

## Original Research Article

# Barriers to latrine use for defecation among mothers of children less than 59 months

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## ABSTRACT

**Background:** India has high concentration of its population who defecate outdoors or at least 620 million people who practice open defecation. This share has seen a slight decline in the past decade but with rapid population growth most Indians are being exposed to more human waste than ever before.

**Methods:** This paper aims to study what is preventing the mothers of children 0-59 months in using latrine for defecation at all times through barrier analysis survey. It is a doer and non-doer study, a doer is defined as mothers of children 0-59 months of age who defecate in a latrine at all times and a non-doer are mothers of children 0-59 months of age who do not defecate in a latrine at all times.

**Results:** Mothers who use latrine felt that having a latrine close to their residence or a private latrine makes it easy for them to use latrine every time for defecation. Clean environment was considered as an advantage among those who use latrine every time. They feel it is safer from harm if a latrine is used every time for defecation. Mothers who did not use a latrine felt very difficult to remember to use a latrine each time for defecation. Also those who do not use latrine feel that no toilet or a land to build one makes it difficult for them in making use of a latrine every time for defecation.

**Conclusions:** The determinants studied will help in carefully addressing the barriers through targeted activities to encourage and promote the use of latrine. Action-oriented programs like community led total sanitation (CLTS) for overall behaviour change, help mothers to grow increasingly confident about the use of latrine and in overcoming the hurdles in using latrine at all times and also avoid relapse into open defecation.

**Keywords:** Barrier analysis, CLTS, Doer, Latrine, Mothers of children under 5, Non-doer

## INTRODUCTION

India has high concentration of its population who defecate outdoors or at least 620 million people who practice open defecation. This share has seen a slight decline in the past decade but with rapid population growth most Indians are being exposed to more human waste than ever before. India has almost 60 per cent of its population practice open defecation and the prevalence of childhood stunting remains very high.<sup>1-4</sup> Census 2011 threw its light on 'missing toilets' highlighting the fact that, only 35 per cent of the rural population use functional toilets which is a major social sector service delivery challenge in India.<sup>5</sup> Poor sanitation, hygiene, and water are responsible for about 50 per cent of the consequences of childhood and maternal underweight, primarily through the synergy between diarrhoeal diseases and under nutrition.<sup>6</sup> Open defecation is a threat, with consequences that may last long or may even take lives of children.<sup>7</sup> Sanitation interventions can be effective in reducing a range of important health outcomes, including diarrhoeal diseases.<sup>4</sup> Diarrhoea is prominent among the serial killers, India has largest number of under-five deaths reported primarily due to diarrhoea.<sup>7</sup> Open defecation invites transmission of infection through the faecal-oral pathway diminishing growth, cognitive abilities and human productivity.<sup>8</sup> Open defecation is common in rural India where 70 per cent of the national population reside.<sup>9</sup> Use of latrine is influenced by household-level decision about whether or not to own a latrine and person-level decision about whether or not to use a latrine.<sup>9</sup> Open defecation also has consequences on women's dignity and safety, environment and economy.<sup>10</sup> Lack of space and unsanitary conditions hinders regular use of latrine.<sup>10</sup>

World Vision India works in 191 districts impacting 26 lakh children and their families in over 6200 communities spread across 25 states and the National Capital Region of India. WV India's WASH program has focused on providing sustainable water, sanitation and hygiene services and over 600000 people have been sensitized on sanitation and hygiene through demand generation activities. As one approach to trigger toilet construction and use, World Vision India has taken up the approach of Community-Led Total Sanitation (CLTS). To strengthen program and aid behaviour change among larger group of population addressed in achieving total sanitation it is essential to understand the barriers that exist to prevent the use of latrine. For this a formative research was planned to study and understand the barriers in the use of latrine among mothers of children under 5 years of age.

