



Providing quality abortion care: Findings from a study of six states in India

Chander Shekhar^{a,*}, Aparna Sundaram^b, Manoj Alagarajan^c, Manas R Pradhan^a, Harihar Sahoo^c

^a Department of Fertility Studies, International Institute for Population Sciences (IIPS), Mumbai 400088, India

^b 1 Greene Street, #309, Jersey City, NJ, USA

^c Department of Population and Development Studies, International Institute for Population Sciences (IIPS), Mumbai 400088, India



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ABSTRACT

Objective: Although abortion has been legal in India since 1971, but very little research has been done so far on the issue of the quality of abortion services. To fill this gap, this paper examines whether the quality of abortion services provided in the country is in line with the WHO's recommendations.

Study Design: We analyse a cross-sectional health facilities survey conducted in six Indian states, representing different sociocultural and geographical regions, as part of a study done in 2015.

Main outcome measures: Percentage of facilities offering different abortion methods, type of anaesthesia given, audio-visual privacy level, compliance with the law by obtaining woman's consent only, imposing the requirement of adopting a contraceptive method as a precondition to receive abortion.

Results: Except for the state of Madhya Pradesh, fewer than half of the facilities in the other states offer safe abortion services. Fewer than half of the facilities offer the WHO recommended manual vacuum aspiration method. Only 6–26% facilities across the states seek the woman's consent alone for providing abortion. About 8–26% facilities across the states also require that women adopt some method of contraception before receiving abortion.

Conclusion: To provide comprehensive quality abortion care, India needs to expand the provider base by including doctors from the Ayurveda, Unani, Siddha, and Homeopathy streams as also nurses and auxiliary midwives after providing them necessary skills. Medical and nursing colleges and training institutions should expand their curriculum by offering an in-service short-term training on vacuum aspiration (VA) and medical methods of abortion.

Introduction

Abortion has been legally available in India since 1971. The law permits registered allopathic medical practitioners at certified facilities to provide abortion services – or medical termination of pregnancy (MTP) as it is known in India – to save a woman's life; to preserve her mental or physical health; in case of an economic or a social necessity; in case of rape, incest, or foetal impairment; and, for married women, in the event of a contraceptive failure. Pregnancies beyond 20 weeks may be terminated in case of a danger to life. According to the MTP Act of 1971, facilities must register themselves to provide legal abortions and the abortions must take place in safe and hygienic conditions at the registered facilities and be performed by a certified provider.

The 1971 MTP Act was amended in 2002–03 to accommodate advances in the abortion technology, especially abortion through the use of medication. Amendments were passed that allowed for the use of such methods – known as medical methods of abortion (MMA) in India

– up to seven weeks' gestation by doctors certified for abortions, and in facilities not specifically approved to offer abortions, conditional upon such facilities having referral linkages to another facility approved to provide abortion, for prompt action in case of complications [1–3]. The amendments also included changes to the process of registering private facilities for the provision of abortion services by shifting the responsibility from the state governments to district level committees. In 2008, the combination pack (or the combi-pack), which contains 200 mg of mifepristone and 800mcg of misoprostol, was approved in India [4], and in 2010, the National Comprehensive Training and Service Delivery Guidelines declared that MMA up to 63-day gestation is safe [5].

Despite fairly liberal provisions for obtaining abortions legally, a large proportion of the Indian women still obtain illegal and potentially unsafe abortions that might jeopardize their health and even lead to their death [6]. The problem begins with poor access to health facilities that provide safe and legal abortion care. In rural areas, access is worse

* Corresponding author.

E-mail address: buddhab@iips.net (C. Shekhar).

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than in urban areas [7,8].

Poor access to safe abortions in health facilities is compounded by issues like some women being turned away by the facilities for reasons such as being unmarried or being too young [9]. Previous research has found that because many certified facilities insist upon women getting sterilized as a precondition for receiving an abortion, women avoid going to such facilities and prefer to go to informal providers instead [10]. Studies show that often women obtain abortions from legal providers as the last resort, preferring to go to unapproved providers instead, because of concerns over the quality of care, such as legal care not being women friendly [11].

A study from a district in the south Indian state of Tamil Nadu showed that the respondents were critical of abortion services at government facilities, which they considered to be of average or even poor quality [12]. They preferred to seek abortion in the private sector instead [12]. However, since the abortion services in the private sector are inadequate or inaccessible to poor women and to those in rural areas, many women obtain abortions from untrained abortion providers under potentially unhygienic conditions [1,13,14].

Studies have shown that the methods used by informal providers range from the use of sticks and herbs to bovine oxytocin and even dilation and curettage (D&C) [15,16]. The use of D&C appears to be widespread in India even among trained providers, although it is an outdated method and is no longer approved by the World Health Organization [16,17]. When such invasive methods are used by untrained, informal providers, the risk of complications increases.

Estimates of maternal mortality from unsafe abortions are unknown for India as a whole, but a study from Tamil Nadu shows that about six per cent of maternal deaths are due to abortion-related complications. Tamil Nadu is among the better-off states in India and has the advantage of a robust health infrastructure. Despite this, unsafe abortions continue to cause maternal deaths in the state. Studies show that in poorer states like Bihar, abortion-related complications are a major contributor to maternal mortality and morbidity [18].

