, and preterm birth.

Critical voices emphasise the need for prioritising sanitation-related behaviours and advocating for marginalised populations without access to basic services. Challenges such as improper faecal sludge management, inappropriate toilet technologies, and inadequate human resources persist in rural areas.[7] Scholars call for comprehensive evaluations of development alternatives and institutions, questioning the translation of institutional success into real-world impact.

While the SBM-G claims significant progress, challenges persist, and the importance of sustained efforts in achieving universal access to safe sanitation is underscored. Research indicates a shift in perceptions, with people welcoming the concept of IHHL over open-air defecation (OAD), but challenges related to wealth and caste disparities persist, impacting sanitation practices in rural areas.[8-10]

Objectives

1. To study the utilisation of the SBM-Gramin scheme in rural Coimbatore region.
2. To explore the factors associated with its utilisation.

Materials and Methods

Study design: A qualitative study involving in-depth interviews and focus group discussions. Study location: Villages in the field practice area of Rural Health Training Centre (RHTC), Kovai Medical Center and Hospital Institute of Health Sciences and Research (KMCH IHSR).

Study population: Families under the field practice area of the rural health training centre, KMCH IHSR who have constructed IHHL under the SBM-G scheme. Refugees, migrant labourers and other temporary residents were excluded from the study.

Study period: This study was conducted for two months, that is, from September to October 2022.

Sample size: A purposive sample of around 60 households had been identified as per the study criteria.[11]

Inclusion criteria: Although the head of the household had been the primary interviewee, other members of the family were also encouraged to participate in the discussion.

Exclusion criteria: Identified households not willing to participate in the study were excluded.

Methodology with flow chart

Institutional Human Ethics Committee (IHEC) approval
↓
Data collection among people who claimed the scheme (using the preformed questionnaires and Focus Group Discussion [FGDs])
↓
Qualitative data analysis
↓
Report writing and submission

Data collection

IHEC clearance had been obtained before starting the data collection. A convenient sample of around 60 households had been identified as per the study criteria and invited to be part of the study after explaining the purpose and nature of the study. Written informed consent had been obtained from those who were willing to participate. Face-to-face interviews had been conducted by the researcher and the guide at the respondent's home. Although the head of the household had been the primary interviewee, other members of the family were also encouraged to participate in the discussion. Besides documenting the basic sociodemographics, the interviews attempted to elicit the challenges/difficulties faced by the respondent families in the optimal utilisation of SBM-G. After the completion of the in-depth interviews, four rounds of focus group discussions were organised to further explore the consensus views of the study participants regarding SBM-G. Interviews and discussions were audio-recorded with prior consent.

Observations and Results

Data were collected from villages within the field practice area of KMCH IHSR, Coimbatore, specifically Vagarayampalayam, Molakalipalayam, Mopperipalayam, Solakattupalayam, Ganapathypalayam, and Valayapalayam, constituting the Vagarayampalayam panchayat with a population of 11,440. Table 1 illustrates the subject distribution across these selected villages. Notably, beneficiaries of constructed toilets were

Table 1: Demographic distribution

Village	Study participants
Vagarayampalayam	32
Molakalipalayam	6
Mopperipalayam	15
Solakattupalayam	3
Ganapathypalayam	2
Valayapalayam	2

required to own the land on which the toilet was built. The constructed toilets featured the SBM logo and provided details about the area and sanction amount.

Table 2 describes the duration of grant approval for the beneficiaries. It noted that greater proportions (33.3%) received in 3–6 months from application, 6.6% of them received as quickly as in a month's time, 31.6% within 2 months and 16.66% in more than 6 months. The overwhelming majority of applications got sanctioned in the first attempt (95%), remaining (5%) in subsequent attempts.

The SBM-G was initiated in 2014, and applications began rolling in at that time.[12,13] Active participation has been observed since the mission's inception. Regarding the reported time of toilet construction, 36.6% of subjects constructed toilets between 2012 and 2015, 16.6% between 2016 and 2017, and 10% between 2018 and 2020. Notably, 36.6% applied before 2014 and received grants. The sanctioned amounts varied, with 73.3% receiving Rs. 8,000, 6.6% receiving Rs. 10,000, and 13.3% receiving Rs. 12,000, while 6.6% received less than Rs. 8,000.

