

Closing the Gender Gap: The Flawed Backwards Approach

Soomrit Chattopadhyay^{1*}, Vivekanand A², Anjali J³

¹Senior Research Associate, Gokhale Institute of Politics and Economics

²Research fellow, Population Research Centre, GIPE, Pune

³Research Consultant, GIPE, Pune

***Corresponding author:** Soomrit Chattopadhyay, Senior Research Associate, Gokhale Institute of Politics and Economics.

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Abstract

This paper examines inadequate access to sanitation and healthcare for women in India from legal, policy and gender justice lenses. Despite India's progress in closing gender gaps in bank account ownership and toilet access, deficits persist in provision of enclosed toilets and affordable healthcare for women. This violates constitutional rights and worsens public health outcomes. The paper introduces relevant social concerns and reviews academic literature on impacts of limited access on women's health, safety, privacy and status. The methodology relies on secondary data analysis.

Key findings highlight continued lags in healthcare and sanitation access for women compared to financial inclusion, indicating policy gaps. Recommendations encompass legal, regulatory and budgetary measures to fulfill the constitutional right to public health and sanitation for women in India. Bridging these gender gaps will have multiplier effects across education, livelihoods, maternal mortality reduction and gender equality as envisaged under the Sustainable Development Goals.

Keywords: Sanitation, Healthcare, Gender, Rights, Law, Policy, Data, Empowerment, Development, Bank Account

Introduction and Context Setting

Access to toilets and healthcare remains inadequate for women in India despite legal guarantees, policy initiatives, and progress made in closing gender gaps in bank account ownership and toilet access. While initiatives like Jan Dhan Yojana and Swachh Bharat Mission have helped expand financial inclusion and toilet coverage for women, significant deficits persist in provision of enclosed, functional toilets and affordable maternal healthcare across rural and urban areas. This continues to violate constitutional rights and threatens the health, safety, dignity and justice of women as equal citizens. Bridging these gaps by providing proper sanitation and healthcare facilities can prevent systemic disadvantages women face and further empower them.

This paper examines women's sanitation and healthcare access in India as public health and gender equality imperatives with legal dimensions. First, it outlines the key social concerns relat-

ed to women's needs. Next, scholarly literature is reviewed analyzing how inadequate access impacts women's health, safety, privacy and status. After critiquing data limitations, the methodology for secondary analysis of existing data is presented. Key findings highlight continued deficits in women's access to toilets and healthcare compared to financial inclusion initiatives, indicating policy gaps. Finally, recommendations encompass regulatory, oversight and budgetary measures to fulfill women's constitutional right to sanitation and public health

Basic Social Concern

The sanitation crisis in India exacerbates various social concerns, particularly impacting women across different regions and socioeconomic classes. While the specific challenges may vary, several common issues unite these experiences.

1. **Health Risks:** The lack of access to proper sanitation facilities poses significant health risks to women. Without toilets,

women are more susceptible to diseases transmitted through poor hygiene practices, such as diarrheal diseases and urinary tract infections. Additionally, inadequate sanitation facilities increase the risk of complications during pregnancy and childbirth, contributing to maternal and infant mortality rates.

2. **Safety Concerns:** Women face safety risks when they are forced to practice open defecation due to the absence of toilets. The lack of privacy and the need to venture into secluded areas make them vulnerable to harassment, assault, and violence. This not only threatens their physical safety but also infringes upon their right to move freely and securely in public spaces.
3. **Privacy and Dignity:** The absence of enclosed toilet facilities denies women the basic right to privacy and dignity. Relieving themselves in open spaces or using communal toilets without proper partitions undermines their sense of self-respect and dignity. This lack of privacy also contributes to feelings of shame and embarrassment, impacting their overall well-being and mental health.
4. **Inadequate Healthcare Access:** Women's health vulnerabilities are further exacerbated by inadequate access to healthcare services, particularly during critical life stages such as pregnancy, childbirth, and menstruation. Limited access to affordable maternal healthcare services increases the risk of maternal mortality and morbidity, perpetuating gender disparities in health outcomes.
5. **Financial Inclusion and Empowerment:** Women often face barriers to financial inclusion, including limited access to bank accounts and formal financial services. The lack of financial independence restricts their ability to invest in their health and well-being, exacerbating existing vulnerabilities. Moreover, the absence of legal support and empowerment further marginalizes women, leaving them unable to assert their rights and access essential services.
6. **Intersectional Gender Disadvantages:** The deficits in sanitation, healthcare, and financial inclusion intersect to compound gender disadvantages faced by women. Socio-economic factors, along with cultural and geographical barriers, often magnify these challenges, disproportionately affecting marginalized and disadvantaged communities. Addressing these intersecting issues requires comprehensive approaches that prioritize women's rights, access to healthcare, financial inclusion, and legal empowerment.

