

Training India's first female toilet builders: An argument for improving sanitation through women empowerment and social inclusion

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Abstract

Basic sanitation facilities are inaccessible to 40 percent of the world's population (World Health Organization 2014). The call to address the Sixth Sustainable Development Goal of "Ensuring availability and sustainable management of water and sanitation for all" has never been so imperative, particularly in a nation such as India where open defecation is most rampant (<https://sustainabledevelopment.un.org/focussdgs.html>, accessed June 14, 2015; World Health Organization and UNICEF 2014). Girls and women in rural India are disproportionately affected by limited access to adequate sanitation (WSSCC et al. 2013). Despite countless attempts to counteract the practice of open defecation in India, the kind of attitudinal and behavioral change necessary to end open defecation on a large and sustainable scale have yet to bring about widespread toilet use (Coffrey et al. 2014). The limited extent to which sanitation projects have achieved social inclusivity among marginalized communities is recognized as a contributing factor to the persistence of poor sanitation in India (UN Water 2008; Coffrey et al. 2014). This paper will discuss early stages of an intervention that places a specific focus on engaging women in rural villages within India in the goal to end open defecation. The project, Women Empowerment: Sanitation (WE: Sanitation) is currently in implementation in seven states throughout India and proposes that the goal of improving sanitation may best be achieved by empowering women through vocational and life skill development. By training India's most unskilled population to build, use and maintain toilets, the problems of poor sanitation, community buy-in, as well as unskilled labor may be simultaneously addressed. This paper will discuss findings from the early stages of the WE: Sanitation intervention in rural villages within the Indian states of: Karnataka, Gujarat and Goa, where previous sanitation efforts have failed to take hold.

Introduction

Basic sanitation facilities are inaccessible to 40 percent of the world's population (World Health Organization 2014). India is at the top of the list, where 60 percent of the nation practices open defecation, the greatest proportion of any country in the world (World Health Organization and UNICEF 2014). Inadequate access to a toilet has far-reaching impacts on an individual, and ultimately an entire community's physical and socio-economic well being (Fisher 2006).

Girls and women in rural India are disproportionately affected, having to sacrifice their personal security to walk greater distances to relieve themselves in privacy and dignity and face an increased risk for sexual violence, diarrheal and female health related illnesses (UN Water, 2008; WSSCC et al. 2013). These negative repercussions have subsequently shown to impact

their ability to complete school or participate in the formal economy (Burra 2003; Coffrey et al. 2014; Kov et al. 2008). While it is generally acknowledged that poor access to sanitation has immense impact on the environment and society at large, efforts to substantiate this claim have until recently, been mostly lacking (Kov et al. 2008).

The challenges to improving sanitation in India are manifold and are often imbedded in particular milieus of the impacted population: those most affected by poor sanitation access often cannot afford the construction cost of toilets despite the provision of subsidies (Kar 2003); there is an absence of the technical know-how to actually build sanitation infrastructure due to a shortage of skilled labor in rural India (Gupta et al. 2014; The Economist Intelligence Unit 2015); and finally, a widespread dearth of awareness on hygiene and sanitation exists among much of the population, as well as the myriad cultural beliefs around cleanliness in India complicates the community acceptability of sanitation interventions in India (Coffrey et al. 2014).

The limited extent to which sanitation projects have achieved social inclusivity among rural women is also recognized as a contributing factor to the persistence of poor sanitation in India (UN Water 2008; Coffrey et al. 2014). Social inclusivity in sanitation means engaging the community in the entire process of improved sanitation, including where and how toilets are built, and in awareness of the benefits of using a toilet. Therefore, in order for sanitation development to achieve social inclusivity, strategies must incorporate the participation of women in rural India (United Nations 2009).

An important but relatively unexplored connection with poor sanitation is that women living in rural India are not only the largest marginalized group without access to adequate sanitation facilities, they also represent a substantial portion of India's unskilled workers (Inter-Agency Task Force on Rural Women 2011; United Nations 2009). Development tactics that emphasize the participation of women have shown to be more effective in resulting in gender equitable development (United Nations 2009). This paper will explore an approach that places the Fifth Sustainable Development Goal (SDG) to, "achieve gender equality and empower all women and girls," at the center of SDG Six to, "ensure availability and sustainable management of water and sanitation for all," with a focus on ending open defecation in rural India.

