Differential access to facilities for medical termination of pregnancy and delivery in India: A secondary analysis

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ABSTRACT

Introduction: Emerging evidence suggests a difference in access to facilities for medical termination of pregnancy (MTP) and delivery among women in different regions of the country. However, we lack assessments at a large scale across all geographies. Our study aims to describe the percent contribution of private and public sectors in institutional deliveries and MTP in India.

Methods: A secondary data analysis using the Health Management Information System statistics was performed. We obtained selective data regarding the total number of MTP and deliveries conducted at public and private institutions. The standard reports of the period between April 2018 and March 2019 were analyzed. The states (n = 29) and union territories (n = 7) were dichotomized into regions, namely north, south, east, west, north-east, and central.

Results: A large part of women underwent deliveries and abortions in the private sector in the southern and western states of India like Kerala, Tamil Nadu, Andhra Pradesh, Goa, and Maharashtra. Women in most of the northern states opted for public facilities for deliveries as well as abortions, except Punjab and Haryana. On the contrary, states like Bihar, Nagaland, and Union territories like Delhi and Dadra and Nagar Haveli had a high percentage of abortions in the private sector and deliveries in public health facilities.

Conclusion: This differential access highlights the need to assess the underlying factors for immediate actions by the policy-makers. Ensuring safe and good quality delivery and abortion services is the means to assure the sexual and reproductive health rights of women by the government.

1. Introduction

Constituting the world's 17% of the population, India holds the key to the achievement of global Sustainable Development Goals (SDG).¹ Notably, the nation has strengthened its maternal health governance through national health programs to address health and social inequalities for achieving SDG.² According to the World Health Organization (WHO), India made considerable progress in reducing the maternal mortality rate by 77% in the past two decades.³ Three states, including Kerala, Maharashtra, and Tamil Nadu, have already reached the SDG-3 target of the maternal mortality rate of less than 70 per 1,00,000 live births, and the other eight states have reduced MMR to less than 100 per 1,00,000 live births.⁴ The Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCH + A) strategy profoundly

impacted the country's maternal health situation. Despite the lack of inter-ministerial coordination and inadequate convergence between allied departments, the states managed to improve maternal health steadily.^{2,4}

Universal coverage of institutional delivery can reduce maternal deaths significantly. In India, the institutional delivery rate increased substantially from 43% in 2004 to 82% in 2014.⁵ The public sector contributes to nearly 50% of the institutional deliveries compared to 30% by the private sector. This difference in access to public or private facilities was associated with the substantial uptake in public sector services among the poor.⁶ Furthermore, private sector uptake for institutional delivery varies between rural and urban areas. Attempts have been made to leverage the use of the private sector for complementing the public sector in areas where it is inadequate and ensuring women,

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especially of lower socio-economic strata, in accessing services at private facilities free from financial implications.⁷

The government of India's flagship program, *Janani Suraksha Karyakaram* (conditional cash transfer scheme), linked cash assistance to support the increment in institutional delivery rates.⁸ However, studies have highlighted inequalities in access to the cash transfer scheme among different states.^{9,10} Partnership with the private sector was ensued in the cash transfer scheme to improve the reach and quality of the services. Still, it did not achieve the desired success due to unattractive offers, inadequate use, and delayed reimbursements.⁷

Like institutional delivery, the uptake of Medical Termination of Pregnancy (MTP) services is increasing in the country.¹¹ Factors such as increased awareness of women about the legality of MTP, providers' knowledge about its safety and efficacy, and improved availability of medical abortifacients have contributed to its increased uptake. The MTP act that came into enforcement in 1971 aims to improve access of women to safe abortion services under specific conditions. However, there has been restricted access to MTP services contrary to the demand due to limited availability of accredited institutions, competent doctors that could perform MTP, and stigma among patients and centers providing these services. Consequently, illegal abortions are widely prevalent both in urban and rural areas.¹² Furthermore, despite the current recommendations suggesting using oral abortifacient tablets under medical supervision, they are available over the counter without the need to visit a hospital.¹³

Studies highlighted that though the access to public health facilities for MTP has increased in the past few years, the percentage of women accessing private facilities far exceeds those who access the public sector.¹⁴ Women entrust private facilities to ensure privacy and confidentiality while providing abortion services compared to public facilities.^{12,14} Moreover, there is a lack of MTP facilities in rural areas, and women access urban private facilities to seek an abortion. There is a wide variation in the quality of MTP services across states in India.¹⁵

There is increasing evidence from small-scale studies and national health surveys that documented differential access to facilities for institutional deliveries and MTP. However, we lack assessments at a large scale across all geographies that compare this differential access. This paper aims to describe the percent contribution of private and public sectors in institutional deliveries and medical termination of pregnancy across the states in India.

