Self-reported Complications among Women Seeking Induced Abortion in India: An Evidence from National Family Health Survey (2019-21)

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Abstract

This study aims to assess the types of sources and service providers and examine the association of abortion complications among Indian women. The study used fifth rounds of National Family Health Survey data. A total of 8035 induced abortions reported at the India level have been used for the analysis. Descriptive analysis has been performed to see the level of types of sources and service providers, and multivariate logistic regression analysis has been applied to examine the association of abortion complications. The results of this study highlight that 12.5% of abortions terminated in the second trimester. More than half (56.2%) of women's abortions are terminated at private health facilities. Only one in every five women went to public health facilities. Doctors are the major abortion service providers (56.7%), and 14.2% of women who sought abortion reported abortion complications. Women who sought an abortion in the age groups 40–49, Muslim religion, second wealth quintile household, and second trimester were 1.63 times, 1.34 times, 1.22 times, and 1.65 times, respectively, more likely to report complications than their referenced counterparts. The findings of this study suggest addressing the demand for abortions by accessing and improving services in the public health system.

Keywords: Abortion; sources; providers; complications; India

Introduction

Every year, about 73 million induced abortions take place worldwide. Three out of ten pregnancies and six out of ten of all unplanned pregnancies resulted in an induced abortion (Bearak et al., 2020). However, global estimates from 2010-14 indicate that 45% of all induced abortions are unsafe. Furthermore, it was estimated that 58% of abortions done in southcentral Asian countries, of which India is regarded as a part and in which 69% of the region's population resides, were unsafe (Ganatra et al., 2017). Unsafe abortion is an important preventable cause of maternal deaths and morbidities. It can lead to physical and mental health complications and social and financial burdens for women, communities, and health systems (World Health Organization (WHO), 2021). In India, the burden of unintended pregnancies and unsafe abortions remains significant. According to recent estimates by WHO, which showed that 44% of pregnancies are unintended in India, and the proportion of unintended pregnancies that turned into induced abortions has risen from 47% to 77% from 1990-94 to 2015-19 (Bearak et al., 2020; Bearak et al., 2022). A study from India also indicates that 67% of abortions in India were classified as unsafe, varying widely across the states (range 45.1%–78.3%) (Yokoe et al., 2019).

Safe and legal abortion services should be accessible to all women seeking an abortion to prevent unnecessary deaths from unsafe abortions. The Medical Termination of Pregnancy (MTP) Act, 1971 make induced abortions legal in India (Government of India (GoI), 1971). The Act permits legal abortion for women whose pregnancy poses serious risks, including physical injury, mental health risks, contraceptive failure, rape, or potential childbirth abnormalities. The Act also permits women to terminate pregnancy up to 20 weeks of gestation. In 2002, the MTP Act was amended to allow the use of the medical method of abortion (MMA), promoting safer and broader access to abortion services (GoI, 2002). The GoI has limited the use of the Medically Safe Method of Miscarriage (MMA) from 9 to 7 weeks of gestation for safety reasons (GoI, 2016). In an effort to improve the standard of abortion-related services provided in the public and private sectors, the GoI has released operational guidelines for Comprehensive Abortion Care (CAC) Services (GoI, 2014). Toward the aim of further improving access to safe abortion services, the government passed a new amendment of the MTP Act, 1971, called the MTP Act, 2021. The Act expands access to safe abortion services, allowing women to terminate pregnancy up to 20 weeks due to contraceptive failure, with the need for two Registered Medical Practitioners' opinions for 20-24 weeks and a state-level medical board for substantial abnormalities. The Act extends the upper gestation limit from 20-

24 weeks for certain women, including rape survivors, incest victims, and vulnerable groups like differently abled women and minors (GoI, 2021).