By training women to build their own toilets, through an approach that has demonstrated success in empowering marginalized communities through technical and vocational education and training (TVET), a collaborative dynamic emerges that can engage entire communities in the movement towards total sanitation. Designed and implemented by Amrita University, this technology-enhanced, community-based approach to skill development, known as Amrita computerized vocational education and training (Amrita cVET), has begun to show promise in addressing the struggle to end open defecation, raise sanitation awareness, as well as strengthen personal and community development among women living in rural India.

The project, entitled Women Empowerment: Sanitation (WE: Sanitation) is currently in implementation in seven states throughout India, as of June 2015. This paper will discuss the early stages of the intervention in rural villages within the Indian states of: Karnataka, Goa, and Gujarat where previous sanitation efforts have failed to take hold. We will describe how Amrita cVET, because of its this technology-enhanced, community-based approach to skill development, has begun to show promise in addressing the struggle to end open defecation and raise sanitation awareness, as well as strengthen personal and community development among women living in rural India.

Current Sanitation Efforts

India currently accounts for 60 percent of the open defecation that is practiced globally (Briceno and Eisenbraun 2014). In response to this startling statistic, the government of India recently set a national goal to end open defecation by 2019 (Coffey et al. 2014). However, as a comprehensive study by the Rice Institute on sanitation trends in India suggests, solutions that have been successful in mitigating the same crisis in other developing countries (i.e. Cambodia and Bangladesh), have failed to result in similarly favorable outcomes in India (ibid). Through a survey of over 3,000 households in villages throughout Northern India on their sanitation practices and preferences, the study finds that building toilets alone, which government and non-governmental agencies have accomplished in impressive numbers, is not enough; a considerable percentage of individuals even with working toilets were found to still practice open defecation due to a lack of awareness or appreciation for the associated benefits (ibid). The authors conclude that what may be just as critical as building more toilets, is building the demand for using toilets by increasing awareness on the detrimental health and environmental impacts of open defecation (ibid).

Community development approaches that are collaborative in nature have demonstrated greater success in tackling development challenges by empowering and adapting to the unique nuances of a community (Kar 2003). A World Bank study on sanitation in Himachal Pradesh found that shifting gears from subsidy driven sanitation initiatives, to strategies that incentivized entire communities to build toilets effectively led to social inclusive in improved sanitation (Das et al. 2015). Additionally, research has shown that the likelihood of adopting the habit of toilet use is greater when individuals are involved in the construction process (Coffrey et al. 2014).

Community Development via Amrita cVET

Empowerment literature indicates that empowering women with equal economic opportunity and the knowledge and skills to make informed life decisions are the most effective ways to reduce poverty within communities (Asian Development Bank 2014). Preliminary outcomes of the WE Project are consistent with this claim.

Working towards the objective of socially inclusive TVET, the Amrita cVET model was first implemented on a large scale through the Women Empowerment (WE) Project from 2012 to 2014 in rural areas throughout Kerala and Tamil Nadu (Transtec 2014). The purpose of the WE Project, funded in part by the United Nations Democracy Fund, was to economically and socio-democratically empower women through vocational education and life enrichment education (LEE) using Amrita cVET. The project targeted women who self identified as struggling toward financial independence. By training more than 4,000 women living in rural areas throughout India, Amrita-cVET demonstrated its capacity to reach this marginalized group in India. Amrita cVET also demonstrated tangible gains with respect to the participants' economic and socio-democratic empowerment (Transtec 2014).

Amrita cVET

Amrita cVET encapsulates an entire vocational education course into a computerized, multi-media enhanced learning management system (Bhavani et al. 2010). The video tutorials and interactive multimedia workbooks minimize the need for a live skilled trainer (ibid). The simulator technology facilitates the translation of theoretical procedural knowledge to practical application, guided by a trained expert (ibid). By the end of a course, learners are fully trained in the vocation and qualified for employment in their respective fields.