Prior research on the central Indian state of Madhya Pradesh shows that women who visit public health facilities to seek abortion are mainly poor and that many of them lack access to correct information and good quality services. This in turn leads women to seek unsafe providers, which aggravates the risk of post-abortion complications [19]. Another study from the same state revealed that improved access to safe induced abortion services, increased community awareness of the abortion law and of safe abortion methods, and a larger pool of approved providers are all necessary to reduce morbidity associated with unsafe abortion [20].

These studies underscore a problem highlighted in global research – that despite the existence of a legal framework that permits safe abortion services, access and utilization of such services is hindered by multiple factors [21]. In India, such factors include lack of trained healthcare providers, lack of services in rural areas, lack of transportation, unnecessary administrative barriers such as providers turning women away for discretionary reasons, and imposition of preconditions such as adoption of sterilization before being able to obtain the services.

The lack of quality abortion services can seriously compromise women's health outcomes and contribute to maternal mortality and morbidity [22]. Recognizing these gaps and the impact they can have on women's health, the Government of India in 2014 issued guidelines under the purview of the Medical Termination of Pregnancy Act for program managers and service providers to provide woman-centric comprehensive abortion care (CAC) at public health facilities. This includes service that is non-judgmental, values privacy and confidentiality, and is provided in clean and hygienic surroundings. The guidance also covers post-abortion contraception and equipment requirements.

While a client-centric approach is important for the delivery of any healthcare service, it is particularly important for a stigmatized issue like abortion [11]. A recent editorial in the British Medical Journal

called it a human right. While acknowledging that validated and widely-used metrics that capture all domains of quality are currently lacking, it argues for a client-centric approach to assess the quality of the abortion services provided [25]. A study found that although expanding the coverage of services related to family planning, abortion, and other maternal health issues has increased the utilization of services, person-centred care was lacking [22]. The provision of high-quality legal abortion services is, therefore, key to ensuring women's health and to preventing unsafe abortions and the associated maternal morbidity and mortality [23–25].

A review of global research on the measurement of the quality of abortion services identifies the various indicators that have been used in the literature to assess the quality of abortion care [26]. The review groups these indicators into three levels: structure, process, and outcomes. Structure focuses on the setting in which the service is provided and examines themes such as infrastructure and laws and policies. Process looks at what is being done on the ground to give and receive care and includes themes such as technical competence, client-provider interactions, support, decision making, ancillary services, and information provided. Outcomes look at what happens after the care has been provided and how it affects health status. The broad themes here include client and community knowledge, demographic trends in abortion, and client morbidity and mortality.

A study by Hyman and Castleman outlined the key aspects of provision of abortion services. They include prioritizing the 'process' aspect of providing quality service, emphasizing tailoring a woman's care to her circumstances and needs; providing accurate and appropriate information and counselling to enable her to make informed choices; using internationally recommended medical technologies; offering post-abortion contraceptive care; providing women with (or referring them to) other reproductive health services such as STI screening and treatment; and ensuring women's confidentiality, privacy, and respect at the health facility [24].

While existing research on abortion services in India sheds some light on the quality of abortion care, there is nevertheless a crucial gap in the current literature. Research on the capacity of the health facilities to provide quality care is lacking. Besides, most of the existing research is in the form of small-scale studies focusing on a specific area or a district in a state. In this paper, we propose to bridge this research gap. Using data from a new representative survey of health facilities across six states in India, we compare and contrast facilities providing abortion services so as to assess the quality of abortion services they provide.

Since assessing the quality of care can include every aspect of abortion service and practice, for this paper, we focus specifically on the following aspects: availability of abortion services in public and private facilities, accessibility and certification status of facilities providing such care, availability of approved abortion medical technologies in the facilities, availability of infrastructure and practices to ensure privacy and confidentiality of the client, and availability of other abortion-related reproductive health services such as quality contraceptive care.

The choice of these dimensions is related both to the availability of data and their importance in the Indian context. They cover both the 'structure' and the 'process' aspects of abortion service that past research has found to be critical in the provision of quality abortion service, and which are key to assessing the quality of abortion service in India.

The rationale of the study is that improving and adopting the recommended quality of care reduces illegal and potentially unsafe abortions. Addressing the barriers to access to such care can reduce health and life risks to pregnant women seeking an abortion and safeguard human rights.

Method

Data and survey design

A quantitative cross-sectional survey of the health facilities in six states – Uttar Pradesh (UP), Tamil Nadu (TN), Bihar, Gujarat, Madhya Pradesh (MP), and Assam – was conducted in 2015. The intent of the survey, known as the Health Facility Survey (HFS), was to obtain data on the availability and use of induced abortion services and post-abortion complications care. The states were randomly chosen to represent distinct geographical regions – North, South, East, West, Central, and the North-East. The HFS collected data from 4001 public and private health care facilities using a comprehensive and representative sample design.

A structured close-ended interview schedule was canvassed to collect the data from a respondent in each facility. The eligible respondent was anyone who could provide detailed and accurate information about the abortion services provided. Hence, the respondent could be the head/director of the health institution, a gynaecologist/an obstetrician, the head of the gynaecology department, the medical officer in-charge (Maternal and Child Health), a public health/staff nurse, a Bachelor of Medicine and Bachelor of Surgery (MBBS) doctor, or a practitioner of Ayurveda, Unani, Siddha, or Homeopathy.

Each of the field investigators recruited for data collection possessed a bachelor's degree in one of the three sciences of paramedics, biology, or nursing. Each of them had to undergo a five-day in-house training, followed by a two-day field practice before deployment in the field.

