

# Post Abortion Complication and Treatment Seeking Behavior among Women in India

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## Abstract

The study on abortion, post abortion complications among women and their treatment seeking behavior is limited in Indian context mainly because of the stigma and taboos associated with abortion. Therefore, this study attempts to find out the pattern of place of abortion, post-abortion complication and determinants of treatment seeking behavior of post-abortion complications in India. The study using the data from NFHS 4 and employing both bi-variate and multivariate analysis found that the more than half of the abortions happened in private health facilities while about one fourth of abortions happened in outside the health facility. Post abortion complication is found to be substantially higher in north region followed by central region. Fifteen percentages of women do not go for treatment for post abortion complication mainly because they can't afford the treatment and due to social stigma about the abortion. Therefore, these sections of women should be the priority from policy point of view. As there is strong social stigma attached to abortion in India the reporting of abortion is a concern. To minimize this, awareness about abortion to the people should be provided and women need to be educated.

**Keywords:** Place of Abortion, Post-Abortion Complication, Treatment Seeking Behavior, India.

## Introduction

Although abortion has been legal in India under the Medical Termination of Pregnancy Act, 1971, which is for more than three decades, access to safe services remains limited for most women. In practice, legal abortion services are limited, low level of awareness associated with induced abortion, costs of services with legal abortion, and social stigma associated with induced abortion; as a result, a large number of unsafe abortions performed in India (Gupte, 1997). The According to World Health Organization, unsafe abortion is a procedure for terminating an unintended pregnancy carried out either by persons lacking the necessary skills or in an environment that does not conform to minimal medical standards or both (WHO, 2014). In a study, it found that 90% of abortions in India performed under unsafe conditions, either person lack of necessary skills or in unapproved facilities. The Medical Termination of Pregnancy Act was amended in 2002 and 2003 to provide better implementation and increase access for women, especially in the private health sector (Cleland, 2003). A study conducted in Haryana shows that women who had undergone an abortion were 1.7 times more likely to perceive their health status as worse as compared to women who had not experienced any abortion (Agrawal, 2013). Even if effective contraceptives related facilities access by all women in reproductive age group, circumstances would still arise in which a pregnancy is or becomes unwanted, and the woman in question will feel the need to end it, So

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people or society should give freedom to every woman in positions of vulnerability that they can terminate their pregnancy as they want to do in a safe manner (Berer, 2017). Three- fourth women experienced post-abortion complications. Twenty- four percent of the cases did not take any treatment after spontaneous abortion. A post-abortion complication was found to be higher among rural women, and women with higher birth order or higher age. Bleeding and pains (abdominal pain, body/ hand/leg pain, and stomach pain) are the most common complications reported by many women after induced abortions (Krishnamoorthy et al., 2004).

It is important to note that nearly 15 percent of pregnancy-related deaths occur due to post-abortion complications in developing countries (WHO, 1995). A community-based study conducted in Rajasthan on unwanted pregnancy and induced abortion shows that 13 percent of women have experience induced abortion, and out of those 26.1 percent, women experienced complications due to abortion. The most commonly reported complications are backache, fatigue, weakness, foul-smelling discharge, and high fever. The complications are slightly higher among rural women than urban women (Barge, 2004). A study conducted in Haryana shows that the most common health problems are pain in the lower abdomen and weakness and tiredness body pain and pain related to chest and respiration. Further, one out of ten women reported having other health problems, which include allergy, headache, hypertension, heart problems, hearing problems, hysterectomy, hysteria, menstrual irregularities, swelling of the body, and tuberculosis (Agrawal, 2013).

Unsafe abortion was a significant public health problem, especially in contexts where access to legal abortion is highly restricted. An estimated 7.9% of maternal deaths are due to unsafe abortion (Say, 2014). Unsafe abortion is also a leading cause of maternal morbidity. Up to 40% of women who experience abortion complications do not receive sufficient care. Inequalities in accessing abortion-related care have identified in many settings associated with multiple individual characteristics, including, but not limited to, age, marital status, ethnicity, geographic location, and economic circumstances. Women experience numerous intersecting inequalities in access to abortion-related care (Coast et al., 2018). Due to restricted contraceptive use based on religious beliefs, limited support from family and husband women forced to seek an abortion, mostly from the private, unskilled, and unregistered health facilities. Due to the lack of safe abortion facilities, most women go for unsafe abortion (Behera, 2015). Abortion was higher among women belongs to an urban residence and medium standard of living. Religion was not significantly related to abortion in the case of the first order of birth, but in the second and fourth birth order, women belong to Muslim religions had less abortion in comparison to women belongs to the Hindu religion (Saseendran, 2006). According to some observers, the use of abortion decreases as contraceptive prevalence rises, and others claim that increased use of family planning methods causes abortion incidence to rise. When fertility levels in a population are changing, the relationship between contraceptive use and abortion will also be changed (Cleland, 2003). Slightly more than half of the patients reported that they had used a contraceptive method in the month they became pregnant. There is evidence that if a woman using long-acting reversible methods, chances of abortion are more (Jones, 2017). Abortion ratio increases with parity, within parity, it is lowest among women with no son, and it is highest among women with two sons and a daughter (Bairagi, 2001). There are many factors that influence induced abortion. Age structure in case of abortion play bimodal role means women in the youngest age group had more abortion because they want to delay childbearing and the women who had at end of childbearing also has more abortion, reason