Through the WE Project, Amrita cVET's focus on integrating LEE into its vocational education curriculum was found to have a positive impact on learners' post-training outcomes to earn a living and other areas of personal empowerment (Transtec 2014).¹ Learners described the training experience as transformative in raising levels of personal confidence, self-esteem, self-efficacy, and feelings of personal dignity in connection with learning a vocational skill through technology, which are recognized factors in the transfer of learned skills into income generating efforts (Bandiera 2012). Results from the post course evaluation (as measured 3 months following course completion) indicated that participation in the Amrita cVET course also had a positive impact on post-course employment. An association between decision-making and self-confidence, especially in feelings of usefulness, and an ability to speak in public and perceived self-efficacy, were also observed. An evaluation of participants' decision-making patterns (measured through pre- and follow-up surveys) revealed that communication between the participant and head of household (as identified by the participant), as understood through joint decision-making, also improved.

In addition to these significant changes at the individual level, what began to manifest over the course of the WE Project was a culture of community action initiated by students of the Amrita cVET courses. Development literature commonly describes the plight of women in developing countries as having to shoulder the responsibility of primary caretaker and food-producer, while simultaneously facing a lack of monetary resource support and a slew of societal gender barriers, limiting their ability to effectively participate in critical personal, family and community decisions (Kabeer et al. 2013). A shift in this trend emerged over the course of the WE Project as students began to identify community issues they deemed significant, and then planned and executed over 70 community-action plans to tackle these issues within their own communities (Transtec 2014). Participants credited the Amrita cVET approach as the catalyst for the transformation they observed within themselves and their communities.

Beyond these measured results, observations from the WE Project also confirmed what frequently appears in the empowerment literature: women living in poverty face a series of social deprivations that go beyond the issue of limited access to skill development, hindering their ability to effectively transform learned skills into a livelihood (Kabeer et al. 2013). Inadequate access to sanitation stands as one of the greatest areas of deprivation threatening the overall well-being of marginalized groups, particularly girls and women (Kov et al. 2008). Given the successes achieved in empowering women and communities through Amrita cVET, Amrita University has begun to explore how skill development, delivered through the WE Project approach, might address the problem of open defecation and access to sanitation in rural India.

WE: Sanitation– Pilot Study

Implementation of Amrita cVET as a means towards ending open defecation was initially piloted in the village of Bhoi Sahi, Odisha, under the banner “WE: Sanitation,” an extension of the WE Project. In training women who lack access to adequate sanitation to learn and work together in building toilets for themselves, the ultimate goal of WE: Sanitation is to empower the entire community to construct a toilet for every house in the village, to end open defecation wherever possible.

¹ For more information on Amria cVET: Sheshadri, S., Coley, C., Jagadeesh, S., Kongeseri, S., Devanathan, S., Rao. R., B. (2014, March). *Community Centric Vocational Education: A Strategy for Implementation of Computerized TVET Delivery in Rural India*. Forthcoming Published Paper presented at the *International Conference on Emerging Trends in Technical and Vocational Education and Training – Vision 2025*. Bhopal, MP

In Odisha, over a 3-month period, 20 women were trained to build toilets for their households and demonstrated improvements in their daily sanitation and hygiene practices. Prior to WE: Sanitation, there were no toilets in the village of Bhoi Sahi, Odisha. Women had to walk more than a kilometer to find a secluded area to relieve themselves, and restricted their bowel movements to once before dawn, once after dark, and for safety reasons, only in the company of other women or female family members. Despite these apparent challenges, according to the women of Bhoi Sahi, access to a proper toilet was never perceived as a basic need. This finding reflects a pervasive lack of awareness of the personal health and environmental impacts of open defecation (Coffrey et al. 2014). The *preference* for open defecation is also precisely why sanitation efforts to provide toilets where there are none, often fail to transcend deeply rooted attitudinal and behavioral norms (ibid).

Since successfully completing the Amrita cVET course by working together to build 20 toilets for everyone in the group, the first batch of toilet builders went on to build 35 toilets for the remaining families of the Bhoi Sahi village. In many instances, while the women building the toilet received a payment for their services from the homeowners, members of the household joined in on the building of their own toilet. Additionally, several students reported that they continue to educate themselves further and investigate opportunities for sanitation improvement in their community. Following the successful completion of the pilot study in Bhoi Sahi, WE: Sanitation was expanded to seven villages in seven states throughout India: Karnataka, Goa, Gujarat, Uttar Pradesh, Rajasthan, Uttarakhand, and Himachal Pradesh.

