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ORIGINAL ARTICLE

Impact of the Covid-19 Pandemic on the Prevalence of MTP Cases and Their Clinicodemographic Profile in India: A Retrospective Multicentric Study

Richa Sharma[1] · Pratima Agarwal[2] · Vaishali Jain[3] · Haritha Sagili[4] · Sonali Sarkar[5] · Anuradha Panda[6] · Kruti Deliwala[7] · Krupa Shah[8]

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Abstracts

Background: During the Covid-19 pandemic, reproductive health of women was disproportionately affected due to difficult access to safe abortion and contraceptive services. This study aims to assess the impact of the Covid-19 pandemic on the prevalence of MTP cases and to find out the clinicodemographic profiles of women undergoing MTP during three Covid-waves in different hospitals-Government and private sectors in India.

Methods: This retrospective multicentric cohort study was conducted during three Covid-19 pandemic waves. The records were retrieved from the centers' medical record section and the MTP register from the Department of Obstetrics and Gynaecology.

Results: On an average, 1.1 women/day underwent MTP during covid waves compared to 1.9 women/day during the pre-covid 2019. The first Covid wave's average MTP/day was very low (0.71) compared to the third (2.88) and second wave (1.12), respectively. These differences were statistically significant ($p<0.0001$). The most common indication for MTP was contraceptive failure 245(50.9%), followed by eugenic/congenital anomalies 88(18.9%). A total of 244 cases (50.6%) reported for MTP ≤ seven weeks and 114(23.6%) presented between 7 and 12 weeks. More than half (54%) of the women underwent surgical methods for abortion as the unavailability of medical abortion (MA) drugs. IUCD and sterilization were severely affected during the first and second Covid waves.

Conclusion: Safe abortions are essential services for reproductive-age women. With the uncertainty of future Covid-like an emergency, we should strengthen our telemedicine network so that women can reach out early and MMA can be initiated to reduce the number of surgical abortions and unwanted pregnancies.

Keywords Covid-19 pandemic · MTP · Medical methods of abortion (MMA) · Unsafe abortion · Contraceptive methods

Richa Sharma: Professor, MS, MNAMS, FICOG, FICMCH, CIMS, FMAS; Pratima Agarwal: Chief Medical Officer, DNB, DGO, MNAMS, FICOG; Vaishali Jain: Senior Consultant & HOD, MD, FICOG; Haritha Sagili: Professor, MD, MD, FRCOG, MFSRH; Sonali Sarkar: Professor, MD; Anuradha Panda: Senior Consultant, MD, DGO, FICOG; Kruti Deliwala: Associate Professor, MD, DGO, FICOG; Krupa Shah: Associate Professor, MD.

✉ Pratima Agarwal
drpratima11agrawal@gmail.com

1 Department of Obstetrics and Gynaecology, UCMC and GTB Hospital, 110095, New Delhi, India

2 JIPMER Hospital, Dhanvantari Nagar, Puducherry 605006, India

3 Department of Obstetrics and Gynaecology, Vivekanand Institute of Medical Science, B-1/45, Sector-J, Opp-RBI Colony, Aliganj, Lucknow 226024, India

4 Department of Obstetrics and Gynaecology, JIPMER, Puducherry 605006, India

5 Department of Preventive and Social Medicine, JIPMER, Dhanvantari Nagar, Puducherry 605006, India

6 Obstetrics and Gynecology Department, Apollo Hospitals, Jubliee Hills, Villa 37, Aditya Empress Park. Shaikpet, Hyderabad 500008, India

7 Department of Obstetrics and Gynaecology, Narendra Modi Medical College, 14 Alpakunj Society Hiral Darshan Flats, Bhattha Paldi, Maninagar, Ahmedabad, Gujarat 380007, India

8 Obstetrics and Gynecology, Melaka Manipal Medical College, MAHE, Manipal. 88, Sai Radha Green Valley, Parampali, Udupi, Manipal, Karnataka 576104, India

Introduction

During the Covid-19 pandemic, healthcare systems were globally affected. Women's reproductive health was disproportionately affected due to difficult access to safe abortion and contraceptive services and an increased incidence of unsafe abortions, unwanted pregnancies, and quack practices (1). Women avoided visiting health facilities due to fears about Covid-19 exposure and due to lockdown restrictions.