Beneficiaries received the sanctioned amount either in one-shot (91.7%) or in instalments (8.4%). Despite the initial sanction, all individuals incurred out-of-pocket expenses. The reported expenditure for toilet construction and additional expenses revealed that 26.6% spent Rs. 30,000–50,000 more than allotted, 58.3% spent Rs. 10,000–30,000, 10% spent less than Rs. 10,000, and 3.3% spent more than Rs. 70,000 extra for building their toilets.

Figure 1 shows a graphical representation of the reported adequacy of financial aid received by the programme. It has been evaluated on a scale of 1–10, with 1 being 'not at all adequate' and 10 being 'more than sufficient.' After the construction of the toilet, there were some regular issues with its usage.

The frequency of reported IHHL usage indicated that 78.3% of individuals used it consistently, 8.3% used it at times, and another 8.3% used it rarely. Additionally, 5% reported using IHHL often.

Regarding water facilities in IHHL, 50% of respondents reported carrying water to use toilets, 46.7% used piped-manual flush, and 3.3% utilised piped-auto flush.

It has been noted that the water supply to the household does affect the usage of the IHHL.

The frequency of water supply to households exhibits a range, with variations from a daily to a weekly pattern. Specifically, 6.9% experience everyday water supply, 27.6% receive water once every two days, 41.4% have water once every three days, 22.4% receive it once every four days, and 1.7% get water once a week. Notably, 98.3% of toilets are connected to a septic tank for waste disposal. The information concerning the bathing space linked to the constructed toilet reveals that approximately 56.7% of individuals have an attached bathing space, while 43.3% do not. Notably, some subjects have integrated new toilets with existing bathing spaces, using materials such as hollow block bricks (66.7%), red bricks (25%), and others (8.3%). The roofing for these structures consists of concrete in 26.7% of cases and asbestos sheets in 73.3% of cases. Sheets include metals, asbestos, plastic, etc.

The defecation practices before the construction of IHHL in the preference of community toilets, OAD, and shared toilets.[14] Before the construction of IHHL, 66.7% practiced OAD, 3.3% exclusively used public toilets, 26.7% utilised both, and 3.3% did not disclose their defecation practices. Examining the shift in sanitation practices following IHHL construction, it is observed that 80% of the surveyed households (48 out of 60) actively use the toilets 'all the time.' Additionally, 5% use them 'often,' 6.6%

Table 2: Reported duration for grant approval (*n*=60)

Duration of wait	Households	
	Number	%
Within a month	4	6.66
Within two months	18	30
Within three months	8	13.33
Within six months	20	33.33
More than six months	10	16.66

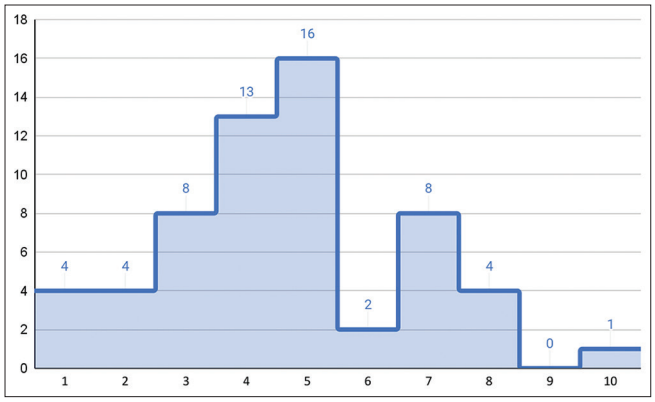

Figure 1: Reported adequacy of financial aid received*. (n = 60). *On a scale of 1–10 with 1 being 'not at all adequate' and 10 being 'more than sufficient'