Community Engagement

WE: Sanitation was modeled after best practices developed during the WE Project. While the WE: Sanitation program is currently ongoing in several states in India, the following is based upon the experience and observations of field researchers and participants involved in the implementation of the program in Karnataka, Goa, and Gujarat. A brief description on each village obtained through observations of the project's field staff and informal interviews with villagers, is provided to contextualize the findings.

Byse, Karnataka

Byse village, a community of nearly 500 families, is in the Shimoga District of Karnataka, and is an interior forest land, about 50 km from a major town. In conversation with community members during the outreach meeting, the field staff learned that Karnataka follows the national "Swachh Bharat Mission" (or Clean India Mission) guidelines for private and public toilets, which does not enforce any specific toilet design or structural requirements beyond a standard one soak pit system. While the Gram Panchayat (or the local governing body) began accepting applications for toilets under the Swachh Bharat scheme, only ration card holders officially recognized as living "below the poverty line" (BPL) were eligible to apply. As the Clean India initiative is applied nationally, qualifying households receive their reimbursement for building the toilets in stages, once the presiding officer has approved the building as complete. In speaking with villagers who would have been eligible for the initiative given their economic status, they revealed the initial investment to build the toilet was beyond their means and was perceived as a financial risky investment. However, as the report by Rice Institute (Coffey et al. 2014) confirms, even families recognized as living "Above the Poverty Line" (APL), reported that they struggled to make ends meet and admitted that building a toilet was not at the top of their list of needs. Some Byse villagers revealed a lack of concern for the potential environmental threats caused by open defecation, due to the sparseness of the village.

Malcopton, Goa

There are 86 houses in the Malcopon village of Goa. A door-to-door assessment of the toilet situation revealed that 37 households in the village did not own a toilet, and 30 were either broken/unused, leaving about 19 out of 86 homes that in the villager's words, "were sometimes used toilets if the toilets were in decent condition." While several households received free toilets through a government initiative 10 years prior, the deteriorated condition of the toilets due to structural damage or inadequate maintenance, rendered them unusable. Through informal interviews, villagers reported a lack of knowledge on the following: how to properly maintain their toilets, how to use the twin-pit system, which often resulted in premature filling and subsequently, the process involved in migrating to a new pit, once the pits were full. Some villagers admitted they no longer used their toilets provided by the government out of fear that the dilapidated structures would collapse on them, and have as a result, returned to practice open defecation.

Nani Borwai, Gujarat

The village in Gujarat is named Nani Borwai, and is in a mixed, rural and industrial district around 80km northeast of Ahmedabad. The village population, around 500 people, is homogenous in terms of caste (general) and religion (Hindu). Villagers are primarily farmers, whose land is being slowly encroached on by brick factories and other industrial operations. They are poor, but still able to meet most of their basic needs. Health is a major problem in Nani Borwai, with "mysterious" illnesses, as described by the locals, often sweeping through the village, affecting mostly children and the elderly. We found later that waterborne illnesses are predominant, especially during the rainy season. At the launch of the WE: Sanitation project, only one toilet existed in the village. When the villagers were asked during the initial outreach, everyone wanted a toilet and many seemed enthusiastic to join a training to make their own. This positive outlook helped us to engage the people of Nani Borwai in the initial outreach, and made the job of explaining the benefits of using a toilet, and in empowering women to build them, much easier.

The following section describes key elements that helped the Amrita cVET deployment process develop community-buy in, which was found to be critical in establishing a community-based approach in Karnataka, Goa, and Gujarat.

Community Outreach

Based upon the process established during the WE: Project, the initial community outreach meeting is an essential first step in engaging marginalized groups in a discussion on the WE: Sanitation program. The outreach meetings provide an opportunity for the field staff to effectively communicate the objectives of the WE: Sanitation program, spread awareness about the importance of basic sanitation and hygiene, explain the particular advantages to learning the skills involved in toilet building, and assess community receptivity.