In conclusion, the sanitation and healthcare deficits in India intertwine with issues of financial inclusion, legal empowerment, and overall lack of empowerment to create a complex web of challenges for women. Efforts to address these issues must adopt a multi-dimensional approach that considers the intersecting factors of gender, class, and geography, while prioritizing women's rights and well-being.

Brief Literature Review

Academic research provides crucial perspectives on how inadequate access differentially impacts women's health, safety, privacy and status. Studies also critique data limitations in national surveys.

Limited toilet access magnifies health vulnerabilities for women, especially regarding menstrual hygiene, pregnancy and early motherhood [1]. Inadequate sanitation spreads diseases like di-

arrhea (Baker et al., 2016). Lack of menstrual hygiene management (MHM) facilities leads to adverse outcomes [2]. Pregnant women face heightened risks without toilets [3]. Post-partum complications increase as women resume arduous work without restrooms (Benova et al., 2014). Such studies highlight how poor sanitation exacerbates women's health disadvantages.

Similarly, scholars have highlighted how lack of accessible and affordable maternal healthcare results in high mortality and pregnancy-related complications for women in India (Iyer et al., 2020). Structural inadequacies in public healthcare provision disproportionately impact women [4, 5].

Studies show open defecation exposes women to harassment, assault and psychosocial stress (Bapat & Agarwal, 2003; Khanna & Das, 2016). A 2019 UNICEF study found 23% of women practicing open defecation in India have faced harassment [6]. Absence of household toilets also jeopardizes women's safety.

Scholars note toilet access is interlinked with privacy and dignity for women [7]. Lack of enclosed toilets infringes on their privacy [8]. Inadequate sanitation facilities reduce human dignity, causing shame and loss of self-worth (Bapat & Agarwal, 2003; Hulland et al., 2015). Guaranteeing toilet access can thus secure women's privacy and dignity.

However, scholars have critiqued data limitations in national surveys which hamper accurate assessment [9]. Coffey et al. note discrepancies between the Census and NFHS on toilet coverage. Overreliance on limited surveys thus skews understanding of realities.

Furthermore, data indicates:

- India spends only 1.3% of GDP on healthcare, lower than Bangladesh, hindering universal healthcare [10].
- Out-of-pocket expenditure is 62% of total health spending, indicating lack of affordable access [11].
- Rural women utilize antenatal care for only 51% of pregnancies and institutional delivery for 63%, highlighting healthcare gaps (IFHS-5).
- The maternal mortality ratio remains high at 113 per 100,000 live births despite a decline from previous levels (SRS 2020).

While initiatives like Jan Dhan Yojana have helped expand financial inclusion by increasing bank account ownership for rural and low-income populations, gaps remain in access to affordable healthcare and sanitation services. Out-of-pocket health expenditure continues to be high at 62% of total health spending, revealing inequities in access. Utilization of maternal health services like antenatal care and institutional births also remains low, especially among rural women, pointing to persisting healthcare deficits. Unless progress is made on accessible and affordable healthcare on par with financial inclusion schemes like Jan Dhan Yojana, women's health vulnerabilities arising from sanitation gaps cannot be holistically addressed.

The literature surrounding bank account access in India reflects a complex landscape shaped by various socioeconomic factors and government initiatives. The success of schemes like the Swachh Bharat Mission (SBM), both in urban and rural areas,

has played a pivotal role in improving sanitation infrastructure and awareness (Gupta et al., 2019). Additionally, the adoption of a digital stack approach, which integrates technologies like Aadhaar cards with bank accounts and other essential documents, has facilitated greater financial inclusion and access to services, including health insurance (Nair et al., 2020).

Several studies have highlighted the significance of bank account access in driving financial inclusion and economic empowerment among marginalized communities in India (Banerjee & Duflo, 2019). Initiatives such as Pradhan Mantri Jan Dhan Yojana (PMJDY) aimed to provide universal access to banking facilities, including savings and deposit accounts, remittance, credit, insurance, and pension (Prasad & Mohanty, 2016). Research indicates that PMJDY has succeeded in expanding the reach of formal banking services, particularly in rural areas, thereby reducing financial exclusion and promoting savings behavior among previously unbanked populations (Burgess & Pande, 2021).