is that women either have completed their family size or they believe that they are unable to become pregnant (Mote, 2010). It is estimated that 15.6 million abortions occurred in India in 2015. Abortions accounted for one-third of all pregnancies, and nearly half of pregnancies were unintended (Singh et al., 2018).

### *Need for the Study*

Information on the incidence of induced abortion is crucial for identifying policy and programmatic needs aimed at reducing unintended pregnancy. Unsafe abortion is a cause of maternal morbidity and mortality. Due to the low status of women in India, women have not freedom to plan their pregnancy or take a decision about their pregnancy. Due to lack of awareness, the prevalence of unsafe abortion is very high. Unsafe abortion causes complication for future pregnancy, mortality and morbidity among women, psychological disorder etc. Women are the primary caregiver of family and also had the important role in economic productivity and development, thus it is very important to ensure good health for women. Abortion is not favorable of women's health. Prevalence of abortion is not much declining since the last decade, so there is need of identifying the risk factor associated with post-abortion complication and its treatment seeking behavior.

### *Objectives*

1. To explore the differentials and determinant of the place of abortion in India
2. To find out the possible determinants of post-abortion complication among women in India
3. To examine the treatment seeking behavior of post abortion complication among in India.

### **Materials and Methods**

Present study used the data from the fourth round (2015-16) of the National Family Health Survey (NFHS) which was conducted during 2015-16. NFHS 4 covered a representative sample of 601,509 households and 699,686 women aged 15-49 years. The survey provides crucial information on reproductive and child health, including socioeconomic characteristics of the usual members of household and visitors, fertility, family planning, water and sanitation, health insurance, nutrition, violence against women, certain non-communicable diseases, and many other issues. It provides information on population, health, and nutrition for India and each states and union territory. Abortion-related information like place of abortion, post-abortion complication, their treatment seeking behavior and also the reason for which women do not go for treatment are also provided by NFHS4. This information has been used for this analysis.

Bi-variate analyses have been used to show the percent distribution of place of abortion, post-abortion complication and their treatment seeking behavior, multivariate statistical methods have been used in the analysis. For explanatory variables in a categorized form, a category is designated as "reference" and if  $B_k$  is the logistic regression for category  $k$ , then  $\exp(B_k)$  is the odds ratio, that is, the ratio of odds for the category  $k$  to the odds of reference category. Two sets of multivariate analysis have been carried out. In the first set, place of abortion has been taken into consideration. So the response is categorized as "Public health facility", "Private health facility" and "Home and others". Therefore, the multinomial logistic model has been adopted to examine the influences of various factors on this. In this model, three sets of relative risk ratio are estimated:

1. For the probability of having abortion in Private health facility vis-à-vis Public.
2. For the probability of having abortion in Home and others vis-à-vis Public.
3. For the probability of having abortion in Private vis-à-vis Home and others.