2. Material and methods

2.1. Data management

India, with a population of 1.36 billion, has 29 states and 7 union territories.^{16,17} The public health service delivery model in India is a vertical 3-tier system, including primary, secondary, and tertiary levels of healthcare. Primary healthcare is provided by primary health centers and sub-centers in villages, secondary healthcare by community health centers, and tertiary healthcare by tertiary hospitals, specialized hospitals, and apex institutes or teaching medical colleges.¹⁸ In the mixed-health system of India, the private sector is a major stakeholder, contributing to more than 80% of services in India.¹⁹ Though the private sector is supposed to be equally governed and monitored by the government, the implementation of the same has been questioned in various studies.²⁰

We conducted a secondary data analysis using the Health Management Information System (HMIS) statistics of 2018–2019. The HMIS data is freely available for research purposes.²¹ The HMIS is a Government to Government (G2G) web-based monitoring information system that has been put in place by the Ministry of Health & Family Welfare (MoHFW), Government of India, to monitor the National Health Mission. The HMIS portal facilitates the flow of physical performance from the facility level to the sub-district, district, state, and national level using a web-based interface. The portal provides periodic reports in

Table 1

State-wise distribution of the percentage of institutional delivery across public and private facilities.

States	Total reported deliveries	% of institutional deliveries to total reported deliveries	% Deliveries conducted at Public Institutions to Total Institutional Deliveries	% Deliveries conducted at Private Institutions to Total Institutional Deliveries
North				
Chandigarh	29021	99.8	100.0	0
Delhi	283717	95.7	81.2	18.8
Haryana	500821	94.9	60.4	39.6
Himachal Pradesh	87392	90.4	85.4	14.6
Jammu and Kashmir	199384	94.8	91.0	9.0
Punjab	372882	97.7	51.4	48.6
Rajasthan	1384272	97.6	76.7	23.3
Uttarakhand	147841	87.4	68.1	31.9
Central				
Chhattisgarh	490703	96.9	75.8	24.2
Madhya Pradesh	1375631	95.0	89.7	10.3
Uttar Pradesh	3972262	85.6	74.1	25.9
East				
Bihar	2087990	81.3	95.0	5.0
Jharkhand	737983	95.4	72.8	27.2
Odisha	655820	96.2	84.0	16.0
West Bengal	1323129	97.8	79.5	20.5
North-east				
Arunachal Pradesh	18872	90.0	85.0	15.0
Assam	592973	89.9	83.7	16.3
Manipur	38028	82.3	81.0	19.0
Meghalaya	84372	57.8	77.0	23.0
Mizoram	19440	88.4	80.0	20.0
Nagaland	19710	82.1	76.5	23.5
Sikkim	7107	99.1	65.8	34.2
Tripura	50343	93.4	94.8	5.2
West				
Dadra and Nagar Haveli	9077	99.5	89.2	10.8
Daman and Diu	3857	99.9	87.6	12.4
Goa	17955	99.8	58.9	41.1
Gujarat	1139108	99.4	37.3	62.7
Maharashtra	1726544	99.3	51.9	48.1
South				
Andaman and Nicobar	3840	97.8	100.0	0
Andhra Pradesh	747243	99.4	43.4	56.6
Karnataka	911795	99.9	62.0	38.0
Kerala	484556	99.9	29.7	70.3
Lakshadweep	845	100.0	100.0	0
Puducherry	43977	100.0	76.0	24.0
Tamil Nadu	939547	100.0	54.6	45.4
Telangana	610191	99.9	53.6	46.4

prescribed formats on the status of the health services performances, human resources, and infrastructure services available in the states. The HMIS portal captures data from public and private institutions in rural and urban areas. Although questions have been raised over the competencies of the HMIS data, studies in the past have affirmed its completeness and quality.²²

The HMIS format, as a part of the routine process, collected information from all the health facilities. We obtained selective data regarding the total number of MTP and deliveries conducted at public and private institutions. Institutional birth was defined as delivery at either a hospital or clinic (primary health centre or community health centre). Furthermore, information was sought for the percentage of MTP done within 12 weeks and after 12 weeks of pregnancy at public

Table 2

State-wise distribution of percentage of MTP done at public or private facilities and up to 12 or more than 12 weeks.