## METHODS

This paper aims to study the most influential determinants in use of latrine for defecation among mothers of children 0-59 months of age. Determinants studied include perceived self-efficacy, perceived social norms, perceived positive consequences, perceived

negative consequences, access, and cues for action/reminders, perceived susceptibility, and perceived severity, perceived divine will, policy, culture and universal motivators. To understand the determinants a barrier analysis survey was planned to identify what is preventing the mothers of children 0-59 months in using latrine for defecation. A field tested barrier analysis questionnaire was used with two sections. Section A is to screen the study participants as doer or a non-doer of the behaviour. Section B included the research questions to study the determinants in the use of latrine. A group of six participants trained in barrier analysis were involved in the study. A doer is defined as mothers of children 0-59 months of age who defecate in a latrine at all times and a non-doer are mothers of children 0-59 months of age who do not defecate in a latrine at all times. Quality improvement verification checklist was maintained for the doer/non doer interview.

## Study group description

A total of 98 responses were collected from six geographical locations which include Lucknow in Uttar Pradesh, Ranchi in Jharkhand, Bhopal in Madhya Pradesh, Gundlupet in Karnataka, Marugapuri and Perambalur in Tamil Nadu of which 45 were doers of the behaviour and 53 were non-doers of the behaviour. The study participants were in the age group of 18-40 years living in both rural and urban area. Their source of income and livelihood is agriculture and daily labour earning INR 180 per day to INR 500 per day. Mothers here speak Kannada, Tamil, Hindi, Shadri and Santhali and most of them have done their primary schooling, and a few unschooled. The participants were mostly Hindus and a few were Muslims, Christians, Baudh and Sarna religious beliefs.

Mothers who were part of the study engaged in house work and agricultural work during the day. They engaged themselves in neighbourhood gathering, temple visit, market visit, harvests, drying grains, ploughing fields, tailoring, observation of religious rituals and festivals throughout different seasons in a year. Mothers kept themselves free in the evening and at night.

## RESULTS

The results of the formative research is vital to draw a bridge to activity linking the determinant with an activity and a planned change in the determinant.<sup>11</sup> Analysis of barriers to latrine use for defecation among mothers of children less than 59 months came up with significant responses under the determinants studied (Table 1).

Mothers who use latrine felt that having a latrine close to their residence or a private latrine makes it easy for them to use latrine every time for defecation by 2.2 times than those mothers who do not. (OR: 2.37 [95% CI: 0.99 - 5.66]). About 73 per cent mothers who practice the behaviour feel that nothing makes it difficult for them to

use a latrine every time for defecation however 40 per cent mothers who do not use latrine feel that no toilet or a land to build one makes it difficult for them in making use of a latrine every time for defecation (OR: 0.03 [95% CI: 0.00 -0.27]).

Clean environment was considered as an advantage among those who used latrine every time. Users responded 2.5 times more than those who do not use (OR: 2.72 [95% CI: 1.20-6.17]). At the same time mothers who do not use a latrine were 2.6 times likely to say that, it requires only less time if a latrine is used every time for defecation (OR: 0.36 [95% CI: 0.13-1.01]) moreover they feel it is safer from harm (attack, rape, harassment) if a latrine is used every time for defecation ( $p=0.001$ ).

Mothers who do not use latrine responded 32.8 times more than those who did not use saying it is very difficult to access a latrine each time for defecation. (OR: 0.03 [95% CI: 0.00-0.20]) About 45 per cent mothers who did not use a latrine felt very difficult to remember to use a latrine each time for defecation. About 62 per cent of the mothers who use latrine felt it is not likely at all for family members to get diarrhoeal disease in next 3 months ( $P=0.003$ ). And 81 percent of those that did not use a latrine felt it is very serious if family member gets diarrhoeal disease however 71 per cent mothers feel that using latrine would prevent family members from getting diarrhoeal disease ( $p=0.014$ ).