Safe abortion and contraceptive services are essential for the healthcare of reproductive-age women. It is critical to ensure that women who seek abortion and contraceptives should not suffer from a lack of access. It is well-established that early abortions are safer for women. The Medical Termination of Pregnancy (MTP) Act 1971(2) has set up a limit of 20 weeks of gestational age for abortions, making abortion time-sensitive. A lack of MTP services may mean that women seek an abortion from unsafe providers and put themselves in a dangerous situation.

Improving maternal health is key to achieving Sustainable Development Goal (SDG)-3 good health and well-being for all. A healthy mother is the foundation of a healthy child and family. An important cause of maternal deaths is complications arising from unsafe abortion. Unsafe abortions remain a major public health issue, one of the leading causes of maternal mortality, and each year between 4.7 and 13.2% of maternal deaths can be attributed to unsafe global abortion (3). One of the most important SDG-3.1 targets is reducing the maternal mortality ratio (MMR) to less than 70 per 100 000 live births by 2030 (4).

Women die because they seek to end unwanted pregnancies and, due to a lack of knowledge, have limited access to safe abortion or MTP and contraceptive services. Therefore, safe abortion care should be provided uninterruptedly by the Government and private MTP service providers (5).

This study aims to (1) assess the impact of Covid-19 on MTP cases during the first, second and third Covid-19 pandemic waves and (2) describe the total number of MTP cases and their clinicodemographic profiles among women undergoing MTP in different hospitals-Government and private sectors in India.

Rationale and novelty of the study

There is no Indian data on the effect of the Covid-19 pandemic on the total number of MTP cases and their clinicodemographic profiles. FOGSI (Federation of Obstetrics and Gynaecological Society of India) MTP committee has attempted to study the proportion of MTP cases and their clinicodemographic profiles during the three waves of the Covid-19 pandemic.

Study design

This retrospective multicentric cohort study was conducted during the three Covid-19 pandemic waves after approval by the Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER) scientific advisory committee (JSAC) and Institutional Ethical Committee (IEC No.-JIP/IEC-OS/2022/303).

Study settings

The JIPMER hospital was the coordinating center and collected data from participating centers after approval by IEC for all four respective participating centers. The four centers participating in the study are as follows–

(1) JIPMER Hospital, Puducherry, India (Government sector)
(2) Apollo and Cradle Hospital Hyderabad, Telangana, India (Corporate sector)
(3) Sheth LG Hospital, Narendra Modi Medical College (NMMC) Ahmedabad, Gujarat, India (Municipal Corporation)
(4) Dr. TMA Pai Hospital, Manipal Academy of Higher Education (MAHE) Manipal, Karnataka, India (Private sector)

Sample size: All women who underwent MTP in the Department of Obstetrics and Gynecology at the above all four hospitals during the period of the Covid-19 pandemic first wave (22 March–31 December 2020), second wave (21 March–30 June 2021) and third wave (15 December 2021–10 February 2022).

A questionnaire-based pro forma was shared with the participating centers that provided MTP services and was willing to participate. The participating centers were required to provide details on MTP cases in the first wave (22 March–31 December 2020), the second wave (21 March–30 June 2021), and the third wave of the Covid-19 pandemic (15 December 2021–10 February 2022).

The records were retrieved from the medical record section of all four centers and the MTP register from the Department of Obstetrics and Gynaecology.

Inclusion criteria: All women underwent MTP during the first, second, and third Covid-19 pandemic waves.

Exclusion criteria: Women who underwent missed abortion, incomplete abortion, complicated or septic abortion, and ectopic pregnancy were excluded.

All the women who met the inclusion criteria were included in this study. The outcome parameters viz: women were categorized as per the indication for MTP, age,

obstetrics profile, trimester of MTP, methods of MTP, complications during and after MTP, and methods of contraception adopted.