Additional data, including data on the number of women receiving abortions, was obtained from other sources such as large NGOs and other government surveys like the District Level Health Survey (DLHS), National Family and Health Survey (NFHS), the Ministry of Health and Family Welfare (MoHFW), the census, and the National Sample Survey (NSS). The sampling and the survey design of the study can be accessed from: [https://www.thelancet.com/cms/10.1016/S2214-109X\(17\)30453-9/attachment/ff90ce36-af7b-4c4f-b058-718b03fc74f6/mmc1.pdf](https://www.thelancet.com/cms/10.1016/S2214-109X(17)30453-9/attachment/ff90ce36-af7b-4c4f-b058-718b03fc74f6/mmc1.pdf).

A brief comparative background for a better understanding of the social and economic development of each study state is given below:

The six selected states vary greatly in their sociodemographic indicators and in their capacity to provide quality health care (see [Appendix A](#)). Uttar Pradesh, Bihar, Madhya Pradesh, and Assam are among the poorest states in India. In 2011, their per capita income ranges from a low of about \$188 per year in Bihar to about \$330 per year in Madhya Pradesh [27]. About 30% of the population in these states is classified as poor, that is, living on less than a dollar a day, and a greater proportion of the poor live in the rural areas of the states [28]. Gujarat and Tamil Nadu, with a per capita income of about \$758 and \$730 respectively in 2011, are the more prosperous states in the country [28]. According to the 68th round of the NSS, about 17% of Gujarat's and 11% of Tamil Nadu's population is classified as poor [28]. Both states are also more urbanized than the other states. According to the most recent wave of the National Family Health Survey, 44% of the reproductive age women in Gujarat live in urban areas, and 51% of the reproductive age women live in urban areas in Tamil Nadu, which is the most urbanized state in the country [29–31].

Tamil Nadu is also among the few states in India which rank high on indicators related to women's status and women's socio-demographic outcomes. Most of the state's reproductive age women (80%) are literate, and the maternal mortality ratio (MMR) is 79 per 100,000 live births, which is among the lowest in the country. It also has one of the lowest total fertility rates (TFR) in the country, which at 1.7 children per woman is below the replacement level. The indicators for Gujarat, though better than the other study states, lag those of Tamil Nadu.

Among the remaining four study states, the literacy rates for women of reproductive age range from about 50% in Bihar to about 72% in Assam. The MMRs range from 208 in Bihar to 300 in Assam. At 3.4, Bihar also has the highest TFR of the four states, while Assam's TFR is in the lower range at 2.2, which is just above the replacement fertility level.

The wanted fertility rates (which is the number of children women want regardless of whether they are able to actually have that number) for all the states are at or below 2.1, which is also known as replacement level fertility.¹ The only exception is Bihar, which has a wanted TFR of 2.5 children per woman. The state also has a high unmet need for contraception. The existence of a gap between wanted and actual TFRs, coupled with a high unmet need for contraception, is likely to lead to a higher incidence of unintended pregnancy, which in turn may lead to a greater demand for abortions.

Sample selection and eligible respondents

In order to select the HFS sample, we first obtained a random sample of about 70% of the districts in each state, and then, within these districts, we identified public, private, and NGO facilities. Most public health facilities were sampled using lists obtained from the Ministry of Health and Family Welfare (MoHFW) and included 75% of the district hospitals, 62% of the sub-divisional hospitals, and 52% of the community health centres (CHCs) in the sample districts. An 11% sample of the primary health centres (PHCs) was selected from among the PHCs linked administratively to the sampled CHCs. All medical colleges, whether public or private, were included in the sample.

To represent the private and the NGO sectors, and to identify types of public facilities not listed by the MoHFW, we conducted a listing exercise to list facilities with the capacity to provide abortion services in both rural and urban areas. Inclusion was not limited to those registered to provide such services. In rural areas, the listing exercise was conducted within the catchment areas of a representative sample of the CHCs. In urban areas, the listing exercise was conducted within a representative sample of the urban wards. The total number of the urban wards sampled across the six states was designed to represent approximately-three per cent of all the India urban population (about 7.5% of the urban population in the six states).

In both the selected rural and urban areas, the goal of the listing exercise was to list all private and NGO facilities (including hospitals, nursing and maternity homes, and clinics) and other public facilities not listed by the MoHFW (such as urban family welfare clinics) providing abortion-related services.

The HFS was administered through face-to-face interviews with senior health care professionals, who had knowledge about the abortion-related services provided in their facility. Typically, the respondents were the director or the head of the facility or of the obstetrics and gynaecology department. In lower-level facilities, the interview was sometimes administered to a nurse, a midwife, the facility-in-charge, or any other professional in the know about the services at the facility. The HFS collected extensive information on reproductive and abortion-related services offered at each facility, including the types of services offered, the number of women who showed up for abortion-related care, the availability of trained staff, and the types of post-abortion complications treated.

¹ A Total Fertility Rate (TFR) of about 2.1 children per woman is called replacement-level fertility. This value represents the average number of children a woman would need to have to reproduce herself by bearing a daughter who survives to childbearing age. If replacement level fertility is sustained over a sufficiently long period, each generation will exactly replace itself without any need for the country to balance the population by international migration. (http://www.searo.who.int/entity/health_situation_trends/data/chi/TFR/en/).