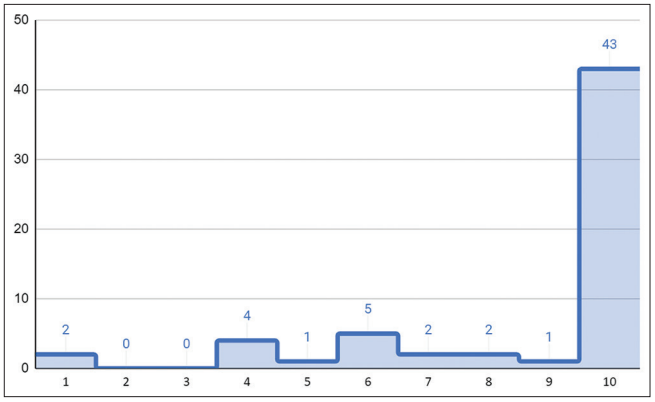

Figure 2: OAD reduction scale (1–10) after building SBM-G toilets. *On a scale of 1–10 with 1 being 'no significant reduction' and 10 being 'drastic reduction' of OAD practice

use them 'sometimes', and 8.3% still refrain from using the toilets due to various reasons.

All constructed toilets (100%) are connected to septic tanks, with an average toilet area of 16.73 sq ft and an average septic tank depth of 8.25 feet. Notably, no separate funds were allocated for septic tank construction. Around 57% of households integrated toilets with bathing spaces, and a majority (88%) opted for or built Indian-style commodes.

Though it is affordable, people have issues with OAD. Distance (28.8%) has been the major common issue followed by privacy (12.5%). Others such as fear of darkness, forest/wild area/uninhabited places, and snakebites account for about 58.8% of the reasons for issues with OAD.

Focus group discussion

A focus group discussion was conducted among four different groups of beneficiaries. Care was taken to ensure one beneficiary from each house for varied responses.

Observations can be abridged to:

The general public does not prefer OAD as it is time-consuming and health hazard-prone, though very few prefer it at times as a matter of physical activity. There are adequate community toilets in the region, people found the toilets are ductable as water supply, maintenance by the panchayat is being carried out most of the time. The groups unanimously agreed with the fact that building toilets has brought down the infection rates/diarrhoeal diseases. The SBM-G programme offers financial assistance after the completion of the toilets at home. They opined that payment is in instalments. especially during the initial periods of construction would be helpful. All the groups felt that the total amount sanctioned was inadequate, the amount received does not equate to the expenses of digging septic tanks and they had to spend 5× of the sanction minimum to build their toilets.

Mr. Ravichandran of Vagarayampalayam said, Quote on quote:

'The scheme isn't available round the year. The panchayat office bearers allot specific months/days to apply for it'.

The group felt welcomed by the idea of direct fund transfers to the respective bank accounts, the ease of the application process and the right move to promote health as the responsibility is shared by the people and the lawmakers.

On the flip side, they said that sanctions are not uniform and rejection rates are notable.

The delays in receiving the money made them disagreeable.

Mrs. Shakuntala of Solakattupalayam feels that 'The reasons for non-acceptance of the application has to be conveyed so that mistakes can be rectified by the applicant/others'.

'Why can't the government build toilets and hand it over to us?' said Subburaj of Kittampalayam.

The group that included exclusively adolescents for FGD did yield different perspectives. The group included 10 male members, active high school and college goers. Reluctance to speak on the topic was noted, especially toilet habits. They did prefer OAD as a 'fun' factor. They wish to use both household toilets and OAD.