The data analyzed used descriptive statistics. It was expressed as percentages and proportions (frequencies). In addition, the trend over three Covid-19 waves was determined and compared with the pre-Covid period (2019). The Chi-squared test was used to compare variables. A p-value of < 0.05 was considered statistically significant.

Results

During the selected period of all three Covid-19 waves of 445 days duration, 482 women underwent MTP at all the centers. In contrast, during the pre-covid year 2019 (365 days), 694 women underwent MTP. These data show that, on average, 1.08 women per day underwent MTP during covid waves compared to 1.9 women per day during the pre-covid year 2019. This difference was highly statistically significant ($p < 0.0001$) (Table 1).

When we compared all three Covid waves separately, the first Covid wave-average MTP per day was very less

Table 1 Total number of MTP cases before and during COVID pandemic three waves in India

Name of center	Year 2019 before Covid (pre-Covid)	Year 2020 during Covid	First wave (22/3/2020 to 31/12/2020)	Second wave (21/3/2021 to 30/6/2021)	Third wave (15/12/2021 to 10/02/2022))	Total(all three Covid-waves) 445 days
	One year /365 days	One year /366 days	285 days	102 days	58 days	
JIPMER, Puducherry	233	109	49	24	38	111
Apollo, Hyderabad	168	123	90	50	39	179
NMMC, Ahmedabad	220	113	58	32	74	164
MAHE, Manipal	73	24	5	7	16	28
Total	694	369	202	113	167	482
Average MTP per day	1.90	1.01	0.71	1.12	2.88	1.08
Analysis based on time period and average MTP per day						
Pre-Covid and Covid period (days)			Average MTP per day		*P*-value	
2019 pre-Covid period (365 days)			1.9		$p < 0.0001$	
Covid time all three Covid-waves (445 days)			1.08			
First Covid wave (285 days)			0.71		$p = 0.0002$	
Second Covid wave (102 days)			1.12			
First Covid wave (285 days)			0.71		$p < 0.0001$	
Third Covid wave (58 days)			2.88			
Second Covid wave (102 days)			1.12		$p < 0.0001$	
Third Covid wave (58 days)			2.88			

Table 2 Indications for MTP and number of MTP cases during three Covid waves

S. no	INDICATIONS As per MTP Act	First wave (22 March 2020 to 31st December 2020)	Second wave (21 March2021 to 30 June 2021)	Third wave (15 December 2021 to 10 February2022)	Total MTP cases (%) (Three Covid waves)
I	To save physical and mental health of pregnant women	23	20	22	65 (13.5%)
II	Eugenic/Congenital anomalies	35	20	33	88 (18.3%)
III	Humanitarian/unmarried/pregnancy after rape	5	2	1	8 (1.7%)
IV	Socio-economic reason-unwanted child/not used contraception	26	16	34	76 (15.7%)
V	Failure of contraceptives	113	55	77	245 (50.8%)
	Total	202	113	167	482(100%)

(0.71) as compared to the third (2.88) wave and second wave (1.12), respectively. These differences between the waves were highly significant (Table 1).

The most common indication for MTP was failure of contraceptives in 245(50.8%), followed by eugenic/congenital anomalies in 88(18.3%), 76(15.7%) were for socio-economic reasons, to save the physical and mental health of pregnant women in 65(13.5%) and for humanitarian grounds was in 8(1.7%) (Table 2).

Table 3 shows frequencies for MTP indications at different centers in India.

(1) *JIPMER Hospital, Puducherry*—Most common indication was congenital anomalies in 55(49.6%), followed by saving physical and mental health of pregnant women in 20(18%).
(2) *Apollo Hospitals, Hyderabad, Telangana*—The, most common indication was contraceptive failure in 130 (72.7%), followed by congenital anomalies in 25(13.9%).
(3) *NMMC, Ahmedabad, Gujrat*—Most common indication was failure of contraceptives in 94(57.4%), followed by saving physical and mental health of pregnant women in 33(20.1%) and socio-economic reasons in 32(19.5%).