The vast distance between houses in Byse made it difficult to hold one meeting that would accommodate the entire village. As a result, several smaller meetings, facilitated by the members from the local government were held. The active participation by local leadership during the outreach meetings helped lend credibility to the intervention. With members from the local government available for questions, villagers were also able to verify their eligibility for the Clean India initiative, to help them decide whether they should consider participating in the WE: Sanitation intervention or pursue the government handout.

Through the outreach meetings, members also gained an understanding of how the Amrita cVET Toilet Building Course, as a sanitation intervention, differed from other handouts or subsidized development efforts, the community may have been more familiar with (Bura and

Patel 2003). This distinction was particularly important to make in the Malcopon village, which until now had only been familiar with non-collaborative approaches to development. As a result, grasping the notion of: learning to build your own sanitation infrastructure was met with initial perplexity. This was addressed by emphasizing the formalized skill development aspect of the initiative.

These meetings were not without their challenges, especially at times in encouraging female participation and in explaining to the men the importance of providing skill development for women. During the outreach programs in Gujarat with the village leaders over the course of several days, the project field staff was told repeatedly not to have high expectations for the women's participation long-term. They explained that the women would come for the first meeting—to satisfy the field staff—but not much after that. The meetings often began with discouraging comments couched in polite agreements. The challenge was to establish an understanding within the community that investing in women's education carries the potential of high return for both men and women in the village; that empowering women leads to a stronger community, with the other half of the population better able to contribute to the general well-being and to more stable family dynamics.

The outreach meetings also served to explain the Amrita cVET course structure and daily schedule, which was generally described as: computerized vocational training lessons delivered through tablets or laptops (which the students are taught to operate), practical hands-on sessions supervised by a resource expert, and Life Enrichment Education (LEE) sessions on hygiene, sanitation, and women's health. During this initial meeting, the community is made aware of the personal health and environmental benefits of owning and using a toilet. Through this open forum, community members are invited to discuss their views on sanitation and hygiene, providing the field staff with a baseline sense of knowledge levels and attitudes towards sanitation.

To help potential course participants decide on whether the course is something they even have time for, a discussion on the average time commitment required to complete the course takes place. Taking into account the women's and community's needs enabled the field staff to learn about the lives and responsibilities of the women in the community. In Byse and Malcopon, a majority of women expressed initial hesitation over joining the course due to lack of time, already having to work in the fields full time, as well as care for their family's basic needs at home (cooking, cleaning, washing, further complicated by the task of collecting water and wood from a distance). The discussion on what women, specifically could stand to gain from learning skilled labor such as masonry and plumbing (which hold high earning potential in India's labor market), as well as the health benefits of owning and using a toilet, became critical to the successful implementation of the program.

Finally, once the community has a sense of the commitment involved, those interested in enrolling jointly decide on a schedule that would best accommodate their other duties (i.e. field work, house work, etc.). In Byse, the women decided they could dedicate 5 to 6 hours a day to the course (with an hour and half break for lunch and midday chores) due to the free agricultural season; while in Goa, the group decided they could only spare 3 hours a day, since it was cashew season, the village's most important cash crop. The batch later decided to increase their hours to 5 hours a day.

Collaborative Learning

During Amrita cVET's pilot phase, it was found that women unfamiliar with formal learning environments preferred learning in groups. Peer or group learning was found to help mitigate the learning curve for learners unfamiliar with formalized skill training. Elizabeth Hill (2001) reinforces this observation in her study of women transitioning into their identity as group members. Amrita cVET was accordingly designed to develop and strengthen a sense of community within and outside of the classroom.

Collaborative learning took place through group tasks, problem solving and discussion-based activities in the practical skill development and life skill discussion sessions. In construction of the toilets during the practical sessions, students were directed to form working groups. The women in the course presented a tendency to form large groups of 7 to 10 people per group. This proved to be counterproductive to ensuring each student received meaningful hands-on learning opportunities. Innately motivated students tended to do all of the work, while shy and socially inverted students tended to stay back. A group size of 4 to 5 students per group was found to be optimal in ensuring each student gained hands-on learning experience and developed a connection with the toilet during the building process.