Variables used in the analysis

The HFS data has a lot of comparable information collected from health facilities across the six surveyed states. In order to understand our research question, we focused on the following:

Availability, safety, and access of abortion services: The HFS survey has data on whether the sampled facility offers abortion services and whether the services are offered around the clock or only at specific times. It also asks whether the facility is in the public or the private sector, and whether the facility is certified or approved to provide abortion services. Certification status is relevant only to the private sector since all public facilities are automatically certified for the provision of abortion services.

Availability of recommended abortion technologies: The HFS data includes information on the types of abortion methods used by the sampled facilities. This includes the use of medication abortion technologies (MMA), vacuum aspiration methods, dilation and curettage (D&C), and dilation and evacuation (D&E). Of these, only MMA and vacuum aspiration are approved for first trimester abortions by the WHO, while D&E is approved for second trimester abortions. D&C is not approved by the WHO [17].

Infrastructure availability and facility practices: The HFS dataset has information on whether the facility is able to provide a woman with visual and auditory privacy when she comes in for a service. It also asks the facility respondents about their procedures for obtaining consent before providing abortion services. The question asks if consent is asked only from the woman, or whether consent is also sought from others such as the husband, or the in-laws, or the guardians.

Provision of related reproductive health services: The HFS survey asks the respondents about the contraceptive care they provide to women who seek abortion services. It asks about the type of contraceptive facilities prescribed and stocked, the type of counselling provided, and whether the adoption of a method is a prerequisite for a woman to receive abortion services.

Ethical approval

The ethical approval for the study was granted by the Ethical Review Board of the International Institute for Population Sciences with the certificate no. IRB/NFHS-4/01_1/2015. All respondents were protected by anonymising their identity in the dataset, and oral/written consent was obtained before interviewing them.

Statistical procedures

We present, in this paper, the results of bivariate analyses and provide proportions of various groups and categories of facilities providing abortion services. We also provide the associated standard errors for these estimates. Using these standard errors, we calculated significance tests to check if the proportions were significantly different from each other. The results of the significance tests are shown in the paper (p-value). All estimates were weighted, and the analysis included all facilities that reported providing abortion services (MTP). We used SAS version 9.4 to perform the data analysis.

Results

Availability, safety, and accessibility of MTP services

Table 1 shows the availability of safe abortion services, or MTP, in the six surveyed states. With the exception of Madhya Pradesh (56%), the results show that fewer than half of all the facilities (19% to 47%) in the other states offer safe abortion services. Within each state, a higher proportion of private facilities offer MTP services than the public sector facilities. Madhya Pradesh and Tamil Nadu have the highest proportion of private facilities offering MTP services (67% and 65%), the

corresponding numbers for the public sector in these states being 36% and 17%. Uttar Pradesh has the lowest proportion of private facilities offering MTP services (23%), and only 11% of the public sector facilities in the state offer MTP.

With the exception of Assam, where only about 37% of the facilities offering MTP are open 24 × 7, at least half of all the facilities in all the other states provide MTP services 24 × 7. The highest proportions are in Tamil Nadu and Uttar Pradesh (73% and 70%). With the exception of Assam and Madhya Pradesh, no other state has a significant difference between the public and the private sector in the proportion of facilities that are open 24 × 7. In Assam, a higher proportion of private facilities are open for service 24 × 7 (54% vs 22%), while in Madhya Pradesh, a higher proportion of public facilities are open 24 × 7 (68% vs 50%).

Availability of the WHO recommended abortion technologies

Table 2 shows the proportion of facilities that offer different types of abortion procedures. The results show that the majority of the facilities (84–95%) that offer MTP in all the states offer medication abortion or MMA. In Madhya Pradesh and Tamil Nadu, the figure is higher at about 95%. (See Tables 3–5).

A significantly lower proportion of facilities (47–89%) offer vacuum aspiration compared with those that offer MMA in all the states, except Assam, where there is no significant difference. In Uttar Pradesh and Tamil Nadu, less than half of all the facilities offer vacuum aspiration. By contrast, the proportion of facilities offering D&C, a method no longer recommended by the WHO, is much higher in both the states (about 76% in Tamil Nadu and 70% in Uttar Pradesh). In the other states, the proportion of facilities offering D&C is on a par with that of facilities offering vacuum aspiration. At least 70% of the facilities (70–89%) in most of the surveyed states offer D&C; in Assam, at 89%, this proportion is the highest. In all six states, except Uttar Pradesh, significantly higher proportions of private facilities offer D&C compared with public facilities. A greater proportion of private facilities, compared with the public ones, across all the states also offer D&E, a procedure recommended by the WHO for second trimester abortions. The provision of D&E is low across most states; in Madhya Pradesh, Tamil Nadu, and Uttar Pradesh, less than half of all facilities offer D&E.

Although D&C is no longer recommended by the WHO as a safe abortion procedure, given that it is an invasive technique, the procedure requires the use of general anaesthesia. D&E, in contrast, typically uses electric vacuum evacuation (EVA) to evacuate the foetus. However, facilities often use instruments to evacuate the foetus instead. The latter procedure is called dilation and extraction and requires the use of general anaesthesia. It is often confused with the D&E that uses vacuum aspiration. Since it is unknown whether the facilities use vacuum aspiration or extraction when they report using D&E, we examined the facilities that offer D&C or D&E to see what proportion of them report commonly using general anaesthesia. We found that a majority of the facilities in the states of Assam, Tamil Nadu, and Uttar Pradesh report commonly offering local anaesthesia alone or in combination with an analgesic (25% in Gujarat ~85% in Assam) or a sedative or vocal anaesthesia, compared with general anaesthesia (11% in Assam ~64% in Bihar). In Bihar and Gujarat, a majority of the facilities offering D&C or D&E offer general anaesthesia, whereas in Madhya Pradesh, more facilities offer either no anaesthesia or offer local anaesthesia for such procedures compared with general anaesthesia.