Table 3 Center-wise indications for MTP cases during three Covid-waves

INDICATIONS* As per MTP Act	First wave (22 March 2020 to 31st December 2020)	Second wave (21 March2021 to 30 June 2021)	Third wave (15 December 2021 to 10 February2022)	Total MTP cases (%) (all Three Covid waves)
JIPMER, Puducherry				
I	8	7	5	20 (18%)
II	25	8	22	55 (49.6%)
III	2	1	-	3 (2.7%)
IV	7	3	8	18 (16.2%)
V	7	5	3	15 (13.5%)
Total	49	24	38	111(100%)
Apollo, Hyderabad				
I	4	3	3	10 (5.6%)
II	7	10	8	25 (13.9%)
III	3	1	1	5 (2.8%)
IV	5	3	1	9 (5.0%)
V	71	33	26	130 (72.7%)
Total	90	50	39	179(100%)
NMMC, Ahmedabad				
I	10	10	13	33 (20.1%)
II	2	1	2	5 (3.0%)
III	–	–	–	–
IV	12	06	14	32 (19.5%)
V	34	15	45	94 (57.4%)
Total	58	32	74	164 (100%)
MAHE, Manipal				
I	1	–	1	2 (7.1%)
II	1	1	1	3 (10.7%)
III	–	–	–	–
IV	2	4	11	17 (60.7%)
V	1	2	3	6 (21.5%)
Total	5	7	16	28 (100%)
**Legends for indication*				
Indication no	Name of indication			
I	To save physical and mental health of pregnant women			
II	Eugenic/Congenital anomalies			
III	Humanitarian/unmarried/pregnancy after rape			
IV	Socio-economic-unwanted child/not used contraception			
V	Failure of contraceptives			

Table 4 Socio-demographic and clinical characteristics of women who opted for MTP from all the four centers

Socio-demographic and clinical characteristics	First wave (22 March 2020 to 31st December 2020)	Second wave (21 March 2021 to 30 June 2021)	Third wave (15 December 2021 to 10 February2022)	Total cases (%) (all three Covid waves)
Age(years)				
≤ 18	1	1	–	2 (0.4%)
18–25	79	34	60	173 (35.9%)
25–30	56	38	50	144 (29.9%)
≥ 30	66	40	57	163 (33.8%)
Total	202	113	167	482 (100%)
Obstetric Profile				
Unmarried	5	2	1	8 (1.7%)
Primigravida	61	38	46	145 (30.1%)
Gravida-2	66	44	63	173 (35.9%)
Gravida-3 and above	70	29	57	156 (32.3%)
Total	202	113	167	482 (100%)
Gestational age at admission				
Up to 7 weeks	108(44.3%)	60	76	244 (50.6%)
7 weeks–12 weeks	46	25	43	114 (23.6%)
12 weeks–20 weeks	48	28	25	101 (20.9%)
> 20 weeks	–	–	23	23 (4.9%)
Total	202	113	167	482 (100%)
Methods of MTP				
Medical method of abortion (MMA)	60	65	97	222 (46.1%)
Surgical (MVA/EVA/D&E) *	142(54.6%)	48	70	260 (53.9%)
Total	202	113	167	482 (100%)
Complications during/after MTP				
Incomplete abortion	17	12	26	55 (11.4%)
Excessive Bleeding P/V	4	2	7	13 (2.7%)
Uterine perforation	1	–	1	2 (0.4%)
No complication	180	99	133	412 (85.5%)
Total	202	113	167	482(100%)
Post-abortion contraception				
Barrier	74	24	31	129 (26.8%)
IUCD**	31	26	35	92 (19.1%)
Sterilization	2	10	10	22 (4.5%)
Hormonal-oral/injection	62	34	47	143 (29.7%)
No contraception/not willing	33	19	44	96 (19.9%)
Total	202	113	167	482 (100%)

**MVA* Manual Vacuum Aspiration

**EVA* Electric Vacuum aspiration

**D&E* Dilatation and Evacuation

***IUCD* Intrauterine contraceptive device

(4) *MAHE, Manipal, Karnataka*—Most common indication was socio-economic reasons in 17 (60.7%), followed by failure of contraceptives in 21.5%.