The emphasis on life skills through the Amrita cVET integrated curriculum offered a platform for raising awareness and discussion on sanitation, hygiene, and female health concerns associated with open defecation. The life skill sessions consisted of multimedia enhanced video classrooms on hygiene and sanitation, followed by a facilitated group discussion to reflect and respond. Through this forum of all female peers, students in Byse reported through daily feedback discussion sessions that the comfort of the group dynamic motivated their feeling to share their knowledge and views on sanitation, hygiene, and personal health concerns.

During the course, students were encouraged to share the information they learned on good hygiene and sanitation with other members of the community. In Byse, the students taught their children what they learned on how disease spreads and the importance of toilet use. The children of the students, in turn, presented an awareness play to the entire community. In Malcopon, after a LEE session on the connection between environmental and personal health, the students were motivated to mobilize a village cleanup drive. In Nani Borwai, the women came to the local after-school tutoring lessons and taught proper hand washing and checked every child for lice. Such examples of community action demonstrate that while WE: Sanitation directly and more immediately impacted the students enrolled in the Amrita cVET course, indirect benefits of raised community awareness and action began to appear. Additionally, as students found themselves in the role of community educator, a space emerged where they began to process the idea of adopting new habits, as well as reflect on the impact of their choices associated with daily hygiene and sanitation habits.

Accessibility

Distance to vocational training centers stands as one of the main reasons TVET has remained inaccessible to women in rural areas (Gupta et al. 2014). Since Amrita cVET courses are accessible through computer tablets or laptops, and the practical sessions involve building of actual toilets in the village, the Amrita cVET skill development centers were set-up directly in the villages, either in the open space of a student's home as in the case of Byse, a rented space as in Nani Borwai, or in a community hall as was the case in Malcopon. Placing the skill development center directly in the village also allowed for greater inclusiveness and transparency, which carried important implications for how the community at large perceived the sanitation intervention. Often, community members from the village would join the life skills sessions, and help brainstorm solutions to community issues being discussed.

Discussion

Since the launch of WE: Sanitation, 95 women living in seven states throughout India have completed the Amrita cVET course on toilet building, and successfully built 86 toilets for their families. As the WE: Sanitation program expands throughout rural India, continuous monitoring and follow-up will be critical in confirming the intervention's long-term success (Fisher 2006). The simultaneous implementation of WE: Sanitation Outreach in several villages throughout rural India also confirmed that the issue of open defecation is as complex as it is widespread. It is apparent that what is required is more than a "one size fits all," solution that can only be achieved through community based approaches that maintain inclusivity.

While in its preliminary stages, the implementation of Amrita cVET has begun to indicate improvements over the way sanitation problems are conventionally addressed. The most pronounced difference is the inclusion of women, taking an active role in the development of sanitation infrastructure, raising awareness levels within their community on the importance of proper sanitation, and even mobilizing community action. Additionally, while WE: Sanitation has demonstrated direct and immediate impact on the students enrolled in the Amrita cVET course, indirect benefits of raised community sanitation awareness and action have begun to appear.

By leading with skill development, participants recognized the opportunity for better sanitation as an opportunity for better livelihood. While not every student enrolled in the Amrita cVET course voiced plans to pursue the learned skills as a livelihood, an observable sense of ownership in the process of ensuring their family practiced better sanitation was evident. By positioning students in an environment where they learn and work together towards community development, a culture of addressing personal and social problems collectively also begins to emerge. These initial observations and indications, while promising, warrant further exploration to better understand the specific points of impact.

Conclusion

Access to proper sanitation is most critical for women and children, who also often lack the voice in their household or community to express themselves (Kov et al. 2008). This makes it difficult to assess and then address the true impact of the problem. Empowering women through skill development proposes that the goal of improved sanitation may be achieved through the goal of empowering women through skill development and life skill education. The union of these sustainable development goals leverages an approach that is collaborative and socially inclusive. Successes of the WE Project demonstrated immense potential in developing the inter- and intrapersonal capabilities within women to address the problems around them by becoming economically and socially empowered (Transtec 2014). As WE Project approach of empowering women through skill development is applied to the problem of sanitation, preliminary findings suggest positive results in the way of placing this generally marginalized population at the center of the solution to end open defecation.

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