Availability of infrastructure at facilities that support confidentiality and respect

Across most of the six states, over 90% of the facilities reported having the ability to offer the client visual privacy. The only exception was Bihar, but even there over three-quarters of the facilities reported having a suitable infrastructure for it. Higher proportions of private facilities (78–100%) reported having this ability than public facilities

Table 1
Percent of all facilities providing MTP, percent certified, percent facilities open 24X7, by ownership, states in India 2015.

	Assam			Bihar			Gujarat			MP			TN			UP		
	%	SE	p-value	%	SE	p-value	%	SE	p-value	%	SE	p-value	%	SE	p-value	%	SE	p-value
Facilities providing MTP	24.3	0.031	–	36.9	0.030	0.004	36.4	0.020	0.001	56.1	0.029	0.000	47.1	0.020	0.000	18.7	0.015	0.105
Public facilities providing MTP	18.3	0.025	0.000	10.7	0.012	0.000	16.4	0.018	0.000	36.3	0.028	0.000	16.5	0.010	0.000	10.9	0.007	0.000
Private facilities providing MTP	40.7	0.046	–	56.1	0.044	–	50.1	0.025	–	66.9	0.028	–	65.1	0.020	–	23.1	0.020	–
Private facilities certified for MTP	87.3	0.059	–	78.9	0.053	0.000	81.6	0.019	0.328	89.5	0.012	0.042	88.4	0.021	0.168	72.7	0.023	0.000
Facilities open 24X7	36.5	0.059	–	68.6	0.015	0.000	65.8	0.026	0.000	53.8	0.050	0.017	73.2	0.027	0.000	70.4	0.018	0.000
Public facilities open 24X7	22.3	0.053	–	68.0	0.027	–	64.9	0.061	–	67.8	0.037	–	73.6	0.035	–	66.6	0.040	–
Private facilities open 24X7	54.1	0.057	0.000	68.6	0.018	0.832	66.0	0.023	0.863	49.7	0.053	0.005	73.1	0.27	0.918	71.5	0.013	0.245

SE-standard error of estimate, MP-Madhya Pradesh, TN-Tamil Nadu, UP-Uttar Pradesh

Table 2
Among facilities offering MTP, type of abortion procedures offered, by method, states in India, 2015.

	Assam			Bihar			Gujarat			MP			TN			UP		
	%	SE	p-value	%	SE	p-value	%	SE	p-value	%	SE	p-value	%	SE	p-value	%	SE	p-value
MMA	83.7	0.032	0.139	86.2	0.009	0.118	88.1	0.016	0.698	95.0	0.006	0.000	93.7	0.010	0.009	89.0	0.015	–
MMA-Public	80.6	0.037	–	69.5	0.043	–	84.1	0.044	–	97.2	0.007	–	82.9	0.031	–	90.5	0.014	–
MMA-Private	87.6	0.002	0.055	88.5	0.008	0.000	89.1	0.006	0.266	94.4	0.007	0.005	95.3	0.010	0.000	88.6	0.011	0.277
VA	88.6	0.020	0.000	72.0	0.034	0.000	68.5	0.032	0.000	81.2	0.032	0.000	49.4	0.033	0.546	47.1	0.022	–
VA-Public	82.1	0.023	–	53.0	0.047	–	66.9	0.046	–	80.0	0.018	–	84.3	0.014	–	41.1	0.044	–
VA-Private	96.7	0.008	0.000	74.6	0.048	0.000	68.8	0.031	0.732	81.6	0.028	0.635	44.2	0.037	0.000	48.7	0.014	0.106
D&E	83.5	0.036	0.000	65.5	0.027	0.000	79.3	0.027	0.000	30.9	0.023	0.000	32.0	0.017	0.000	42.9	0.023	–
D&E-Public	78.9	0.046	–	46.5	0.049	–	50.0	0.054	–	28.9	0.031	–	23.6	0.032	–	36.0	0.044	–
D&E-Private	89.2	0.002	0.025	68.2	0.027	0.000	85.9	0.022	0.000	31.5	0.027	0.526	33.3	0.017	0.008	44.8	0.019	0.063
D&C	89.4	0.023	0.000	83.3	0.027	0.000	76.0	0.026	0.079	79.6	0.020	0.001	76.2	0.017	1.000	70.0	0.022	–
D&C-Public	80.8	0.035	–	72.5	0.041	–	51.4	0.059	–	69.7	0.032	–	66.1	0.037	–	65.5	0.054	–
D&C-Private	100.0	0.000	0.000	84.8	0.027	0.012	81.5	0.019	0.000	82.6	0.018	0.001	77.7	0.018	0.005	71.2	0.018	0.315

SE-standard error of estimate, MP-Madhya Pradesh, TN-Tamil Nadu, UP-Uttar Pradesh.

Table 3
Among facilities offering D & C and D & E, percent that have access to general anaesthesia other anaesthesia such as local anaesthesia or no anaesthesia, states in India, 2015.