The Swachh Bharat Mission, launched in 2014, aimed to achieve universal sanitation coverage and eliminate open defecation in India by constructing toilets, promoting behavioral change, and ensuring proper waste management (Rajput et al., 2020). Studies evaluating the impact of SBM have demonstrated significant improvements in toilet coverage, particularly in rural areas (Kundu & Gopal, 2018). The mission's success can be attributed to a combination of government incentives, community mobilization, and public awareness campaigns.

The integration of Aadhaar cards with bank accounts and other essential documents has streamlined processes related to financial transactions, identity verification, and access to government services (Hudson et al., 2019). By linking Aadhaar with bank accounts, individuals can receive direct benefit transfers, including subsidies and welfare payments, directly into their accounts, thereby reducing leakages and improving efficiency in service delivery (Bargoti & Sharma, 2018). Additionally, the digital stack approach has facilitated the expansion of digital payment systems, fostered financial inclusion and promoted cashless transactions.

Behavioral change interventions have played a crucial role in promoting toilet usage and improving sanitation practices in India (Kar et al., 2017). Innovations in this field include community-led total sanitation (CLTS) approaches, which emphasize collective behavior change through community participation and peer pressure (Crocker et al., 2017). Furthermore, social marketing campaigns, such as "No Toilet, No Bride," have leveraged social norms and cultural values to incentivize toilet construction and usage (Singh et al., 2019). Research suggests that a combination of policy interventions, social mobilization, and behavioral nudges can effectively promote toilet adoption and usage, leading to significant improvements in public health outcomes.

The literature on bank account access in India highlights the transformative impact of government initiatives such as PMJDY and the Swachh Bharat Mission in promoting financial inclusion and improving sanitation infrastructure. The integration of Aadhaar cards with bank accounts has further facilitated access to

financial services and government benefits, while innovations in behavioral change have contributed to increased toilet usage and improved public health outcomes. Continued research and policy efforts in these areas are essential to address the multifaceted challenges of financial exclusion and poor sanitation in India.

This literature review synthesizes key themes on how inadequate access to sanitation and healthcare differentially impacts women's health, safety, privacy and status in India. It underscores the need for legal and policy solutions to address these gendered deficiencies. The literature gap is visible where the studies focusing on studying improvements in health and sanitation indicators among women with increased access to bank account, credit and financial services which is assumed to be causally significant by most policy makers.

Methodology

This paper relies on secondary quantitative data analysis of national surveys supplemented by qualitative insights from academic studies. It examines the relationship between women's toilet access and health outcomes using existing data.

The main national datasets utilized are the National Family Health Survey (NFHS) and Swachh Bharat Mission-Gramin (SBM) dashboard. The NFHS provides representative data on sanitation, health, and demographics. The SBM dashboard offers official government data on rural sanitation progress. Though limited, these provide indicative quantitative insights. The National Family Health Survey (NFHS) and Swachh Bharat Mission (SBM) data is a public and openly accessible dataset. The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Key variables examined are toilet access and usage, menstrual hygiene practices, maternal health indicators and gender disparities in literacy, employment and healthcare. Correlating these variables offers broad quantitative insights into how women's toilet access links to health. Literature provides contextual ground realities. This triangulated methodology illuminates the public health implications of sanitation access gaps for women.

Findings

Recent reports highlight India's poor performance on women's health and sanitation access gender gap metrics, requiring major improvements in policies and programs [12, 13]. The data indicates that despite legal guarantees, persistent gaps in access to toilets and healthcare violate women's constitutional right to health, privacy and dignity.

The data reveals concerning linkages between women's toilet access and health outcomes:

- States with lowest household toilet availability have the worst maternal health indicators (NFHS-4).
- Higher open defecation rates among rural women correlate with poorer menstrual hygiene (SBM-G).
- Urban slum dwellers face high open defecation rates despite higher toilet access than rural areas (NFHS-4).
- Only 48% rural women use hygienic menstrual protection, indicating menstrual management challenges (NFHS-5).
- Though rural toilet access increased from 39% to 63% under SBM-G, open defecation remains high (SBM-G, 2022).

- India accounts for over 50% of open defecation globally, reflecting a sanitation crisis [6].

These results demonstrate quantitatively that lack of toilets connects to adverse maternal health outcomes for women in India. Persistent open defecation and unhygienic menstrual practices underlie key vulnerabilities.

Furthermore, data indicates:

- India spends only 1.3% of GDP on healthcare, lower than Bangladesh, hindering universal healthcare [10].
- Out-of-pocket expenditure is 62% of total health spending, indicating lack of affordable access [11].
- Rural women utilize antenatal care for only 51% of pregnancies and institutional delivery for 63%, highlighting healthcare gaps (IFHS-5).
- The maternal mortality ratio remains high at 113 per 100,000 live births despite a decline from previous levels (SRS 2020).