Table 4 shows the clinical and socio-demographic characteristics of women who opted for MTP. The most common age group was 18 to 25 years. Women most commonly seeking MTP were women who were second gravida followed by gravida 3.

Gestational age at admission for MTP from all the centers: 244 cases (50.6%) reported at or before seven weeks, 114(23.6%) presented between 7–12 weeks, 101 (20.9%) reported at more than 12 to 20 weeks and only 23 cases (4.9%) reported after 20 weeks all during third Covid wave (Table 4).

Methods of MTP: From a total of 482 women, around 54 percent required surgical methods, including removing retained products of conception to achieve complete abortion, and 46% of MTP were by medical methods of abortion (MMA). The most common complication was incomplete abortion in 55 cases (11.4%) after medical methods, followed by excessive bleeding per vagina; in 13 patients (2.7%), only two (0.4%) reported uterine perforation after surgical methods (Table 4).

The post-abortion contraception most commonly used during the covid pandemic was hormonal, both oral and injectable form 29.7%, followed by 26.8 percent barrier methods (Table 4).

Table 5 shows the socio-demographic and clinical characteristics of women who opted for MTP from each center.

Discussion

The indications for MTP are spelled in the MTP Act 1971, and all healthcare facilities are bound to follow the same guidelines, including consent, procedure, and confidentiality. The MTP Act 1971 provides instructions for safe, affordable, and accessible abortion services to pregnant women to terminate a pregnancy under certain circumstances (2).

As per the data available for 2015, 15.6 million abortions were recorded in India, of which 73% were through medical methods of abortion (MMA) accessed outside healthcare facilities and 22% in healthcare facilities. The remaining 5% were conducted through traditional unsafe methods. Among the abortion procedures undertaken in health care facilities, 72% were carried out in private setups, whereas 28% were in Government facilities (6).

The nationwide lockdown was imposed from March 2020 onwards to restrain/combat the spread of the Covid-19 pandemic, adversely impacting safe abortion and contraceptive services for reproductive-age women. The lockdown had an unprecedented impact on women's ability to access safe abortion and contraceptive services. Such a situation deprived pregnant women of good healthcare services, and they were unfortunately left with very few choices, such as the continuation of pregnancy even though it may be unplanned or unintended, attempting an unsafe abortion, or waiting until the relaxation of lockdown restrictions to undergo a second-trimester abortion in a health facility probably. Lockdown restrictions would have resulted in many unwanted pregnancies and unsafe abortions that could lead to unnecessary and avoidable maternal deaths (7).

This present study was conducted to assess the impact of Covid-19 on abortion/MTP care in the Government and private sectors in India. In the first Covid wave, there was a very significant decline (2.7 times) in MTP cases and 1.7 times decline during the second Covid-19 wave compared with the pre-Covid year 2019. In government and private sectors in India, 1.5 times greater number of MTP cases were observed during the third Covid-19 wave as compared with the pre-Covid year 2019.

During the first wave, patients were unable to reach the hospital due to fear of getting Covid infection, financial problems, travel restrictions, and unavailability of Medical abortion (MA) drugs in the healthcare facilities, resulting in unwanted pregnancies as most of the women reached after 20 weeks of gestation age thus crossing the legal limit for abortion as per MTP act 1971(2).

The Foundation for Reproductive Health Services (FRHS) report in India in June 2020(8) estimates that the pandemic situation could have led to an additional 834,042 unsafe abortions and 1,743 maternal deaths in India.

According to a study conducted by the Ipas Development Foundation (IDF) (9), the initial lockdown in the first wave of Covid-19 (from March to June 2020) and the Government response to that had severely compromised access to safe abortion in government and private sector facilities as well as pharmacy stores. Difficult assess to safe abortion services due to the lockdown restrictions led to around 1.85 million abortions, i.e., 50% of the number of abortions that would have taken place in this period normally in the absence of Covid-19 prevention measures during the first wave.