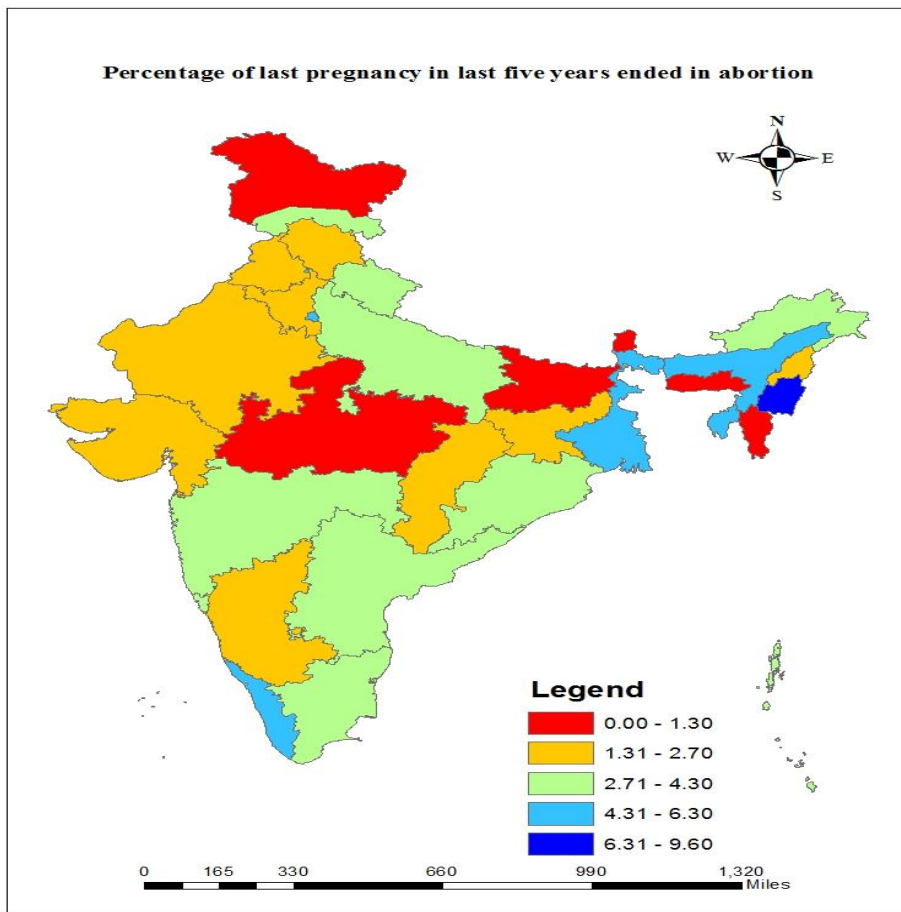
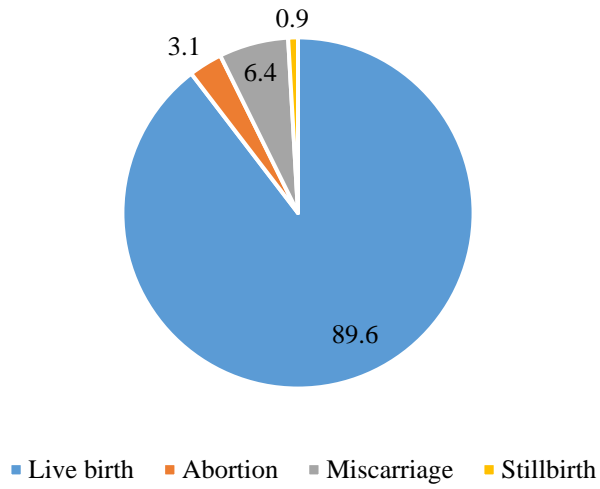
In the second set of analysis, the binary logistic regression is used in order to find out the possible determinants of post-abortion complication and treatment-seeking behavior. The dependent variable, post-abortion complication recoded in two categories i.e., 'having complication', 'not having complication'. Second dependent variable 'sought for treatment' recoded into two categories i.e., 'yes', 'no'. The predictors which have been used in this study are age group of women, children ever born, caste, religion, geographical region, place of residence, women's educational level and wealth index. The age group of women has been divided into three categories, i.e., 15-24, 25-34 and 35+. Children ever born have been categorized into zero, one to two and more than three. Caste has been divided into four categories, namely, Scheduled Castes (SCs), Scheduled Tribes (STs), Other Backward Classes (OBCs) and others while religion has been grouped into Hindu, Muslim, Christian and Others. The country has been categorized into six geographical regions as i.e., north, central, east, northeast, west and south. The place of residence has been categorized as rural and urban. Educational level of women has been divided into four categories, viz., illiterate, primary, secondary and higher while the wealth index has been categorized as poorest, poor, middle, richer, and richest. The analysis has been carried out using STATA 14.0.

## **Results**

### ***Pregnancy Outcomes***

It is estimated that out of the pregnancies in five years preceding the survey, ninety percent pregnancy ended in a live birth and the remaining 10 percent terminated in abortion, miscarriage, or stillbirth. Miscarriage is the most common type of non-live birth, accounting for 6.4 percent of all pregnancies, abortions account for 3.1 percent and still birth account for 0.9 percent (Figure 1). Prevalence of abortion is higher in the north-eastern region as compared to other regions of India. States with higher prevalence of abortion are Manipur (9.6 percentage), Chandigarh (6.3 percent), Delhi (6.1 percent) followed by Kerala (5.5 percent), Assam (5.2 percent), West-Bengal (5.1 percent) and Tripura (4.9 percent) and states with the lower prevalence are Madhya Pradesh (1.3 percent), Sikkim (1.1 percent), Bihar (1.0 percent), Meghalaya (0.9 percent) and Mizoram (0.4 percent). Telangana (4.4 percent), Odisha (4.3 percent), Uttar-Pradesh (4 percent), Andhra-Pradesh (3.4 percent) and Arunachal-Pradesh (3.3 percent) are at moderate level in the prevalence of abortion as compare to others of India (Map 1).