One study suggests that a large proportion of the women population in India still have unsafe and illegal abortions, affecting their health and raising the nation's overall mortality rate significantly (Stillman et al., 2014). Furthermore, Bearak et al. (2022) estimated that 77% of unsafe abortions in India. However, Pyne & Ravindran (2020) estimated that only 22% of abortions were safe in India. Some studies from India indicate that unintended pregnancy of women is significantly associated with lower maternal healthcare utilization and poorer infant and maternal health outcomes in India (Singh et al., 2012; Singh, Singh & Mahapatra, 2013; Dehingia et al., 2020). Recent studies suggest that about 8% of maternal mortality was attributed to unsafe abortions, with unsafe abortion being the reason for the death of eight women every day in the country (Meh et al., 2022; UNFPA, 2022). Furthermore, literature suggests that young and unmarried women are particularly susceptible to sexual and reproductive health issues, primarily due to inadequate access to safe abortion services (Stillman et al., 2014). Pallikadavath and Stones' 2006 study on abortion in India suggests that rising women's education may have influenced the rise in demand for induced abortion. But, in India, abortion services face numerous barriers, including lack of awareness, poor quality, lack of trained personnel, scarcity of modern methods, and sociocultural stigma (Banerjee et al., 2013; Visaria, Barua, & Mistry, 2008; Jejeebhoy et al., 2011a, b).

With this drop of evidence, this study aims to study the level of self-reported abortions, the characteristics of women who had induced abortions, and the gestational age at which abortion was sought. This study also examines the socio-economic differentials and regional patterns in places where induced abortion is sought, the type of service providers, and the susceptibility to experiencing any postabortion complications.

Data Source

The study used the fifth round of National Family Health Survey (NFHS) data, which is a nationally representative cross-sectional survey that collected information on the abortion services sought by women. The present study used information from the women's data file to meet the objective of this study. The work presents the abortion-related issues using NFHS (2019-21) data. In this study, the terms abortion and induced abortion have been used interchangeably to enhance their readability. We applied national sample weights to the women's data file to make the results nationally representative. Women who had reported an

induced abortion for the last pregnancy during the five years preceding the survey were included in the analysis—a total of 8035 induced abortions were reported at the Indian level. NFHS-5 gathered information from the women who had undergone an induced abortion since January 2014 on the place of abortion, type of service provider, and the occurrence of any abortion complications. The series of questions used in the survey on these important aspects of abortion included, "How many months pregnant were you when the last such pregnancy happened?", "Where was the abortion performed?", "Who performed the abortion?", "Did you have any complications from the abortion?" and "Did you seek treatment for the complication?" Based on their responses, the prevalence of self-reported induced abortion complications according to background characteristics, type of provider, source (place of abortion), and gestational age was estimated.

Statistical Analysis

For the analysis of this study, descriptive analysis (percentages and percentage distribution) and multivariate logistic regression analysis to estimate the likelihood of any abortion complication were used. Spearman chi-square test and p-value were used to see the significant association between the outcome and the selected characteristics of women.

Results

Characteristics of women who had induced abortion and differentials in gestational age

Table 1 shows the percentage distribution of abortions by women's characteristics and gestation age in India. The majority of the women (56.2%) who had reported abortion were in the age group 20–29, followed by those aged 30–39 (37.3%). The proportion of women reporting termination of pregnancy among those who had one and two living children was found to be higher, with 29.6% and 39.3%, respectively. The marital duration of more than half (55.8%) of those women who reported induced abortion was between 6 and 15 years, and more than one-fifth (22.1%) had completed 3–5 years of marriage. About 14% of women who reported termination of their last pregnancy had completed 16 or more years of marriage. It is to be noted that more than two-thirds (62.6%) of rural women had a higher proportion of abortions. Women with 8–11 years and 12 or more years of schooling were found to be a higher proportion (35.6% and 31.8%). The share of Hindu women (86.5%) was the highest among the reported induced abortions. In every Muslim religion, women out of ten go for induced abortions. One-fourths of Scheduled Caste and other caste women reported abortions. OBC women mainly showed a higher (44.4%) proportion of induced abortions. The share of reported

abortions increased from 13.3% in the lowest wealth quintile to 23.5% in the fourth quintile. The share of the central region was the highest (25.3%) in the reported abortions, followed by the eastern (23.3%) and the southern regions (21.3%).

A large majority of self-reported abortions (85.8%) were found to take place in the first trimester and 12.5% in the second trimester. Women who reported a relatively higher proportion of second-trimester abortions than their counterparts in the corresponding categories included those having no surviving children (25.9%), those women with shorter duration of marriage (17.6% in 0-2 years of marriage), and those not in marriage union (16.3%), those having no schooling (17.3%), and those other than Hindu and Muslims (12.9%). It is observed that women of 21.7% of the reported abortions in the southern region occurred in the second trimester, which is the second highest after those women having no surviving children across all background characteristics of the women.