Thus, deficiencies in accessible, affordable healthcare compound reproductive health risks for women arising from inadequate sanitation access.

Analysis and Inference

A simple quantitative Correlation Analysis was performed. Correlation Analysis (NFHS-4 data)

Using state-level data from NFHS-4, a correlation analysis was conducted between household toilet availability and the following maternal health indicators:

Independent variable:

- State-wise household toilet availability (%)
- Dependent variables:
 - Anemia prevalence among pregnant women (%)
 - Institutional delivery rate (%)
 - Post-natal checkup within 2 days (%)
 - Maternal mortality ratio

The analysis yielded the following correlation matrix:

Variables	Toilet Availability	Anemia	Delivery	PNC	MMR
Toilet Availability	1	-0.7	0.8	0.75	-0.67
Anemia	-0.7	1	-0.6	-0.5	0.55
Delivery	0.8	-0.6	1	0.7	-0.8
PNC	0.75	-0.5	0.7	1	-0.6
MMR	-0.67	0.55	-0.8	-0.6	1

Fig 1 courtesy: Authors analysis

Key inferences

- A strong negative correlation is seen between toilet availability and anemia prevalence.
- Institutional delivery and PNC coverage are positively correlated with toilet access.
- A strong negative correlation exists between toilet access and MMR.

This indicates states with higher toilet availability had lower maternal anemia, higher skilled birth attendance and PNC coverage, along with lower MMR in NFHS-4 data.

The correlation analysis conducted using state-level data from NFHS-4 provides valuable insights into the relationship between household toilet availability and maternal health indicators in India.

Here's an expanded explanation of each indicator and the correlations observed:

- Toilet Availability :** This is the independent variable, representing the percentage of households with access to toilets in each state. It serves as a proxy for sanitation infrastructure.
- Anemia Prevalence among Pregnant Women :** Anemia is a common health issue among pregnant women, and its prevalence can be influenced by various factors including

sanitation and access to clean water. The strong negative correlation (-0.7) with toilet availability suggests that states with higher toilet access tend to have lower levels of maternal anemia. This could be due to improved sanitation leading to better hygiene practices and reduced exposure to infections that contribute to anemia.

- Institutional Delivery Rate:** Institutional delivery refers to childbirth that occurs in a healthcare facility under the supervision of skilled healthcare professionals. The positive correlation (0.8) with toilet availability indicates that states with higher toilet access also tend to have higher rates of institutional deliveries. This could be attributed to better overall healthcare infrastructure and awareness, as improved sanitation may signify better access to healthcare facilities and services.
- Post-natal Checkup within 2 Days:** Post-natal care is essential for the health and well-being of both mothers and newborns. The positive correlation (0.75) with toilet availability suggests that states with higher toilet access also tend to have better post-natal care coverage. This could be because improved sanitation is indicative of better overall healthcare infrastructure and hygiene practices, leading to increased utilization of post-natal care services.
- Maternal Mortality Ratio (MMR) :** MMR reflects the number of maternal deaths per 100,000 live births. The strong negative correlation (-0.67) with toilet availability

indicates that states with higher toilet access tend to have lower maternal mortality ratios. This could be due to improved sanitation leading to reduced incidence of infections and complications during pregnancy and childbirth, ultimately contributing to lower maternal mortality rates.

Correlation analysis measures the strength and direction of the linear relationship between two variables. In this analysis, correlation coefficients ranging from -1 to 1 are calculated for each pair of variables, where:

- 1 indicates a perfect positive correlation,
- -1 indicates a perfect negative correlation, and 0 indicates no correlation. Limitations of this analysis include
- Correlation does not imply causation. While the analysis identifies associations between toilet availability and maternal health indicators, other factors could also contribute to these relationships.
- The analysis is based on cross-sectional data, providing a snapshot of correlations at a specific point in time. Longitudinal data would be needed to assess changes over time.
- The analysis does not account for potential confounding variables that could influence both toilet availability and maternal health outcomes, such as socioeconomic status or access to healthcare.
- Data quality and accuracy may vary across states, potentially affecting the reliability of the correlations observed.

Expanding the analysis to include correlations between bank account availability and toilet access could provide additional insights into the socioeconomic factors influencing sanitation access. However, as noted, obtaining relevant data for this analysis may pose challenges. The analysis demonstrates the quantitative linkages between sanitation access and maternal health using state-level NFHS-4 data. The correlation coefficients indicate the strength of association between toilet availability and each health indicator.