Figure 1: Pregnancy outcome in India, NFHS 4



### *Place of abortion in India*

Percentage distribution of women who have abortion five years preceding the survey by place of Abortion in India is presented in Table 1. Percentage of women goes for abortion at various places varies from one health facility to other health facilities. It is evident from the table that fifty-four percentages of women go for the private sector for abortion, which is substantially higher than the women who go to the public sector. One-quarter of the women avail home and others places for abortion. Among the private health facilities, forty-eight percent of women go to hospital/clinic, 4.7 percent women go to the dispensary/clinic for the abortion and only 0.3 percent of women go to the other health facilities for abortion. Among the public health facilities 10.3 percent of women go to the government/ municipal hospital, 4.9 percent women go to the CHC/Rural Hospital/Block PH, 2.3 percent women go to the PHC/Additional PHC for abortion and only 0.1 percent women go to the Government mobile clinic or Vaidya/Hakim/Homeopath (Ayurveda) for abortion. Among the home and another place, 24.9 percent of women prefer home for abortion, and 0.3 percent of women favor elsewhere for abortion.

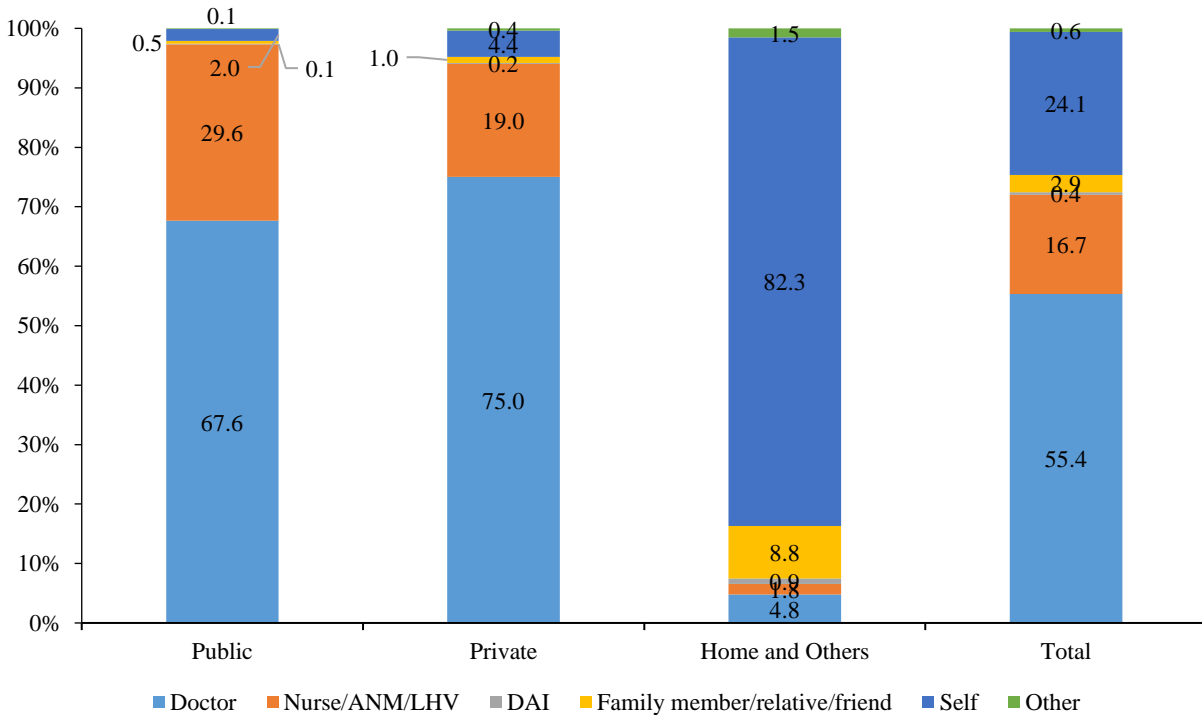
**Table 1: Percentage distribution of women who have abortion five years preceding the survey by Place of abortion, India, NHFS 4**

<b>Place of Abortion</b>	<b>Percent</b>
<b>Public</b>	<b>20.0</b>
Govt./Municipal Hospital	10.2
Vaidya/Hakim/Homeopath (AYUSH)	0.1
Govt. Dispensary/Clinic	1.2
UHC/UHP/UFWC	0.8
CHC/Rural Hospital/Block PHC	4.8
PHC/Additional PHC	2.3
Sub-Centre	0.5
Govt. Mobile Clinic	0.1
Other Public Health	0.0
<b>Private</b>	<b>54.2</b>
NGO or Trust Hospital/Clinic	0.5
Hospital/Clinic	47.8
Vaidya/Hakim/Homeopath (AYUSH)	0.8
Dispensary/Clinic	4.8
Other Private Health	0.3
<b>Home and Others</b>	<b>25.8</b>
At Home	25.5
Elsewhere	0.3
Total	100.0

Source: Computed from NFHS 4 data file.