**Table 1: Self-efficacy to latrine use among mothers of children less than 59 months.**

Determinants	Doers%	Non-doers%	Odds Ratio	Confidence Interval		Estim. Relative Risk	p-value
				Lower limit	Upper limit		
Self - efficacy: What makes it easier?							
Toilet is close/private	76%	57%	2.37	0.99	5.66	2.19	0.039
Having a toilet	24%	34%	0.63	0.26	1.53	0.66	0.21
having water	9%	6%	1.63	0.34	7.68	1.53	0.408
Self - efficacy: makes it difficult:							
Nothing	73%	38%	4.54	1.91	10.76	3.91	0
Not having easy access to water	16%	11%	1.44	0.45	4.66	1.38	0.374
Expensive soap or cleanser	4%	4%	1.19	0.16	8.78	1.16	0.627
No toilet/land to build one	2%	40%	0.03	0	0.27	0.04	0

## DISCUSSION

Utilization of latrine is the first step on the sanitation ladder. Promotional messages to encourage utilization of latrine for defecation and its role in prevention of faecal-oral diseases has largely failed to motivate changes in sanitation behaviour.<sup>12</sup> There exist social barriers that hinder the use of latrine by mothers or there may be an inherent gender imbalance or it may be that the demands on women's time constrain and their access to a facility.<sup>13</sup> There is an urgent need to understand and address the barriers faced by women in using sanitation facilities. Mothers who use latrine felt that a toilet close to their residence or owning a private latrine makes it easy for them to use latrine every time for defecation moreover they even felt that availability of a toilet and having water as necessary elements to practice the behaviour. In developing country context there exist a divide between men and women in sanitation and hygiene behaviour. In Indian context where men are key in decision making at home women's concerns are rarely addressed moreover their views are opposed or underrepresented in decision making.<sup>14</sup>

Mothers who use latrine felt that nothing makes it difficult for them to use a latrine every time they use. However those mothers who do not use latrine feel that no toilet or a land to build one makes it difficult for them in making use of a latrine. People who have lived a life without latrine find it difficult to practice use of latrine as they have lived their entire life lived without it and their limited resources to invest in sanitation makes it even more difficult for them. Even if they are convinced to build and use a latrine the perceived high cost of installation keeps many of them from adopting latrines.<sup>15</sup> Only a few among those that use and do not use latrine responded that, having easy access to water and expense incurred in buying soap makes it difficult for them to use a latrine (Table 1). Frequently identified barrier to latrine use is difficulties in operation and maintenance.<sup>15</sup> Mothers also shared that lack of resource, money, narrow space, smell from latrine and inadequate ventilation makes it difficult for them to use a latrine.

Study participants both who use and do not use a latrine perceived that use of latrine has a positive consequence on preventing snake and bug bites, prevents diseases and

provides a clean environment. Studies site that local beliefs that exist in communities influence households in creating perceptions that certain locations within the land is inauspicious to place a latrine, so people refuse to use them.<sup>16</sup> Participants who use latrine understood the attribute of a clean environment 2.5 times more than those that did not use latrine. They also expressed having a latrine close to residence helps them to spend less time for nature's call moreover a few of them responded that they do not have to leave their children behind and they also feel it more comfortable during night and in rainy season. They even shared the relief of using a latrine in episodes of diarrhoea and the comfort and privacy enjoyed. Significant number of mothers who do not use latrine responded that, use of latrine provide them safety

from harm which include attack, rape or harassment. Women require more privacy than men and fail to use those facilities that they feel give inadequate protection.<sup>15</sup> About 82 per cent mothers who use latrine and 75 per cent who do not use a latrine perceived that there is no negative attribute of using a latrine. Negligible respondents perceived that using a latrine consume too much of water and it gets dirty often and requires constant cleaning (Table 2). Majority of the mothers responded that their husband, in-laws and children approve of them using a latrine every time and felt that no-one disapproves them in using a latrine however a very few among those that use latrine (7 per cent) and who do not (9 per cent) expressed that their in-laws and grandparents disapprove them in using a latrine (Table 3).