States	Anaesthesia used by facilities offering D & C									Anaesthesia used by facilities offering D & E								
	General Anaesthesia			Local* Anaesthesia Alone or in combination			No Anaesthesia			General Anaesthesia			Local* Anaesthesia Alone or in combination			No Anaesthesia		
	%	SE	p-value	%	SE	p-value	%	SE	p-value	%	SE	p-value	%	SE	p-value	%	SE	p-value
Assam	11.3	0.014	0.000	84.9	0.020	0.000	3.8	0.016	–	11.3	0.048	0.162	84.6	0.049	0.000	4.1	0.019	–
Bihar	64.0	0.022	0.000	28.9	0.031	0.000	7.1	0.018	–	65.5	0.029	0.000	30.5	0.032	0.000	4.0	0.010	–
Gujarat	62.4	0.023	0.000	24.5	0.023	0.000	13.1	0.011	–	64.9	0.019	0.000	22.1	0.020	0.000	13.0	0.011	–
MP	19.8	0.023	0.011	46.8	0.050	0.054	33.4	0.048	–	25.0	0.029	0.000	66.0	0.036	0.000	9.0	0.010	–
TN	27.9	0.038	0.002	56.7	0.043	0.000	15.4	0.010	–	34.2	0.060	0.008	49.0	0.062	0.000	16.9	0.024	–
UP	17.3	0.018	0.881	65.7	0.021	0.000	17.0	0.015	–	24.7	0.022	0.004	59.3	0.021	0.000	16.0	0.021	–

* Local anaesthesia was either used alone or in combination with an oral analgesic, sedative, or vocal anaesthesia where the provider keeps the clients attention diverted by talking to them during the procedure. SE-standard error of estimate, MP-Madhya Pradesh, TN-Tamil Nadu, UP-Uttar Pradesh.

(64–94%). Similarly, a majority of the facilities across the states reported having the ability to offer the client auditory privacy (at least three-quarters across the states), and a greater proportion of the private facilities (77–97%) reported having this ability.

We also examined if facilities follow the Indian law in seeking consent for the abortion from the woman alone or if they seek the consent of others in addition to the woman, or even instead of the woman. While seeking consent from women was nearly universal across the states, the proportion of facilities seeking the woman’s consent alone was small. It was as low as 6% in Tamil Nadu and Bihar and as high as 21% in Gujarat and 26% in Madhya Pradesh. Over half of the facilities (38% in Bihar ~70% in Assam) in five out of the six study states preferred taking the consent of the husband as well. This includes facilities that took consent from another person, in addition to the woman and her husband. The proportion of facilities that took consent

from the husband in addition to the woman ranged from 58% of the facilities in Madhya Pradesh to nearly 70% in Assam. Thirty-two percent of the facilities in Bihar, 19% in Uttar Pradesh, and 17% each in Madhya Pradesh and Tamil Nadu reportedly sought consent from others but not from the woman before providing her abortion services.

Provision of abortion-related reproductive health care

A greater proportion of the facilities offering MTP (81–97%) in all the states prescribe and stock spacing methods – such as the pill, condom, IUD, and injection – to women who seek an abortion, compared with limiting methods such as male and female sterilization. However, limiting methods are offered in at least half of all the facilities (52–85%) across all states. In Tamil Nadu, about 85% of all the facilities offer a limiting method, the highest for any of the surveyed states. Only

Table 4
Among facilities offering MTP, percent with infrastructure and practices that respect women's privacy and confidentiality, by ownership, states in India, 2015.

	Assam			Bihar			Gujarat			MP			TN			UP		
	%	SE	p-value	%	SE	p-value	%	SE	p-value	%	SE	p-value	%	SE	p-value	%	SE	p-value
Exam room with visual privacy																		
All	94.3	0.057	0.037	76.6	0.234	0.000	94.5	0.055	0.000	94.3	0.057	0.000	97.6	0.024	0.000	88.6	0.114	–
Public	89.7	0.103		64.4	0.356		94.0	0.060		91.7	0.080		92.3	0.077		81.8	0.182	
Private	100.0	0.000	0.013	78.3	0.217	0.026	94.6	0.054	0.864	95.0	0.050	0.014	98.3	0.017	0.002	90.4	0.096	0.002
Exam room with auditory Privacy																		
All	83.2	0.168	0.286	74.1	0.259	0.000	89.0	0.110	0.564	92.8	0.072	0.001	95.6	0.044	0.000	87.7	0.123	–
Public	72.3	0.277		52.0	0.480		87.1	0.129		88.5	0.115		88.0	0.120		78.4	0.216	
Private	96.7	0.033	0.000	77.1	0.229	0.000	89.4	0.106	0.580	94.1	0.059	0.001	96.7	0.033	0.002	90.3	0.097	
Consent taken from																		
Women only	13.3	0.013	0.181	5.5	0.009	0.000	21.3	0.029	0.001	25.9	0.018	0.001	6.3	0.0088	0.000	8.4	0.015	0.000
Women plus husband/partner	70.2	0.024	0.000	37.5	0.040	0.340	58.4	0.030	0.000	51.4	0.020	0.000	57.2	0.016	0.000	53.2	0.025	0.000
Women plus husband/partner plus Others [†]	9.0	0.029	0.000	25.0	0.030	0.000	10.8	0.014	0.000	6.2	0.008	0.000	19.5	0.014	0.000	19.3	0.015	0.000
Others but not women	7.5	0.014	–	31.9	0.043	–	9.6	0.019	–	16.6	0.020	–	16.5	0.017	–	19.1	0.013	–

SE-standard error of estimate, MP-Madhya Pradesh, TN-Tamil Nadu, UP-Uttar Pradesh

Table 5
Among facilities offering MTP services, percent providing contraceptive services, percent requiring women adopt a method as a condition for abortion by service type, states in India 2015.