States	Total number of MTPs	Total number of spontaneous abortions reported	% of MTPs conducted at public facilities to total MTP	% of MTPs conducted at Private Institutions to Total MTP	% MTPs up to 12 weeks of Pregnancy to Total MTPs at Public Institutions	% MTPs more than 12 weeks of Pregnancy to Total MTPs at Public Institutions
North						
Chandigarh	1649	1823	100.0	0	80.2	19.8
Delhi	6288	23275	31.1	68.9	86.1	13.9
Haryana	13818	14683	36.3	63.7	94.0	6.0
Himachal Pradesh	2818	7648	54.2	45.8	87.3	12.7
Jammu and Kashmir	4784	18323	79.1	20.9	93.8	6.2
Punjab	4244	18411	17.4	82.6	90.9	9.1
Rajasthan	18866	60556	78.1	21.9	95.6	4.4
Uttarakhand	4320	3557	91.9	8.1	96.8	3.2
Central						
Chhattisgarh	10179	19655	79.0	21.0	92.5	7.5
Madhya Pradesh	25499	39389	69.0	31.0	94.0	6.0
Uttar Pradesh	34582	33215	79.2	20.8	92.3	7.7
East						
Bihar	2493	4656	15.9	84.1	88.0	12.0
Jharkhand	4286	18323	56.4	43.6	93.1	6.9
Odisha	15963	44335	83.8	16.2	97.0	3.0
West Bengal	34907	81346	61.8	38.2	88.7	11.3
North-east						
Arunachal Pradesh	1146	297	61.0	39.0	94.6	5.4
Assam	92470	27078	92.4	7.6	97.5	2.5
Manipur	3104	1729	76.0	24.0	98.0	2.0
Meghalaya	337	4283	100.0	0	92.3	7.7
Mizoram	200	1121	97.6	2.4	59.0	41.0
Nagaland	579	539	28.9	71.1	96.4	3.6
Sikkim	43	333	100.0	0	88.4	11.6
Tripura	2180	1377	100.0	0	95.5	4.5
West						
Dadra and Nagar Haveli	162	819	34.7	65.3	100.0	0
Daman and Diu	107	217	48.0	52.0	100.0	0
Goa	305	533	40.3	59.7	92.1	7.9
Gujarat	10180	27423	70.4	29.6	86.9	13.1
Maharashtra	38599	54588	24.9	75.1	92.5	7.5
South						
Andaman and Nicobar	185	121	100.0	0	90.8	9.2
Andhra Pradesh	2410	8958	83.4	16.6	69.2	30.8
Karnataka	16780	25753	51.1	48.9	79.8	20.2
Kerala	2019	13123	19.2	80.8	75.8	24.2
Lakshadweep	4	107	100.0	0	100.0	0
Puducherry	635	1026	50.0	50.0	74.3	25.7
Tamil Nadu	30884	37178	41.0	59.0	88.9	11.1
Telangana	3903	4065	95.5	4.5	65.8	34.2

Abbreviations: MTP: Medical Termination of Pregnancy.

institutions. We retrieved data from the standard reports of the key HMIS indicators up to the district-level using the HMIS portal of the National Health Mission. The standard reports of the period between April 2018 and March 2019 were accessed and used for the analysis. The reports of all the states ($n = 29$) and union territories ($n = 7$) were obtained from the portal and dichotomized into regions, namely north, south, east, west, north-east, and central. We do not possess individual-level data collected at the facilities. Instead, it is the aggregated state-level data entered into the HMIS system.

2.2. Statistical analysis

The analysis was performed in Microsoft Excel. Standard descriptive statistics were calculated and shown region and state-wise. QGIS 3.10 was used for developing the maps. The excel file was linked with QGIS, and then further mapping was done. The cut-offs for the percentage of outcome variables were entered manually for analytical purposes. Different color codes were used to represent the percent deliveries in

public and private facilities across different states or union territories. The states with institutional deliveries in public facilities less than 62% were colored red, between 62 and 84% were colored yellow, and more than 84% green. Similarly, the states with institutional deliveries in the private sector less than 15% were colored red, between 15 and 34% were colored yellow, and more than 34% green. However, the percentage of MTP in public or private facilities were depicted using circles of increasing sizes. The states with MTP in public facilities less than 41%, between 42 and 70%, and more than 70% were shown with increasing sizes of the circles. Similarly, the states with MTP in the private sector less than 24%, between 24 and 52%, and more than 52% were depicted with increasing size of the circles.