Abortion services were recognized as essential in June 2020, which could be carried out through telemedicine. Teleconsultation services should be utilized to take the history and counseling of the patient and advise investigations (if required) before medical abortion (MA) drugs prescription. Still, the prescription of MA drugs needs direct non-virtual consultation. All precautions to be taken during hospital visits should be advised to the woman during teleconsultation. MMA should be provided as long as they are not contraindicated (7).

Thus, in the present study, the decline in MTP cases during the second Covid wave was lesser than during the first Covid wave, whereas MTP cases increased by 1.5 times during the third wave because the Government issued clear guidelines and subsequently, MA drugs were easily available. Abortion could now be performed even after 20 weeks of pregnancy as the MTP Amendment Act 2021(10), 23 cases (4.5%) of more than 20 weeks GA sought MTP services in the third Covid wave.

The new MTP (Amendment) Act 2021 (10) aims to contribute significantly toward ending preventable maternal

Table 5 Center-wise socio-demographic and clinical characteristics of women who opted for MTP

Socio-demographic and clinical characteristics	First wave (22/3/2020 to 31/12/2020)	Second wave (21/3/2021 to 30/6/2021)	Third wave (15/12/2021 to 10/02/2022)	Total MTP cases (%) (all three Covid waves)
I) JIPMER, Puducherry				
Age (in years)				
≤ 18	1	1	0	2 (1.8%)
18–25	23	11	17	51(45.9%)
25–30	18	5	13	36 (32.4%)
≥ 30	7	7	8	22 (19.9%)
Total	49	24	38	111 (100%)
Obstetric profile				
Unmarried	2	1	0	3 (2.7%)
Primigravida	12	7	10	29 (26.1%)
Gravida-2	17	4	8	29 (26.1%)
Gravida-3 and above	18	12	20	50 (45.1%)
Total	49	24	38	111 (100%)
Gestational age at admission				
Up to 7 weeks	11	4	3	18 (16.2%)
7 weeks–12 weeks	9	4	9	22 (19.8%)
12 weeks–20 weeks	29	16	12	57 (51.4%)
> 20 weeks	0	0	14	14 (12.6%)
Total	49	24	38	111 (100%)
Methods of MTP				
Medical method of abortion (MMA)	35	14	30	79 (71.2%)
Surgical (MVA/EVA/D&E) *	14	10	8	32 (28.8%)
Total	49	24	38	111(100%)
Complications during/after MTP				
Incomplete abortion	11	5	9	25 (22.5%)
No complication	38	19	29	86 (77.5%)
Total	49	24	38	111 (100%)
Post-abortion contraception				
Barrier	21	9	12	42 (37.8%)
IUCD**	4	3	6	13 (11.7%)
Sterilization	–	–	5	5 (4.5%)
Hormonal-oral/injection	4	2	3	9 (8.1%)
No contraception	20	10	12	42 (37.9%)
Total	49	24	38	111 (100%)
II) Apollo, Hyderabad				
Age (in years)				
≤ 18	–	–	–	–
18–25	16	6	3	25(13.9%)
25–30	29	20	12	61(34.2%)
≥ 30	45	24	24	93(51.9%)
Total	90	50	39	179(100%)
Obstetric profile				
Unmarried	3	1	1	5(2.9%)
Primigravida	28	19	10	57(31.8%)
Gravida-2	29	20	18	67(37.4%)
Gravida-3 and above	30	10	10	50(27.9%)
Total	90	50	39	179(100%)

Table 5 (continued)