The results of percentage distribution of women who have an abortion during five years preceding the survey by the person who performed abortion revealed that 67.6 percent and 75.0 percent of abortions conducted by the doctor in public and private health facilities respectively (Figure 2). The proportion of nurse/Auxiliary Nurse-Midwives' (ANM)/Lady Health Visitor (LHV) who conducts abortion is higher in public health facilities (29.6 percent) than the private health facilities (19.0 percent). Those abortions were done at home majority of these were done by self (82.3%). Overall, fifty-five percentages of abortion are done by doctor and one-quarter are done by self.

Figure 2: Person who performed abortion by place of abortion, NFHS 4



Percentage distribution of women who have the abortion during five years preceding the survey by place of abortion and by background characteristics presented in Table 2. It is evident that the majority of women in the age group 15-24 and 25-34 prefer private health facilities (54.9% and 54.3% respectively) for abortion. It is also clear that higher proportion of low parity women go to private health facilities for abortion. As the children ever born increases the proportion of women availing private health facilities for abortion decreases while their proportion to avail at home and others places increases. Most of the women belonging to scheduled caste (SC) go to the public health facilities for abortion and the least percentage of women belongs to other category go in the public health facilities for abortion. Most of the women belong to schedule caste (38.2%) prefer public health facilities and home (29.9%) for the place of abortion and (57.0%) women belong to other castes most favor private health facilities for the place of abortion. Twenty percentage Women belongs to Hindu religion prefer public health facilities for the place of abortion, women belong to Muslim religion (54.0%) prefer private health facilities for the place of abortion. Other religion women most prefer (64.8%) private health facilities for a place of abortion. As education level increases women go to the public to private also increases. Illiterate women most prefer

public health facilities for abortion but higher educated women most prefer (73%) private health facilities for a place of abortion. Minimum (15.0%) of women with higher education level prefer home and others place for a place of abortion. Women belong to rural residence most prefer (22.3%) public sector for the place of abortion but women belong to urban residence prefer (61.9%) private sector for a place of abortion. Women (47.6%) from the northeast region prefer public health facilities for a place of abortion, seventy-five percentages women from west region prefer private health facilities for a place of abortion and 40 percent women from central region prefer home and others place of abortion. Women belong to lower wealth index most prefer public health facilities (23.7%) and home (38%) for a place of abortion and women belong to higher wealth index most prefer private health facilities for the abortion.

**Table2: Percentage distribution women who have abortion during five years preceding the survey by Place of abortion and by background characteristics, India, NFHS 4**

<b>Background Characteristics</b>	<b>Public</b>	<b>Private</b>	<b>Home and others</b>
<b>Women's age</b>			
15-24	19.2	54.9	25.9
25-34	20.1	54.3	25.6
35+	20.6	52.7	26.7
<b>CEB</b>			
Zero	19.6	63.4	17.0
One or two	20.7	56.3	23.0
Three+	18.5	46.3	35.1
<b>Caste</b>			
ST	25.3	49.7	25.0
SC	31.9	38.2	29.9
OBC	17.6	56.5	25.9
Others	17.3	57.0	25.7
<b>Religion</b>			
Hindu	20.4	53.5	26.1
Muslim	17.5	54.0	28.4
Others	21.2	64.8	14.0
<b>Educational level</b>			
Illiterate	21.7	45.7	32.5
Primary	22.2	46.3	31.5
Secondary	20.8	54.1	25.0
Higher	12.2	73.0	14.8
<b>Residence</b>			
Urban	16.6	61.9	21.5
Rural	22.3	48.8	28.9
<b>Region</b>			
North	26.7	52.5	20.8
South	22.6	69.4	8.0
East	15.6	47.5	36.8
West	16.2	74.5	9.3
Central	14.9	45.7	39.5



Northeast	47.6	26.2	26.2
<b>Wealth index</b>			
Poorest	23.7	38.2	38.1
Poorer	22.6	45.3	32.1
Middle	22.9	50.6	26.5
Richer	19.1	59.2	21.8
Richest	13.9	68.4	17.7
<b>India</b>	<b>20.0</b>	<b>54.1</b>	<b>25.9</b>

Source: Computed from NFHS 4 data file.

Multivariate analyses are used to understand the significant determinants of women go to public, private, home and others places for abortion. As our dependent variable is categorical and consists of three outcomes i.e., Public, private and home and others, multinomial logistic regression analysis has been carried out to find out the significant determinants of place of abortion by the background characteristics and the result presented in Table 3. It is evidence from the table that women in age group 15-24 more likely to go in private health facilities for abortion than the 35 and above age women in relation to public health facilities. Women who have one or two child less likely to go to the private health facilities as compare to women having three or more children along with public health facilities. Women who belong to SC and ST categories, less likely (32% and 42%) go in private health facilities for abortion than women belongs to other category than public health facilities. Women from the Hindu religion less likely to go in private health facilities as compare to public health facilities. In relation to education level, women who have no education or primary or secondary levels education, less likely to go private health facilities as compare to women having higher educational attainment related to public health facilities. Women belong to urban residence 12.5% more likely to go in private health facilities for abortion. All the region shows significant result which are more likely go the private health facilities for abortion than public health facilities in relation to women belongs to north-east region of India. In case of wealth index, women belongs to poorest, poorer, middle and richer wealth quintile were less likely to go in private health facilities related to public health facilities.