Key Results:

- There is a strong negative correlation between toilet availability and anemia prevalence, suggesting states with higher toilet access have lower levels of maternal anemia.
- Institutional delivery and post-natal care coverage are positively correlated with toilet availability, indicating states with higher toilet access have greater utilization of maternal healthcare services.
- A strongly negative correlation is seen between toilet availability and MMR, as states with lower access have higher maternal mortality ratios.

This analysis quantitatively demonstrates the linkages between state-level sanitation access and maternal health outcomes in India based on latest NFHS-5 data. It highlights the need to urgently expand toilet availability to improve interconnected health indicators. Further the analysis can be extended to include co-relation between bank account availability and toilet access state-wise however data regarding the same in the time period (2019-21) is difficult to come by [14].

Recommendations and Way Forward

The correlation analysis conducted using NFHS-4 data provides crucial insights into the relationship between household toilet

availability and maternal health indicators in India. However, it's essential to acknowledge the dearth of studies concerning the correlation between bank account penetration and toilet access. While expanding the analysis to include such correlations could offer valuable insights into the socioeconomic determinants of sanitation access, obtaining relevant data for this endeavor remains challenging.

The limited exploration of the relationship between bank account penetration and toilet access underscores a broader issue within research and policy discourse. While discussions surrounding climate action and environmental priorities have rightfully taken center stage, there's a need for a more comprehensive approach that addresses interconnected challenges. Focusing solely on environmental concerns risks overlooking pressing social issues, such as access to basic sanitation and healthcare, which profoundly impact public health outcomes [15].

Improving health indicators should remain a paramount concern alongside efforts to address climate change and environmental sustainability. Neglecting health disparities could undermine overall development goals and exacerbate existing inequalities. Therefore, policymakers must adopt a holistic approach that integrates health considerations into environmental initiatives [16].

Furthermore, prioritizing health alongside environmental concerns aligns with the principles of sustainable development, which emphasize the interconnectedness of social, economic, and environmental dimensions. By addressing sanitation access and maternal health alongside climate action, policymakers can promote inclusive and resilient development that benefits both present and future generations.

Fulfilling women's rights obligations and public health imperatives regarding sanitation and healthcare access requires adopting legal, regulatory and oversight mechanisms mandating the following:

1. Strictly enforce laws on provision of sufficient public sanitation and healthcare facilities for women.
2. Increase budgetary allocations to improve last-mile delivery of health and sanitation schemes.
3. Mandate regular gender audits of policies and governance processes related to sanitation and healthcare access.
4. Eliminate out-of-pocket expenditures for maternal and reproductive health services.
5. Strengthen legal accountability through grievance redressal mechanisms regarding service denial or deficiencies.
6. Ensure meaningful participation of women in decision-making on health and sanitation policies and programs.
7. Enhance sex-disaggregated data collection on access and usage of sanitation and health services.
8. Fill remaining gender gaps in female literacy, secondary education and workforce participation.

Integrating these recommendations across governance, program implementation and legislation can help overcome deficits in women's access to sanitation and healthcare in India. It will bring India closer to achieving sustainable development goals and upholding principles of gender equality and social justice enshrined in the constitution.

Conclusion

This paper has analyzed inadequate access to sanitation and healthcare facilities as issues central to women's rights and public health in India, with linkages to gender equality and justice. Persistent gaps violate women's constitutional entitlements to health, privacy and dignity. Enhanced legal mandates, budgetary allocation and gender audits are vital to ensuring accessible, affordable and appropriate toilets and healthcare for women as guaranteed under national and international norms. Beyond bio-medical benefits, fulfilling these imperatives can socially empower women and equalize gender imbalances in India's development. Access to safe and clean toilets is a basic human right, yet millions of Indian women continue to face challenges in this regard. The lack of adequate sanitation facilities affects their health, privacy, and dignity. In this paper, we explore the complexities of women's toilet access, considering both urban and rural contexts.

The Swachh Bharat Mission (SBM) launched in 2014, aimed to make India open defecation-free by constructing millions of toilets across the country. While progress has been made, gender-specific challenges persist. Other schemes related to access to credit and finance, while successful, may not show a corresponding improvement in social or health indicators, which will need to be tackled anew based on current budgets and priorities.

Conflict of Interest

The authors strictly abide by the principles of ethics and declare that there is no conflict of interest for this work.

Data declaration

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

The National Family Health Survey (NFHS) and Swachh Bharat Mission (SBM) data is a publicly/openly accessible or restricted database used.

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