3. Results

The tables represent the data of the institutional deliveries and MTP across 29 states and 7 union territories. In almost all the southern states, the states from Western India, and Punjab, Haryana, and North East, i.e.,

Fig. 1. State-wise distribution of percentage of institutional deliveries and MTP in public facilities. Legend: The states with institutional deliveries less than 62% were colored red, between 62 and 84% were colored yellow, and more than 84% green. The states with MTP less than 41%, between 42 and 70%, and more than 70% were shown with increasing sizes of the circles. (For interpretation of the references to color in this figure legend, the reader is referred to the Web version of this article.)

Sikkim, more than one-third of the deliveries were conducted and reported by private institutions (Table 1). On the contrary, states like Jammu and Kashmir, Madhya Pradesh, Bihar, and Tripura reported more than 90% of deliveries at public institutions.

The data found that 3,90,928 MTP were reported in India (April 2018–March 2019), giving an estimated abortion (spontaneous + MTP) rate of 2.84 per 1000 women of reproductive years (15–49 years). In states like Kerala, Maharashtra, and Bihar, more than three-fourths of abortions (MTP) were reported from private facilities (Table 2). Though most of the MTP reported from public institutions took place within 12 weeks of pregnancy at all places, except for Mizoram, Andhra Pradesh, and Telangana, where 30–40% of the MTP happened after the first trimester.

Fig. 1 represents the institutional deliveries and MTP in public facilities in the states of India. It was found that states like Punjab, Haryana, Gujarat, Maharashtra, Telangana, Andhra Pradesh, Karnataka, Goa, Kerala, and Tamil Nadu had less than 62% of institutional deliveries in public facilities. Apart from that, less than 41% of MTP were practiced in public facilities in states like Punjab, Haryana, Delhi, Bihar, Dadar and Nagar Haveli, Maharashtra, Kerala, Tamil Nadu, and

Nagaland.

Fig. 2 represents the institutional deliveries and MTP in private facilities in the states of India. It was revealed that states like Jammu and Kashmir, Himachal Pradesh, Bihar, Arunachal Pradesh, and Tripura had less than 15% of institutional deliveries in private facilities. Moreover, states like Haryana, Punjab, Delhi, Dadar and Nagar Haveli, Maharashtra, Goa, Kerala, Tamil Nadu, Bihar, and Nagaland had more than 52% of MTP practiced in private facilities.

4. Discussion

India made significant strides in improving the maternal and child health condition in the country in the last decade. As a result, the maternal mortality rate in the country decreased from 212 in 2010 to 172 in 2019. Furthermore, the institutional delivery rate improved significantly from 50% in 2000 to 95% in 2019.²³ Multiple factors underpinned to this achievement include the introduction of a conditional maternity benefit scheme, free ambulance and facility care under maternal and child safety programs, etc.⁸ A large percentage of deliveries occurred in private hospitals in the western or southern states

Fig. 2. State-wise distribution of percentage of institutional deliveries and MTP in private facilities. *Legend: The states with institutional deliveries less than 15% were colored red, between 15-34% were colored yellow, and more than 34% green. The states with MTP less than 24%, between 24-52%, and more than 52% were depicted with increasing size of the circles. (For interpretation of the references to color in this figure legend, the reader is referred to the Web version of this article.)*

like Punjab, Haryana, Kerala, Telangana, Tamil Nadu, Gujarat, Maharashtra, Goa, and Andhra Pradesh. This is largely attributable to the improved household, or family income in these states as the cost of hospitalization and doctor fees are quite high, which is beyond the capacity of millions to pay in other parts of the country.²⁴

Our estimations of the abortion (spontaneous + MTP) rate of 2.84 per 1000 women is one-sixteenth of that reported in a Lancet study (47.0 per 1000 women). The facility-based abortion estimates in the Lancet study (3.4 million) are more than five times the number reported in ours (0.59 million).²⁵ The abortion rate in the Lancet study of 2018 was estimated by three components: facility-based abortions, medical abortions outside facilities, and non-medical abortions outside the facilities. The study estimated facility-based abortions from the national health facility survey 2015 of 4001 public and private health facilities in six Indian states (Assam, Bihar, Gujarat, Madhya Pradesh, Tamil Nadu, and Uttar Pradesh) and from the clinic data of non-governmental organizations (NGO). Similarly, national medication abortion drug sales and distribution data were obtained from IMS Health and NGOs in the Lancet study. An indirect technique employing findings from community-based study findings were used to calculate non-medical abortions outside the facilities. The study estimated 15.6 million abortions (14.1 million–17.3

million) in India in 2015.²⁵ Furthermore, our estimates are lower than the ones reported to occur in the government facilities by the National Family Health Survey-4 (7,01,415).²³ This could be because of high over-the-counter access to medical abortion drugs, like mifepristone and misoprostol, without prescriptions via chemists or informal vendors.²⁵ However, our paper does not intend to assess the incidence of abortions in the country.