Women in age group 15-24 and 25-34 age group, more likely (85% and 28%) go to the home and others place as compare to women in age group 35 and more. It is observed that women not having any child or having one or two child were less likely (46% and 34%) go to the home and others places as compare to women having three or more children in relation to public health facilities. Women from the SC category when compare to women from other category in reference categories shows significantly negative odds with go to the home and others places for abortion. It is observed that illiterate women show less likely go to home and others places as compare to women having higher educational attainment in relation to public health facilities. Women from south region less likely (41%) to go home and others place for abortion as compare to women from north-east region. Women from east and central more likely to go in home and others places for abortion. Taking richest wealth index as reference category, women from poorest, poorer and middle wealth quintile less likely go to home and others places for abortion in relation to private health facilities. It can be observed that women from age group 15-24 and 25-34 were less likely (32% and 21%) go private health facilities as compare to women from 35 and more. Child ever born shows significantly positive odds with more chance to go to private health facilities for abortion than home and others places. Women belongs to ST category 32% less likely to go to the private health

facilities as compare to women from other categories in relation to home and others places. It can be observed that, other religion as reference women from Hindu and Muslim religion less likely to go in private health facilities for abortion in relation to home and others places. Taking higher education as reference, all the other level educated women shows less likely to go in private health facilities foe abortion in relation to home and others places. It can be observed than women from north, south, east, and west shows the significant result for the logistic regression. Women from north, south, east and west region more likely to go in private health facilities for abortion in relation to home and others places. Taking richest as reference category, all the other group are less likely (poorest 44%, poorer 33%, middle 29% and richer 21%) to go in private health facilities in relation to home and others health facilities.

**Table 3: Relative risk ratio showing the effect of background variable on place of abortion in India: Results from multinomial logistic regression**

Background variables	Private Vs Public			Home and others Vs Public		
	Relative risk ratio	95% CI		Relative risk ratio	95% CI	
		Lower Bound	Upper Bound		Lower Bound	Upper Bound
<b>Women's age</b>						
15-24	1.270**	1.036	1.556	1.853***	1.466	2.342
25-34	1.031	0.871	1.222	1.281**	1.058	1.552
35+®						
<b>CEB</b>						
Zero	0.815	0.638	1.040	0.536***	0.398	0.722
One or two	0.783***	0.665	0.922	0.656***	0.548	0.785
3+®						
<b>Caste</b>						
SC	0.680***	0.572	0.809	0.666***	0.546	0.813
ST	0.579***	0.447	0.749	0.858	0.648	1.136
OBC	0.997	0.857	1.160	0.987	0.831	1.171
Other®						
<b>Religion</b>						
Hindu	0.767*	0.588	1.001	1.110	0.777	1.585
Muslim	0.836	0.613	1.139	1.202	0.808	1.787
Other®						
<b>Educational level</b>						
Illiterate	0.532***	0.410	0.691	0.729**	0.534	0.995
Primary	0.507***	0.390	0.658	0.798	0.585	1.089
Secondary	0.545***	0.444	0.668	0.873	0.677	1.127
Higher®						
<b>Residence</b>						
Urban	1.125*	0.978	1.294	1.123	0.953	1.324
Rural®						
<b>Region</b>						
North	2.457***	1.848	3.267	1.288	0.947	1.752
South	4.076***	3.136	5.297	0.593***	0.436	0.806
East	5.820***	4.468	7.580	4.423***	3.390	5.770
West	5.636***	4.229	7.512	0.900	0.638	1.270
Central	4.742***	3.637	6.184	4.502***	3.441	5.889

Northeast®						
<b>Wealth Index</b>						
Poorest	0.393***	0.300	0.516	0.703**	0.519	0.952
Poorer	0.517***	0.410	0.653	0.780*	0.595	1.022
Middle	0.563***	0.458	0.692	0.789*	0.617	1.009
Richer	0.700***	0.580	0.844	0.880	0.701	1.106
Richest®						

Note: CI: Confidence Interval; \*\*\*p<0.01, \*\*p<0.05, \*p<0.001 ®: Reference category

Source: Computed from NFHS 4 data file.