	Assam			Bihar			Gujarat			MP			TN			UP		
	%	SE	p-value	%	SE	p-value	%	SE	p-value	%	SE	p-value	%	SE	p-value	%	SE	p-value
Prescribing and stocking modern family planning methods																		
Spacing	81.5	0.037		90.6	0.013		85.5	0.028		81.4	0.022		97.3	0.007		88.3	0.011	
Limiting	57.7	0.047	0.000	82.4	0.027	0.007	78.2	0.022	0.038	52.2	0.024	0.000	84.6	0.014	0.000	57.6	0.023	0.000
Providing advice on the following regarding modern family planning methods																		
Correct use	68.3	0.062	0.953	53.2	0.029	0.000	59.3	0.045	0.072	69.3	0.025	0.648	70.7	0.013	0.167	67.9	0.016	–
Availability	46.6	0.084	0.793	39.0	0.020	0.003	42.8	0.033	0.149	47.7	0.025	0.747	51.0	0.012	0.499	49.0	0.028	–
Advantages/dis-advantages	36.4	0.025	0.000	76.7	0.023	0.120	70.2	0.016	0.666	54.3	0.021	0.015	49.5	0.029	0.002	67.9	0.052	–
What to do in case of failure /incorrect use	26.3	0.069	0.032	17.3	0.017	0.011	17.6	0.020	0.013	14.9	0.015	0.088	8.2	0.010	0.179	10.9	0.018	–
Requiring women to use modern family planning methods as a precondition for an abortion																		
Precondition for an abortion	†	†	0.000	12.8	0.020	0.052	20.3	0.035	0.001	25.9	0.032	0.000	18.5	0.018	0.000	8.3	0.012	–

† Data from Assam were not comparable with the other states; SE-standard error of estimate, MP-Madhya Pradesh, TN-Tamil Nadu, UP-Uttar Pradesh.

a little over half of the facilities offering abortion offer some spacing method of contraception in Madhya Pradesh, Uttar Pradesh, and Assam.

About 70% of the facilities offering MTP in Assam, Madhya Pradesh, Tamil Nadu, and Uttar Pradesh provide counselling and advice on the correct use of contraceptive methods. Fewer facilities offer advice on the availability of the methods, with the proportions ranging from 40% to 50%. Except Assam, at least half of the facilities in the other states (50–77%) offer advice on the advantages and disadvantages of the different methods. In Assam, only about 36% of the facilities offer this service.

Provision of counselling and advice on what to do in case of contraceptive failure is low across all the states (8–26%), but it is the lowest in facilities in Tamil Nadu and Uttar Pradesh, where only 8–10% of the facilities provide such advice. Across the states, many facilities require women to adopt a contraceptive method as a precondition for receiving an abortion service. In most states, 8–26% of the facilities require women to adopt a contraceptive method before receiving an abortion service.

Discussion

In this paper, we examined the capacity of the health facilities in India to provide quality abortion care, or MTP as it is known in India. Using a 2015 survey of the health facilities across six Indian states, and with the help of a framework outlined by Hyman and Castleman [24] and Dennis et al. [26], we examined different variables that measure quality abortion care. These include the proportion of public and

certified private facilities that provide safe abortion services, the proportion of such facilities that are open 24 × 7, the availability of the WHO recommended technologies among facilities offering MTP, and whether the facilities have the infrastructure to provide basic quality care like visual and auditory privacy. This paper also examines whether the facilities follow the law by seeking consent solely from the women and whether they provide post-abortion reproductive health services such as contraceptive services without any coercion.

Our results show that less than half of all the facilities in most states provide MTP services, though more than half of these are open 24 × 7. Although the availability of medication abortion is virtually universal across these facilities, about three-quarters of the facilities offering MTP services offer dilation and curettage or D&C, which is an outdated method and no longer recommended by the WHO [17]. In two states – Tamil Nadu and Uttar Pradesh – the proportion of facilities offering D&C is much higher than those offering vacuum aspiration. More worryingly though, our analysis shows that most facilities that offer D&C – across four of the six states – don't offer general anaesthesia, which is recommended for such procedures. Most rely on local anaesthesia, vocal anaesthesia, or even no anaesthesia. In general, facilities provide the procedure without anaesthesia because of an acute shortage of anaesthetists in the public sector or with the aim of saving money by not hiring or arranging anaesthetists in the private facilities.

The overall access to the MTP services and to the modern WHO recommended methods needs to be improved by enhancing access to the VA method in both public and private health facilities in Bihar, Gujarat, Tamil Nadu, and Uttar Pradesh, and by improving access to D&

E in Bihar, Madhya Pradesh, Tamil Nadu, and Uttar Pradesh. The HFS data analysis elsewhere showed that lack of trained staff, followed by lack of equipment/supplies, was the major reason reported for not providing abortion services at the health facilities in the six study states [33] [34].