Discussion

The land on which the toilet is to be constructed has to be owned by the beneficiary. The toilet built did contain the logo of the SBM and details of the area and sanction amount. It was noted that proportions (33.3%) received amount for toilet building within 3–6 months of the application, 6.6% of them received it as quickly as in a month's time, 31.6% within two months and 16.66% in more than six months. SBM-G was launched in 2014. The application for it started rolling from then on. It is found that people have actively participated since its inception. 36.6% of the subjects constructed toilets between 2012 and 2015, 16.6% between 2016 and 2017, and 10% between 2018 and 2020. It is noted that 36.6% had applied before 2014 and got the grants. Subjects reported different amounts as sanctions credited. 73.3% received Rs. 8,000, 6.6% received Rs. 10,000 and 13.3% received Rs. 12,000. 6.6% of them received less than Rs. 8,000. With the sanction amount as initials, out–of-pocket expenses are seen by all individuals. About 26.6% of them had spent Rs. 30,000–50,000 more than allotted for the construction; 58.3% had spent Rs. 10,000–30,000, 10% of them less than Rs. 10,000, and 3.3% more than Rs. 70,000 as extra for building their toilets. It has been noted that the water supply to the household does affect the usage of the IHHL. It has also been noted that few subjects have built the new toilets in association with the prevailing bathing space, for which hollow block bricks and red bricks are used, with concrete or sheets (asbestos) used as roofing. Around 66.6% of households were using OAD before the construction of toilets. 3.3% were using public/community toilets, 26.6% of them had combined usage and 3.3% had no OAD. The change in behaviour of sanitation habits after the construction of toilets under this programme noted that 48 households (80%) out of 60 are using the toilet actively and 'all the time.'[Figure 2] 5% of them use it 'often,' 6.6% of the total use the toilets 'sometimes' and 8.3% of the households still don't use the toilets due to various reasons.

All the toilets (100%) built had been attached to septic tanks, with the mean square feet area of the toilets being 16.73 sq ft and the average depth of the septic tanks being 8.25 feet. It has been observed that no separate funds were allotted for the construction of septic tanks. 57% of the households had built toilets attached to bathing space, with the majority preferring/built an Indian type of commode (88%). Though it is affordable, people had issues with OAD which includes distance (28.8%), which has been the major common issue followed by privacy (12.5%). Others such as fear of darkness, forest/wild area/uninhabited places, snakebites account for about 58.8% of reasons for issues with OAD.

Very few knew about National Bank for Agriculture and Rural Development (NABARD) and its usage. The knowledge/awareness of the programme seem sufficient. Overall, the villagers welcome the SBM on financial assistance for building toilets considering the fact that the amount sanctioned is very low. They believe that the health of the village is in their hands and they are responsible. Few people who had built toilets just before the programme launch did not receive assistance after applying to SGM-G. Educating women of the family shall upscale their health, as they are considered the decision-makers of the family and yield fruitful results.

Summary

The programme has been well known in the households of Vagarayampalayam and its areas around by means of the panchayat office (75%), word of neighbours (20.7%) and by various other means viz. newspaper, TV, billboards/advertisements (1%). 95% of the subjects got their application sanctioned on their first attempt and about 91% of them received the amount in a single shot. There have been out-of-pocket expenses nevertheless of the government funding; the average out-of-pocket expenses were discovered to be Rs. 24,750.[15-17] When the satisfaction was graded on a scale of 1–10, with 10 being the highest, the mode was 5. When the self-funding was insufficient, 8.3% got backing from NGOs. While the majority were in the habit of OAD before toilet building, a significant reduction (72%) was noticed thereafter. Chikungunya prevalence (public perception), privacy, difficulty in walking, old age issues, embarrassment, issues at night, inconveniences due to vectors/insects, fear of unknown bites, raining reasons, are some of the other reasons that lead to favouring IHHL over OAD.

Conclusion

Looking at previous programmes in India and elsewhere, the SBM-G made major efforts to support behaviour change through mass training programmes and local innovation.[18-20] Scanning the uptakes and challenges formed the main spectrum of our research. The reach of the programme was remarkable at the rural level; the people's interest in reconstructing their sanitary lifestyle and focusing on their acclaim and health is noticeable.

The enthusiasm shown by the subjects in FGD was commendable. Senior citizens were more vocal about the issue and put forth constructive points to achieve the goal. Many did convey the displeasure of insufficient monetary assistance, which wanted to be substantial. Adolescents still need to be made aware of the seriousness of IHHL despite enough effort put forth.

Local influences, peer impact, addressing water supply, and the opportunity of complete financial assistance shall enable this programme to achieve its goal at its zenith.

Ethical clearance

Institutional ethical committee clearance was obtained before the start of the study.

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Conflicts of interest

There are no conflicts of interest.

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