### ***Post Abortion Complications and treatment seeking behavior***

Women in early age (15-24) and 35 and above age have more complication due to abortion. Eighteen percent of women in the age group 15-24 and twenty percent of the women in age 35 had a complication after abortion (Table 4). Out of total women who have complication after abortion, eighty-five percentage women sought treatment for complication. One-quarter of women who had not any child have more complication after abortion and out of those women eighty-five percentages sought treatment for complication. Twenty-one percent women are those who have more than three children having the complication after abortion and out of those 84.5 percent women sought for treatment. Women who belong to SC category (21%) have more complication after abortion, but fewer women (73.6%) belong to these categories sought for treatment. Maximum percent of women belongs to Muslim religion have more complication after abortion as compare to women belong to other religion but only eighty-seven percent women from the Muslim religion sought for treatment. Complication after abortion has maximum in Illiterate women, as a year of education increases, a percentage of women having complication due to abortion decreases from (20.3%) to (16.3%) and with increases education more percentage of women sought treatment for complication. Maximum percentage of women (18.8%) belongs to rural residents have complications from the abortion as compared to women belongs to the urban residence, but more percentage of women belongs to urban residence sought for treatment. Higher percentage of women from the north (22.5%) and central (21.1%) region have complication after abortion as compare to women from other regions of India. Fewer women from the south region (15 %) have a complication after abortion, but most of women (88%) from south region sought for treatment as compared to north and central region. Wealth index and complication from abortion are inversely related, as women (20.6%) from the lowest wealth index had complication after abortion as compare to women (16.5%) belongs to richest wealth index. Percentage of women with complication due to abortion decreases as wealth index increases but more women (89%) sought for treatment belongs to richest wealth index. Women go to the private health facilities for abortion having the more complication as compare to women go to the public health facilities for abortion. Out of those women who go for abortion in private health facilities and having the complication, ninety percent women sought for treatment.

**Table 4: Percentage Distribution of women who have complication from abortion and who Sought treatment from complication by background characteristics, India, NFHS 4**

<b>Background Characteristics</b>	<b>Complication</b>	<b>Treatment</b>
<b>Women's age</b>		
15-24	18.6	84.9
25-34	17.2	84.2
35+	19.8	85.4
<b>CEB</b>		
Zero	24.6	85.4
One or two	15.7	84.5
Three+	20.5	84.5
<b>Caste</b>		
ST	17.8	84.2
SC	21.1	73.6
OBC	18.0	86.5
Others	17.5	85.1
<b>Religion</b>		
Hindu	17.4	83.6
Muslim	20.6	87.1
Others	19.3	91.4
<b>Educational level</b>		
Illiterate	20.3	84.2
Primary	20.2	83.8
Secondary	17.0	84.0
Higher	16.3	88.7
<b>Residence</b>		
Urban	16.8	85.6
Rural	18.8	84.1
<b>Region</b>		
North	22.5	86.9
South	15.0	88.3
East	16.9	75.6
West	16.3	89.9
Central	21.1	86.4
Northeast	12.2	79.3
<b>Wealth index</b>		
Poorest	20.6	77.9
Poorer	19.2	89.4
Middle	18.5	81.5
Richer	16.5	83.4
Richest	16.5	89.5
<b>Place of abortion</b>		
Public	15.5	87.8
Private	19.3	89.4
Home and Others	17.0	71.2
<b>India</b>	<b>18.0</b>	<b>84.7</b>

Source: Computed from NFHS 4 data file.

To understand the possible determinants of post-abortion complication and treatment for complication, binary logistic regression analysis has been carried out and the results presented in (Table 5). It is evident from the analysis that: Taking a view at the children ever born, the odds of women having one or two children and more than three children ever born less likely (41.6% and 32.4% respectively) to have the complication after abortion. Women belong to ST category have more likely (34%) to having complication after abortion as compare to women belongs to SC category. Women who belong to Muslim religion more likely to (0.225%) having a post-abortion complication as compare to women belong to Hindu religion. Women belong to the east, northeast, west and south region less likely to have the post-abortion complication and also women belongs to the east region have less likely to go for treatment. Women belong to richer and richest wealth index are less likely to (20.8% and 24.5% respectively) have the complication after abortion. Women who go for the private sector for abortion are more likely (35.6%) to have the complication after abortion as compare to those women who go to the public sector for abortion.

**Table 5: Odds ratio showing the effect of background variable on post abortion complication and treatment in India: Results from Logistic Regression Analysis**

<b>Background variable</b>	<b>Complication</b>	<b>Treatment</b>
<b>Women's age</b>		
15-24 ®		
25-34	0.947	0.894
35+	1.026	1.032
<b>CEB</b>		
Zero®		
One or two	0.584***	1.363
3+	0.676***	1.540
<b>Caste</b>		
SC®		
ST	1.340**	0.633
OBC	1.018	1.224
Other	1.017	1.180
<b>Religion</b>		
Hindu®		
Muslim	1.225**	1.444
Other	1.208	2.509**
<b>Educational level</b>		
Illiterate®		
Primary	1.128	1.006
Secondary	1.048	1.132
Higher	1.001	1.622
<b>Residence</b>		
Urban®		
Rural	1.056	1.051
<b>Region</b>		
North®		
South	0.557***	1.016
East	0.620***	0.555**
West	0.617***	1.423
Central	0.849	1.286