High abortion rates in the studies (Lancet study and National Health Survey) reflect the high unmet needs of contraceptives or unintended pregnancies. This suggests the need for improved contraceptive services and access to such services by women across all geographies and social classes. High contraceptive failures rate due to the use of conventional methods or incorrect use of contraceptives are the additional contributing factors to abortions or unintended pregnancies.²⁵

The national family health survey-4 reported that more than 50% (52%) of the abortions in India take place in the private sector.²³ In the Lancet study, it was reiterated that private facilities contributed to around three-fourths of the surgical abortions compared to one-fourths by public facilities.²⁵ On the contrary, 91% of the medical abortions in the country took place outside the facilities compared to 7% in the private and 2% in the public facilities.²⁵ A study estimated that 73% of

over 15 million abortions in India are induced through medical abortion outside of facilities, which have not been recorded in our study. A large chunk of these outside facilities medical abortions relies on pharmacists.²⁶

This differential access to private facilities for MTP can be attributed to multiple causes. Firstly, sex-selective abortions and restricted access to abortions by providers in certified facilities that do not provide services to women if they come alone or if the spouse or a close relative does not give consent push women towards private and uncertified facilities. Secondly, this is further aggravated by the low decision-making capacity of women, controlled by husbands or other family members, and the family's resort to unsafe providers for abortions to maintain confidentiality and privacy. Lastly, the lack of adequate facilities for abortion and good quality care, counselling and confidentiality in the public sector are additional reasons for limited access to public facilities by women in many states.²⁷

Apart from the states in the south (Kerala, Tamil Nadu, etc.) or western India (Maharashtra, Gujarat, etc.), states like Bihar, Nagaland, and Union territories like Delhi and Dadra and Nager Haveli had a high percentage of abortion in the private sector. Previous studies highlighted that due to the lack of safe and adequate abortion services in the public sector in Bihar, women turn to the private sector for abortion despite legal constraints in uncertified private centers and financial burden on women.^{28,29} Some of the gap areas identified by the previous research include an inadequate number of safe abortion facilities within reach of poor women in rural or urban areas, inadequate registered abortion providers or facilities, and post-abortion counselling on contraceptives. This is an issue of concern as 13% of maternal deaths are due to unsafe abortion.³⁰

4.1. Limitations

The study results should be interpreted in view of certain limitations. Firstly, the study was conducted on secondary data from HMIS, which does not include the complete data from the private sector and pharmacists. So, there is a risk of missing out on a certain figure of such abortions happening in private clinics/hospitals or through medications taken from pharmacies. Secondly, due to a lack of individual-level data, we could not associate the socio-economic factors with a high prevalence of institutional deliveries/abortions in the private sector. Lastly, the current data is for one year, and it's difficult to observe the trend of access to private or public sectors for deliveries or abortions. Hence, our subsequent paper with elaborated data of differential access over the last decade may help us understand the trends.

5. Conclusions

The study observed a difference in access to deliveries and abortions among Indian populations. A large part of women underwent deliveries as well as abortions in the private sector in the southern and western states of India like Kerala, Tamil Nadu, Andhra Pradesh, Goa, and Maharashtra. Women in most of the northern states opted for public health facilities for deliveries as well as abortions, except Punjab and Haryana. On the contrary, states like Bihar, Nagaland, and Union territories like Delhi and Dadra and Nager Haveli had a high percentage of abortions in the private sector and deliveries in public health facilities. The government and policy-makers need to understand this differential access and assess the gap areas leading to limited access by women to public facilities for MTP.

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Authors' contribution

Shantanu Sharma conceptualized and wrote the full manuscript, Param and Rajesh Kumar Singh obtained and analyzed the data, Ajit contributed to the methodology section, and designed the figures, Sunil Mehra reviewed and edited the final version of the manuscript.

Declaration of competing interest

The authors declare that there is no conflict of interest.

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