Socio-demographic and clinical characteristics	First wave (22/3/2020 to 31/12/2020)	Second wave (21/3/2021 to 30/6/2021)	Third wave (15/12/2021 to 10/02/2022)	Total MTP cases (%) (all three Covid waves)
Gestational age at admission				
Up to 7 weeks	60	33	27	120(67%)
7 weeks – 12 weeks	22	8	6	36(20.1%)
12 weeks – 20 weeks	8	9	4	21(11.1%)
> 20 weeks	–	–	2	2(1.2%)
Total	90	50	39	179(100%)
Methods of MTP				
Medical method of abortion (MMA)	13	37	31	81(45.3%)
Surgical (MVA/EVA/D&E) *	77	13	8	98(54.7%)
Total	90	50	39	179(100%)
Complications after MTP				
Incomplete abortion	2	3	2	7(3.9%)
Excessive Bleeding P/V	2	–	1	3(1.7%)
No complication	86	47	36	169(94.4%)
Total	90	50	39	179(100%)
Post-abortion contraception				
Barrier	48	10	7	65(36.3%)
IUCD**	5	13	8	26(14.5%)
Sterilization	–	10	5	15(8.4%)
Hormonal-oral/injection	31	15	17	63(35.2%)
No contraception	6	2	2	10(5.6%)
Total	90	50	39	179(100%)
III) NMMC, Ahmedabad				
Age (in years)				
≤ 18	–	–	–	–
18–25	40	15	40	95(57.9%)
25–30	8	11	20	39(23.8%)
≥ 30	10	6	14	30(18.3%0
Total	58	32	74	164(100%)
Obstetric Profile				
Unmarried	–	–	–	–
Primigravida	20	11	25	56(34.1%)
Gravida-2	18	18	30	66(40.3%)
Gravida-3 and above	20	3	19	42(25.6%)
Total	58	32	74	164(100%)
Gestational age at admission				
Up to 7 weeks	33	18	34	85(51.8%)
7 weeks – 12 weeks	15	12	24	51(31.1%)
12 weeks – 20 weeks	10	2	9	21(12.8%)
> 20 weeks	–	–	7	7(4.3%)
Total	58	32	74	164(100%)
Methods of MTP				
Medical method of abortion (MMA)	7	7	20	34(20.7%)
Surgical (MVA/EVA/D&E) *	51	25	54	130(79.3%)
Total	58	32	74	164(100%)
Complications after MTP				
Incomplete abortion	3	3	13	19(11.6%)
Excessive Bleeding P/V	2	2	6	10(6.1%)

Table 5 (continued)

Socio-demographic and clinical characteristics	First wave (22/3/2020 to 31/12/2020)	Second wave (21/3/2021 to 30/6/2021)	Third wave (15/12/2021 to 10/02/2022)	Total MTP cases (%) (all three Covid waves)
Uterine perforation	1	–	1	2(1.2%)
No complication	52	27	54	133(81.1%)
Total	58	32	74	164(100%)
Post-abortion contraception				
IUCD**	22	10	21	53(32.3%)
Sterilization	2	–	–	2(1.2%)
Hormonal-oral/injection	27	15	23	65(39.6%)
No contraception	7	7	30	44(26.9%)
Total	58	32	74	164(100%)
IV) MAHE, Manipal				
Age (in years)				
≤ 18	–	–	–	–
18–25	–	2	–	2 (7.1%)
25–30	1	2	5	8 (28.6%)
≥ 30	4	3	11	18 (64.3%)
Total	5	7	16	28 (100%)
Obstetric Profile				
Unmarried	–	–	–	–
Primigravida	1	1	1	3 (10.7%)
Gravida-2	2	2	7	11 (39.3%)
Gravida-3 and above	2	4	8	14 (50%)
Total	5	7	16	28 (100%)
Gestational age at admission				
Up to 7 weeks	4	5	12	21(75%)
7 weeks–12 weeks	–	1	4	5 (17.9%)
12 weeks–20 weeks	1	1	–	2 (7.1%)
> 20 weeks	–	–	–	–
Total	5	7	16	28(100%)
Methods of MTP				
Medical method of abortion (MMA)	5	7	16	28(100%)
Surgical (MVA/EVA/D&E) *	–	–	–	–
Total	5	7	16	28(100%)
Complications after MTP				
Incomplete abortion	1	1	2	4(14.3%)
No complication	4	6	14	24(85.7%)
Total	5	7	16	28(100%)
Post-abortion contraception				
Barrier	5	5	12	22(78.6%)
Hormonal-oral/injection	–	2	4	6(21.4%)
Total	5	7	16	28(100%)

**MVA* Manual Vacuum Aspiration, **EVA* Electric Vacuum aspiration, **D&E* Dilatation and Evacuation, ***IUCD* Intrauterine contraceptive device

mortality to help in meeting SDGs—3.1, 3.7and 5.6 and expand access to safe and legal MTP services on therapeutic, eugenic, humanitarian, and social grounds (4).