Northeast	0.432***	0.675
<b>Wealth Index</b>		
Poorest®		
Poorer	0.957	2.122***
Middle	0.934	0.870
Richer	0.792**	0.896
Richest	0.755**	1.019
<b>Place of abortion</b>		
Public®		
Private	1.356***	1.095
Home and Others	1.036	0.301***
<b>Constant</b>	0.413***	4.199***

Note: \*\*\*p<0.01, \*\*p<0.05, ®: reference category

Percentage of women who had a complication due to abortion, 23.9% women go at the public health care facility, and 73.9% women go at the private place for the treatment (Table 6). Only two percent women go to the home and others place for treatment after complication. In the public health facilities, fourteen percent women go to the government/municipal hospital for treatment, six percent women go to the CHC/Rural hosp./block PHC for treatment after complication and only 0.2 percent women go to the Govt. dispensary/Clinic or sub centres for the treatment. In the private sector, 66.7% go at any hospital or clinic for treatment. Four percent women go to the Dispensary/Clinic for the treatment and only 0.4 percent women go to the NGO or trust hospital/clinic for the treatment.

**Table 6: Percentage distribution of women who have complication from abortion by Place of treatment, India, NHFS 4**

Place of Treatment	Percentage
<b>Public</b>	<b>23.9</b>
Govt./Municipal hospital	14.2
Vaidya/Hakim/Homeopath (Ayush)	0.4
Govt. dispensary/Clinic	0.2
UHC/UHP/UFWC	0.6
CHC/Rural hosp./block PHC	6.2
PHC/additional PHC	2.1
Sub-centre	0.2
<b>Private</b>	<b>73.9</b>
NGO or trust hospital/clinic	0.4
Hospital/Clinic	66.7
Vaidya/Hakim/Homeopath (Ayush)	2.0
Dispensary/Clinic	4.3
Other Private Health	0.5
<b>Home and Other</b>	<b>2.1</b>
At Home	1.7
Elsewhere	0.4

Total	100.0
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Source: Computed from NFHS 4 data file.

Fifteen percent women who had complication after abortion but not go for the treatment (Table 7). There are many reasons due to which women can't go for treatment. One-quarter of women do not go for treatment because they can't afford treatment. Four percent women not go for treatment because they can't afford the transport, 3 percent are those women who do not go for treatment because they are fear from the stigma by community and 1.6 percent women fear with the stigma by the provider. Almost (16%) women not go for treatment because her husband does not give permission and (32.6%) women had a minor problem due to abortion and problem solve itself, so they do not go for treatment.

**Table 7: Percentage of women who have complication from abortion by reasons for not seeking for treatment, India, NFHS 4**

Reason for not seek treatment	Percentage
Not afford treatment	23.9
Not afford transport	4.0
Fear of stigma by provider	1.6
Fear of stigma by community	3.0
Not required for treatment	13.1
Problem resolved itself	32.6
Did not get any family responsibility	6.7
Husband did not give permission	16.2
Other	7.5

Source: Computed from NFHS 4 data file.

## Discussion and Conclusion

The main purpose of this study is to find out the factors which are significantly related to the place of abortion, post-abortion complication, and treatment seeking behavior among women in India. Out of the last pregnancy among women aged 15-49 years during the five years preceding the survey, 3 percent ended in abortion. Most of the abortion (more than half) was performed in the private sector. The study is consistent with other studies (IIPS, 2010; Malhotra et al., 2003; Duggal, 2004). With increasing age, more women go to public or private sector for abortion (Krishnamoorthy et al., 2004). The abortion in private health facilities increases with the increase in wealth index. One-quarter of women had the abortion in the home during the five years preceding the survey. Nearly eighteen percentages of women had the post-abortion complication and out of these 84 percentages sought for treatment. Women who go for treatment most of the women prefer the private sector for treatment. Most of the women who had not gone for treatment give the reason that they can't afford treatment.

Abortion as a procedure for terminating an unintended pregnancy should be carried out either by persons having the necessary skills or in an environment that conforms to minimal medical standards. But about one-fourth of abortions happen in the home or other places, other than health facilities. Therefore, these sections of women should be the priority from the policy point of view.

An unsafe abortion can lead to serious complications for the women. Therefore the government should take immediate action to tackle the issue. Since more than half of the abortion performed in private health facilities, the reason behind is that the lack of access to the facility or the unavailability of the doctor or trained staff in public health facilities. So the government should provide the trained and qualified person in public health facilities and easily accessible health services in the public health sector. As there is the strong social stigma attached to abortion in India the reporting of abortion is a concern. To minimize this, awareness about abortion to the people should be provided and women need to be educated on this line. One of the commonly mentioned reasons for not going for treatment for post-abortion complication is that they can't afford the treatment. So the government should make programs under National Health Mission and Reproductive and Child Health to provide free maternal health services.

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### **Conflict of Interest**

The authors declare that they have no Conflict of interests.

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