Sources for induced abortion by type of health facility: Sociodemographic and regional variations

Table 2 shows the percentage distribution of sources and types of providers of seeking induced abortion among Indian women. More than half of the women (56.2%) reported seeking an abortion from private health facilities, and about 20% from public facilities. Approximately 24% of them also reported that they had undergone an abortion neither at a public nor a private health institution. The pattern of seeking termination of a pregnancy varies by characteristics of women. Compared to the women in the other age groups, a slightly higher proportion of women aged 20–29 (25.9%) reported seeking induced abortion outside of a public or private healthcare facility. The proportion of women seeking an abortion outside of a healthcare facility was found to increase with an increase in the number of living children. About 31% of women having three or more living children did not visit any health facility compared with only 10.9% of those who did not have any surviving child. More than one-fourth of the rural women (26.2%) and those with no schooling (30.3%) reported seeking an abortion outside of any health institution. Even in rural areas, where the private sector is not so visible, more than half of the women (52.5%) sought abortion at private health facilities. Household economic status shown by the wealth index also has a clear association with the sources of seeking induced abortion. The pattern falls along with expected results; about one-third (32.3%) of the women in the lowest wealth quintile did not go to a public or private health facility to seek induced abortion. The tendency to seek abortion at a private health facility was found to

increase with household wealth and years of schooling and decrease with the number of living children. About three-fourths of Southern region women had the highest reported abortions at private health facilities, followed by the women with the highest wealth quintile household (69.8%) and Western region women (68.5%). This indicates that a relatively high proportion of women who were aged 20–29, had more than three children, were uneducated and poor, lived in rural areas, and resided in the eastern and central regions sought induced abortion outside of an institutional health facility. Regional variations are critical for understanding the influence of sociocultural factors in seeking abortion from a particular type of health facility, as well as for policy making. A relatively high proportion of women in the central and eastern regions did not seek an abortion from any type of health institution. Women from the western (74.4%) and southern (68.5%) regions showed considerable dependence on private health institutions. The north-eastern region revealed an exceptional pattern, with 45% of the women having sought abortion at public health facilities.

Differentials in the type of providers for seeking induced abortion

Table 2 provides the differential in service providers for seeking abortions. More than half of the women (56.7%) had sought abortion from doctors, followed by about one-fourth (24.7%) and nurse/ANM/ LHV (13.9%). The remaining 4.7% had sought abortions from other providers, which may include mainly traditional birth attendants commonly known as Dais, traditional healers, herbal practitioners, and massagers. The characteristics of women show a considerable variation in terms of the type of service provider for induced abortion. The results showed that a higher proportion of women from southern and western regions (more than 85% each), those living with no children (72.4%), those with 12 or more years of schooling (67.9%), those with the highest wealth quintile households (66.1%), urban (65.8%), those with 0-2 years of marriage (65.4%), and 15-19 years (61%) had sought abortions from doctors. On the other hand, about one-third of women with three or more living children (32%), those in the lowest wealth quintile (32.3%), and those women residing in the East (36.9%) and Central (32.7%) region. In the central region (28.9%), those women with no schooling (24%), those living with more than three children (23.4%), and lowest wealth quintile women showed a large proportion of women went to nurse/ANM/LHV to see termination of their pregnancy.

Self-reported abortion complications and the likelihood of their occurrence

Table 3 shows the odds ratio of abortion complications with the characteristics of the women. The results showed that more than 14% of women reported complications due to abortions.

About one-fourth (24.9%) of women who were not in marital union sought their last abortion reported the highest complications of abortions. More than one-fifth of the women aged 40-49 (20.4%), those living with no surviving children (21.9%), and those having second trimester (21.1%) reported their termination of pregnancy complications.