**Table 2: Positive and negative consequences to latrine use among mothers of children less than 59 months.**

Determinants	Doers %	Non-doers%	Odds Ratio	Confidence Interval		Estim. Relative Risk	p-value
				Lower Limit	Upper Limit		
Positive Consequences: What are the advantages?							
Prevent beg/snake bites	20%	34%	0.49	0.19	1.23	0.52	0.094
Prevent diseases	64%	47%	2.03	0.9	4.58	1.89	0.065
Clean environment	62%	38%	2.72	1.2	6.17	2.45	0.013
Less Time	13%	30%	0.36	0.13	1.01	0.39	0.039
No need to leave child	11%	8%	1.53	0.39	6.08	1.46	0.396
More comfortable during night/rain	9%	8%	1.2	0.28	5.08	1.17	0.547
Safe from harm (attack, rape, harassment)	2%	25%	0.07	0.01	0.56	0.08	0.001
Negative Consequences: What are the disadvantages?							
None	82%	75%	1.5	0.56	4.04	1.45	0.287
Uses too much water	9%	11%	0.76	0.2	2.9	0.78	0.479
Gets dirty (needs cleaning)	13%	11%	1.21	0.36	4.04	1.18	0.5

**Table 3: Social norms in latrine use among mothers of children less than 59 months.**

Determinants	Doers %	Non-doers %	Odds Ratio	Confidence Interval		Estim. Relative Risk	p-value
				Lower Limit	Upper Limit		
Social Norms: Who approves?							
Husband	56%	55%	1.03	0.47	2.3	1.03	0.548
In-laws	42%	45%	0.88	0.4	1.97	0.89	0.46
Children	11%	6%	2.08	0.47	9.25	1.89	0.27
Social Norms: Who disapproves							
No one	89%	91%	0.83	0.23	3.08	0.85	0.521
In laws/grandparents	7%	9%	0.69	0.15	3.04	0.71	0.453

Mothers who do not use a latrine expressed that it is very difficult for them to get a latrine but those that use latrine expressed that they had no difficulty in accessing a latrine facility. Mothers who do not use latrine expressed the fact that years of practice of open defecation has made them

habituated to the behaviour of open defecation which make it very difficult for them to remember to use latrine every time (Table 4). Hence in spite of having toilet at home, due to the availability of waste land close by they prefer to go for open defecation. Mothers who use latrine

felt that their family members are not likely at all to get diarrhoeal disease in next 3 months ( $P=0.003$ ). Also 81 per cent of those that did not use a latrine believe that it is very serious if family member gets a diarrheal disease. Mothers feel that using the latrine every time will prevent

children and family members from contracting with diarrhoeal diseases however more mothers that use latrine feel that their family members are not likely at all to contract from any diarrhoeal disease.

**Table 4: Barriers in access, reminders, risk, severity and action efficacy in latrine use among mothers of children less than 59 months.**

Determinants	Doers%	Non-doers%	Odds Ratio	Confidence Interval		Estim. Relative Risk	p-value
				Lower Limit	Upper Limit		
Access - how difficult is it to get a latrine/toilet?							
Very difficult	2%	47%	0.03	0	0.2	0.03	0
Somewhat difficult	9%	13%	0.64	0.17	2.35	0.67	0.365
Not difficult at all	89%	38%	13.2	4.47	38.99	10.67	0
Reminders - how difficult is it to remember to do the behaviour?							
Very difficult	2%	45%	0.03	0	0.21	0.03	0
Somewhat difficult	9%	8%	1.2	0.28	5.08	1.17	0.547
Not difficult at all	89%	47%	8.96	3.06	26.25	7.58	0
Risk- How likely to get a diarrheal disease?							
Very likely	4%	40%	0.07	0.02	0.32	0.08	0
Somewhat likely	33%	28%	1.27	0.54	3	1.24	0.374
Not likely at all	62%	32%	3.49	1.51	8.03	3.05	0.003
Severity - How serious is the problem?							
Very serious	44%	81%	0.19	0.08	0.46	0.23	0
Somewhat serious	36%	17%	2.7	1.05	6.92	2.38	0.031
Not serious at all	20%	2%	13	1.58	107.15	6.51	0.004
Action Efficacy - will doing the behaviour prevent the problem?							
Very likely	18%	32%	0.46	0.18	1.19	0.49	0.082
Somewhat likely	11%	23%	0.43	0.14	1.32	0.46	0.108
Not likely at all	71%	47%	2.76	1.19	6.39	2.5	0.014