This paper also shows that the availability of visual and auditory privacy is nearly universal across all the facilities. However, although the law requires facilities to only obtain the woman's consent before providing the abortion services, a majority of the facilities seek, in addition, at least the husband's consent, and sometimes also the consent of another family member. A small proportion of facilities across the states do not take the woman's consent at all, and, instead, seek consent of other family members only. A sizeable proportion of the facilities do not take the woman's consent at all, which is against the law. Providers in all such facilities must be made aware of the law and should be made to adhere to the legal provisions. More importantly, universal awareness among women in the reproductive age group must be improved. Our results also show that while most facilities provide contraceptive services and counselling, many require a woman to adopt a contraceptive method as a precondition to receiving an abortion. As found in an earlier study, such requirements force women to resort to informal, unsafe and illegal providers [10]. Therefore, facilities providing abortion should be required to adopt a client-centric approach [11,25].

Overall, our results show that much work remains to be done in terms of improving the quality of the abortion services provided in the study population. Policy makers need to first work on improving access to MTP services in all the states. This is especially true of the state of Uttar Pradesh, where about one-sixth of India's population resides and where access to abortion services is dismally low. Despite having the largest population of all the states in the country, Uttar Pradesh has the lowest number of facilities providing abortion services per capita [7]. Besides, women in that state have to travel longer distances to obtain safe abortion services, compared with wealthier states like Gujarat and Maharashtra.

The technology used to provide abortions needs to be upgraded urgently. Given the universal availability of medication abortion, which is safe and preferred by women [35], there should be no need to use D&C. Vacuum aspiration (VA) too should be promoted. This can be done by introducing VA training at the medical college level itself and by providing short-term training for in-service medical professionals. This must be accompanied by improving the availability of adequate equipment and supply at each level of health facilities, especially in the public sector. This study resonates with the findings of prior studies, which suggested expansion of the provider base by allowing first trimester abortion to be conducted by Ayurveda, Unani, Siddha, and Homeopathy (AYUSH) doctors as well as by nurses and auxiliary nurse midwives after acquiring appropriate training [34,37].

Similarly, urgent steps need to be taken to ensure that facilities follow the law and seek consent solely from the women when providing an abortion. Seeking consent from other family members, which is often done in order to avoid trouble [36], is a violation of the woman's rights and confidentiality, and may further deter women from seeking abortions in facilities. Providers also need to be sensitized to not force women to adopt contraceptive methods in order to receive an abortion [11]. This can be done by raising awareness among women about their rights and the legal position vis-à-vis abortion in India. Medical institutions and training centres must include a teaching module on ethical skills and legal protocols in providing quality abortion care, so providers can learn and practice them. The CAC guidelines adopted by the Government of India have already recognized these barriers to quality and person-centric abortion care [32].

The government should set such healthcare standards for abortion

services in India that prioritize the patients and their rights [25]. The framework within which such standards of care are created should include a mechanism to make data on the quality of the service provided available as a matter of routine [11,24–26]. If the government is resource-strapped to make these changes happen, a study in Bihar shows that public–private partnerships can be used to ensure quality abortion services to women [37]. Regardless of whether the government does it alone, or with the help of the private sector, there can be no doubt that various logistical and bureaucratic hurdles need to be addressed in order to make access to safe abortion a reality for all women. Even those facilities that have the capacity to provide abortion services and possess the license do not do so because of such barriers. Issues with poor access have also been reported in states such as Gujarat, Maharashtra, and Tamil Nadu, where it was found that between 20% and 60% of the licensed facilities did not actually provide abortion [8].

Despite a liberal abortion law, India continues to struggle with high levels of unsafe abortion [6,32]. The quality of abortion services in facilities approved for such services has been found to be problematic, with inadequate attention paid to confidentiality and respectful care. This has led to many women seeking illegal abortion from providers who may use unsafe and unhygienic methods of abortion [10–12]. Recognizing this problem, the Government of India in 2014 issued guidelines to program managers and service providers emphasizing person-centric, quality abortion care in public facilities, especially respectful, non-judgmental care [32]. Therefore, the implementation of CAC guidelines must be monitored up to the lowest level of health facilities. This will help improve women's access to safe, legal, and quality abortion care in India.

This study has some limitations. It does not tell the client's point of view on the quality of care since only providers were included as respondents. In future, while attempting to assess the quality of abortion care in India, data collectors should incorporate in the study design interviews of women seeking abortion services.

Contributors

CS and AS conceptualised the idea, reviewed literature, analysed the data, prepared the first and subsequent drafts of the paper, and made most of the interpretations in this paper. MA, MRP, and HS contributed to the literature review and helped in the interpretation of the results. All the authors have seen and approved the final version of the manuscript being submitted.

Declaration of Competing Interest

The authors declare that there is no conflict of interest.

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Appendix A. Comparison of the six survey states, by various sociodemographic indicators from the last 5 years

State	Fertility rates ¹		Unmet need for contraception	Maternal mortality ratio ²	Literacy rate among women age 15–49 years ¹
	Total	Wanted			
Assam	2.2	1.8	14.2	300	71.8
Bihar	3.4	2.5	21.2	208	49.6
Gujarat	2.0	1.5	17.0	112	72.9
MP	2.3	1.8	12.1	221	59.4
TN	1.7	1.5	10.1	79	79.4
UP	2.7	2.1	18.1	285	61.0

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Appendix B. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.srhc.2020.100497>.

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