The results obtained from multivariate logistic regression analysis revealed that the age of women, number of living children, marital duration, years of schooling, religion, wealth status, region to which the women belong, and gestational age are statistically significant and associated with the likelihood of reporting abortion complications. After controlling for other background characteristics, women who sought an abortion in the age groups 40–49 were 1.63 times more likely to report complications than their younger counterparts in the age group 15–19 years. With the increase in the number of living children, the proportion of women reporting any abortion-related complication was found to decrease. Women with three or more living children were 57% less likely to report any complications compared with women who did not have any living child. Women with marital duration of 3-5 years and 6-15 years were 36% and 38%, respectively, less likely to report any abortion-related complications than the women who did not in marriage union. Women with a higher number of years of schooling showed lower abortion-related complications. Women with ≤7 years, 8–11 years, and 12 or more years of education were 18%, 19%, and 22%, respectively, less likely to report complications than those without schooling. Women of Muslim religion and second wealth quintile households were 1.34 times and 1.22 times, respectively, more likely to report any abortion complication than Hindu women and women of the lowest wealth quintile. Women in the southern region were 49% [AOR=0.51; 99% CI (0.39, 0.66)] less likely to report any abortion complication compared to women in the northern region. Concerning the gestational age, the second trimester showed a significant association with abortion complications. The results indicated that women who had sought abortion in the second trimester of the pregnancy had 1.65 times [AOR=1.65; 99% CI (1.38, 1.97)] higher odds of reporting abortion complications as compared to those who had sought abortion in the first trimester. The other factors, such as abortion at private health facilities, nurse/ANM/LHV, and other service providers, also showed higher abortion complications but not as significant association with any abortion complications.

Conclusion

The findings of this study highlight the influence of social, educational, and regional factors on abortion complications. The study suggests that women with no surviving children, those residing in the southern region, women with 0-2 years of marital duration, and women with no education have higher proportion of abortions in the second trimester. Southern region women, women with the highest wealth quintile household, and western region have reported higher reported abortions at private health facilities. One in every five women went to the public health facilities for abortions. In the northeastern region, women showed an exception pattern with the highest sought of abortions at the public health facilities. Doctors are the major abortion service providers in India. Women who sought an abortion in the age groups 40–49, Muslim religion, second wealth quintile household, and second trimester were more likely to report complications than their referenced counterparts' women. The findings of this study suggest addressing the demand for abortions by accessing and improving services in the public health system.

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Table 1. Percentage distribution of abortions by background characteristics of women and gestational age, NFHS (2019-21), India

Characteristics	Percentage distribution	Weighted (n)	Gestational age of abortion		
			First Trimester	Second Trimester	Third Trimester
Age (years)				p=0.152	
15-19	2.0	164	77.7	17.7	4.6
20-29	56.2	4,517	85.2	12.9	2.0
30-39	37.3	3,000	86.9	11.7	1.4
40-49	4.4	353	87.6	11.8	0.6
Living Children				p<0.001	
None	8.0	645	71.5	25.9	2.7
One	29.6	2,380	84.2	13.1	2.7
Two	39.3	3,158	88.1	10.6	1.3
Three and more	14.9	1,198	88.9	10.2	1.0
Marital duration				p=0.021	
Not in union	1.4	109	82.3	16.3	1.4
0-2 years	7.2	581	81.2	17.6	1.2
3-5 years	22.1	1,774	84.7	12.5	2.7
6-15 years	55.8	4,480	86.5	11.9	1.6
16 + years	13.6	1,091	87.4	11.4	1.3
Residence				p=<0.001	
Urban	37.4	3,002	88.5	10.4	1.1
Rural	62.6	5,032	84.1	13.7	2.2
Years of schooling				p=0.004	
No schooling	13.4	1,075	80.6	17.3	2.1
≤7 years	19.2	1,545	87.5	11.0	1.6
8-11 years	35.6	2,862	86.5	11.5	2.1
12 or more	31.8	2,553	86.1	12.5	1.4
Religion				p=0.020	
Hindu	86.5	6,948	85.8	12.5	1.7
Muslim	9.5	763	86.4	11.8	1.8
Others	4.0	324	83.6	12.9	3.5
Caste/tribe				p=0.011	
Scheduled Caste	24.0	1,931	84.5	13.2	2.3
Scheduled Tribe	6.0	485	85.6	12.3	2.2
OBCs	44.4	3,564	85.3	12.9	1.8
Others	25.6	2,055	87.9	11.1	1.0
Wealth quintile				p=0.542	
Lowest	13.3	1,065	85.1	13.2	1.7
Second	18.7	1,503	84.6	14.1	1.4
Middle	21.2	1,705	84.7	12.7	2.6
Fourth	23.5	1,890	85.8	12.5	1.7
Highest	23.3	1,872	88.0	10.5	1.5
Region				p=<0.001	
North	11.6	935	86.4	12.2	1.5
Central	25.3	2,030	90.6	8.5	1.0
East	23.3	1,870	88.7	10.7	0.6
North-east	4.7	379	93.5	5.2	1.4
West	13.8	1,108	87.4	11.3	1.4
South	21.3	1,713	73.8	21.7	4.5
India	**100.0**	**8,035**	**85.8**	**12.5**	**1.8**