**Table 5: Divine will, policies and cultural barriers in latrine use among mothers of children less than 59 months.**

Determinants	Doers %	Non-doers %	Odds Ratio	Confidence Interval		Estim. Relative Risk	p-value
				Lower Limit	Upper Limit		
Divine Will - does God approve of you doing the behaviour?							
Yes	71%	64%	1.38	0.59	3.23	1.33	0.304
Maybe	2%	8%	0.28	0.03	2.59	0.3	0.236
No	29%	28%	1.03	0.43	2.48	1.03	0.563
Policy - Any community laws/regulations that make is less likely you will do the behaviour?							
Yes	33%	25%	1.54	0.64	3.71	1.47	0.23
Maybe	7%	8%	0.88	0.19	4.13	0.89	0.592
No	60%	68%	0.71	0.31	1.62	0.73	0.273
Culture - Any cultural rules/taboo against the behaviour?							
Yes	2%	2%	1.18	0.07	19.45	1.16	0.71
Maybe	2%	4%	0.58	0.05	6.61	0.61	0.562
No	98%	94%	2.64	0.26	26.31	2.47	0.373

On understanding the divine will 71 per cent users of latrine and 64 non users of the study participants felt that their gods approve them of using a latrine every time. However 29 per cent mothers who use latrine and 28 per

cent who do not responded that their gods disapprove (Table 5). Of those that disapprove feel that having a latrine close to the residence pollute their residence which displease their Gods. Traditions and beliefs that exist in



communities also play a part in the reception and use of latrines.<sup>15</sup> 60 per cent mothers using latrine and 68 who do not use responded that there is no community laws or regulations that make it less likely for people to use latrine every time for defecation. And majority of the study participant felt that there is no cultural rules or taboos against using latrine (Table 5). Factors that have been found to universally motivate most mothers to use a latrine is that their children are educated in life and their children enjoy wellbeing with good health and their families are happy.

## CONCLUSION

Mothers of children under 5 who use latrine are in a stage where they have made specific overt modifications in their behaviour and are believed to be in an action phase. They practice the use of latrine every time they defecate. However those mothers who do not use a latrine are more aware of the pros of changing, but are not practising the behaviour. Weighting between the costs and benefits of using a latrine produce profound ambivalence among those non users allowing them to remain in this stage for longer period of time, often characterized as behavioural procrastination. Mothers in the contemplation stage are not ready and are not expected to act immediately, but those in a preparation phase intend to take action in the immediate future through action-oriented programs. The determinants studied will help in carefully addressing those barriers that exist in the use of latrine through action-oriented programs like community led total sanitation for overall behaviour change and avoid relapse and help mothers to grow increasingly confident about the use of latrine.

## Recommendations

In a patriarchal Indian society men are the decision makers and they play the key role in ensuring the availability of a latrine facility at home. Moreover they are role models in the family to practice the behaviour. Thus programs like community led total sanitation for overall behaviour change should have focus on men as key agents to promote use of latrine at home. Women and girls should be empowered to raise voice and demand the need of having a toilet at home. Bridges to activity should include increase in the availability of latrines, reinforcing the perception that using a latrine will ensure clean environment, provide safety for women and will help in conservation of time and also increase the ability of women to remember to use latrine every time. To increase the ability to remember to use a latrine every time is essential to incorporate activities that look upon presence of reminders that help mothers to remember the steps involved in use of latrine and also the events that triggered. Furthermore activities such as follow up, peer group interactions, formation of water sanitation and hygiene committees in communities are essential in preventing relapses and ensuring longitudinal corrections in maintenance of the behaviour.

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