In the present study, the most common indication for MTP (50.8%) was contraception failure, followed by congenital anomalies in 18.3%. In the study done by Veena et al. (11) from Bangalore, South India, the commonest reason for seeking MTP was reported to be a contraceptive failure (50%), whereas, in another study from JIPMER hospital, Puducherry, South India, by Dasari P and Agarwal P (12),

the most common indication was congenital fetal malformations (38%). These studies were, however, conducted during the non-Covid period.

The most common age group was between 18 and 25 years (36%), and the most common obstetric score was the second gravida (36%) among women seeking MTP in the present study. As per the study by Veena et al. (11), the most common age group was 21–34 years, and more women were gravida-3.

Gestational age (GA) at admission was less than seven weeks (63 days) in more than half (51%) of cases. The most common method of MTP was surgical methods (55%) in the first wave. As the patients were scared to visit healthcare facilities multiple times, the surgical method on a single visit was completed quickly. Other reasons were the non-availability of MA tablets due to lockdown and travel restrictions during the first Covid wave (6). Most were in a dilemma whether they should continue the pregnancy, and with the increasing GA, most of them crossed the limit of 20 weeks according to MTP Act 1971(2).

In the present study, the most common post-abortion contraception methods were hormonal (oral pill/ injectable form) in 29.7% of cases, followed by barrier methods (26.8%), IUCD (19%), and sterilization (4.6%) during the entire Covid period. Long-acting reversible contraceptive methods such as IUCD and permanent sterilization were severely affected during the first and second Covid waves (13).

The most common complication after MTP was incomplete abortion (11%), followed by excessive bleeding (2.7%). However, as per the study by Agarwal P and Dasari P (14) during the pre-Covid period (2016–2019), the most common abortion method was medical methods (MMA) (> 90%) instead of surgical; incomplete abortion was the most common complication, and most common form of contraception was sterilization followed by IUCD.

Conclusion

The utmost need of the hour in India is well-developed safe abortion and contraceptive services. With the uncertainty of future Covid-like an emergency, we should strengthen the existing comprehensive abortion care services with a telemedicine network so that women can reach out early and MMA can be initiated. The increased number of surgical abortions and unwanted pregnancies seen in the first Covid wave has taught us that reproductive health is as important as managing the pandemic. Due to the lack of adequate contraceptive services, medical abortion drugs, and easily accessible, safe abortion services, there was an increase in unwanted pregnancies and surgical and unsafe abortions. MTP is legal in India, but still, a large number of women have unsafe abortions. Unsafe abortion is a significant yet preventable cause of maternal mortality and morbidity. Women's sexual and reproductive health is vital in addition to women's physical welfare. If sexual and reproductive health is well cared for, it will ultimately lead to healthy women, a healthy society, and a healthy nation.

Strengths of study

The present study is only available literature that has projected the combined impact during all three Covid-19 waves on abortion care and contraceptive services. The present study has attempted to find the real impact on healthcare facilities, private and Government settings, among MTP cases separately during each Covid wave. Another strength of this study is that it is a multicentric study and thus, reflects the data from different populations.

Limitations

The present study is of retrospective nature. Hence, the variables such as socio-economic group, reasons for contraceptive failure, and other preventive factors for MTP could not be analyzed.

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Declarations

Conflict of interest The authors declare no conflict of interest in this manuscript.

Ethical approval Ethical approval was obtained from the Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER) scientific advisory committee (JSAC) and Institutional Ethical Committee (IEC No.-JIP/IECOS/2022/303) before the commencement of the study.

Ethical standards and research involving human and animal participants The study involving human participants followed the ethical standards of the institute's ethical and research committee and the 1964 Helsinki Declaration and its later amendments.

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