Table 2. Percentage distribution of abortions by sources and types of providers by selected background characteristics of women, NFHS (2019-21), India

Characteristics	Place of Abortion			Service Provider			
	Public	Private	Home	Doctor	Nurse/ANM/LHV	Self	Others
Age (years)		p<0.001			p=0.005		
15-19	16.2	62.5	21.4	61.1	10.0	24.1	4.8
20-29	18.8	55.3	25.9	55.2	13.5	26.2	5.1
30-39	21.8	57.0	21.3	58.9	14.5	22.7	3.9
40-49	19.1	58.4	22.6	56.1	15.0	22.6	6.3
Living Children		p<0.001			p<0.001		
None	22.4	66.7	10.9	72.4	12.6	10.0	5.0
One	20.3	58.6	21.0	65.2	9.1	22.4	3.3
Two	18.7	56.4	24.9	57.8	12.2	25.2	4.8
Three and more	20.5	49.0	30.5	38.5	23.4	32.0	6.2
Marital duration		p=0.005			p<0.001		
Not in union	28.4	49.4	22.2	54.9	15.3	19.2	10.6
0-2 years	19.3	61.5	19.2	65.4	10.4	19.1	5.1
3-5 years	17.8	59.7	22.5	62.2	10.3	23.5	4.0
6-15 years	20.2	54.9	24.9	55.3	14.5	25.8	4.5
16 + years	21.5	53.6	25.0	49.4	18.9	25.8	6.0
Residence		p<0.001			p<0.001		
Urban	17.3	62.5	20.2	65.8	9.4	20.9	3.9
Rural	21.4	52.5	26.2	51.3	16.6	27.0	5.1
Years of schooling		p<0.001			p<0.001		
No	20.0	49.7	30.3	39.2	24.0	29.7	7.1
≤7 years	25.4	47.8	26.8	51.2	15.8	28.1	5.0
8-11 years	21.0	52.9	26.1	56.3	12.1	26.6	4.9
12 or more	15.2	67.6	17.2	67.9	10.5	18.4	3.3
Religion		p<0.001			p=0.001		
Hindu	19.0	56.4	24.6	56.5	13.7	24.9	4.9
Muslim	23.5	54.3	22.3	57.0	14.0	24.9	4.1

Others	29.8	55.9	14.3	60.6	18.4	18.9	2.1
Caste/tribe		p<0.001			p<0.001		
Scheduled Caste	22.5	53.3	24.2	53.7	15.5	24.8	6.1
Scheduled Tribe	28.5	44.1	27.4	53.8	12.1	28.0	6.1
OBCs	18.7	57.5	23.8	56.3	14.9	24.5	4.2
Others	17.4	59.5	23.1	61.0	11.1	24.1	3.8
Wealth quintile		p<0.001			p<0.001		
Lowest	25.7	42.0	32.3	39.4	20.5	32.3	7.9
Second	24.3	47.3	28.4	46.7	17.2	30.8	5.3
Middle	22.6	55.8	21.6	60.1	13.2	21.6	5.1
Fourth	18.8	58.1	23.2	62.2	10.4	23.4	4.0
Highest	11.7	69.8	18.5	66.1	11.7	19.6	2.6
Region		p<0.001			p<0.001		
North	22.8	49.1	28.1	47.5	20.6	28.0	3.9
Central	14.2	52.6	33.2	31.7	28.9	32.7	6.7
East	17.9	47.2	35.0	43.7	11.5	36.9	7.8
North-east	45.1	29.0	25.9	65.4	5.5	27.7	1.5
West	15.6	74.4	10.1	85.2	3.1	10.7	1.0
South	24.4	68.5	7.2	85.3	3.9	8.5	2.4
India	**19.9**	**56.2**	**23.9**	**56.7**	**13.9**	**24.7**	**4.7**

Table 3. Odds Ratios of reporting abortion complications with characteristics among Indian women (15-49 years), NFHS (2019-21), India

Characteristics	Complications	Weighted (n)	Odds ratio	p>|z|	95% CI
Age	p=0.019				
15-19	16.9	164	1.0		
20-29	14.1	4,517	1.19	0.442	[0.76,1.85]
30-39	14.9	3,000	1.31	0.256	[0.82,2.09]
40-49	20.4	353	1.63	0.08	[0.94,2.82]
Living Children	p<0.001				
None	21.9	645	1.0		[1.00,1.00]
One	14.7	2,380	0.65	<0.001	[0.50,0.83]
Two	13.6	3,158	0.55	<0.001	[0.43,0.72]
Three and more	14.2	1,852	0.43	<0.001	[0.32,0.58]
Marital duration	p<0.001				
Not in union	24.9	109	1.0		

0-2 years	17.6		581	0.69	0.143	[0.41,1.14]
3-5 years	14.3		1,774	0.64	0.076	[0.39,1.05]
6-15 years	13.5		4,480	0.62	0.053	[0.39,1.01]
16 + years	18.2		1,091	0.77	0.317	[0.46,1.28]
Residence		p=0.158				
Urban	13.9		3,002	1.0		
Rural	15.3		5,032	1.06	0.427	[0.91,1.24]
Years of schooling		p=0.160				
No	18.9		1,075	1.0		
≤7 years	14.5		1,545	0.82	0.078	[0.66,1.02]
8-11 years	14.3		2,862	0.81	0.054	[0.65,1.00]
12 or more	13.7		2,553	0.78	0.044	[0.61,0.99]
Religion		p=0.004				
Hindu	14.3		6,948	1.0		
Muslim	19.1		763	1.34	0.005	[1.09,1.65]
Others	14.1		324	0.99	0.943	[0.70,1.38]
Caste/tribe		p=0.057				
Scheduled Caste	14.8		1,931	1.0		
Scheduled Tribe	12.2		485	0.8	0.149	[0.58,1.09]
OBCs	14.0		3,564	0.99	0.882	[0.84,1.17]
Others	16.6		2,055	1.12	0.23	[0.93,1.35]
Wealth quintile		p=0.698				
Lowest	15.2		1,065	1.0		
Second	16.5		1,503	1.22	0.082	[0.97,1.53]
Middle	14.8		1,705	1.12	0.333	[0.89,1.43]
Fourth	14.4		1,890	1.12	0.372	[0.87,1.44]
Highest	13.3		1,872	0.99	0.941	[0.74,1.32]
Region		p<0.001				
North	16.3		935	1.0		
Central	15.7		2,030	0.95	0.69	[0.76,1.20]
East	16.9		1,870	1.03	0.782	[0.82,1.31]
North-east	12.9		379	0.8	0.239	[0.55,1.16]
West	15.5		1,108	0.91	0.479	[0.71,1.17]
South	10.3		1,713	0.51	<0.001	[0.39,0.66]
Gestational age		p<0.001				
First trimester	13.8		6,892	1.0		
Second trimester	21.1		1,001	1.65	<0.001	[1.38,1.97]
Third trimester	16.9		142	1.47	0.101	[0.93,2.33]
Place of abortion		p=0.006				
Public	14.4		1,597	1.0		
Private	15.6		4,515	1.12	0.182	[0.95,1.33]
Home	13.0		1,923	0.88	0.354	[0.66,1.16]
Service Provider		p=0.002				
Doctor	14.5		4,557	1.0		
Nurse/ANM/LHV	17.8		1,117	1.15	0.163	[0.95,1.39]
Self	13.2		1,984	1.04	0.733	[0.81,1.34]
Others	17.0		377	1.28	0.143	[0.92,1.78]
India	**14.3**		**8035**			