

Research Article

A Cross-sectional Study on Abortions and Associated Risk Factors in Slum Locality of Bhopal City of Madhya Pradesh

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DOI: <https://doi.org/10.24321/2454.325X.201902>

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How to cite this article:

Shinde M, Melwani V, Sethia S et al. A Cross-sectional Study on Abortions and Associated Risk Factors in Slum Locality of Bhopal City of Madhya Pradesh. *Int J Preven Curat Comm Med* 2019; 5(1): 3-7.

Date of Submission: 2018-12-12

Date of Acceptance: 2018-12-28

A B S T R A C T

Introduction: Abortion can be defined as the termination of a pregnancy after, accompanied by, resulting in, or closely followed by the death of the embryo or fetus. The study was conducted with the objectives to find out the probable cause/ predisposing condition leading to abortions and to study the occurrence of abortion in two localities.

Materials and Methods: The study was a community based cross sectional study, conducted in two nearby localities of Gandhi Medical College, Bhopal using convenient sampling for a period of 1 month i.e. 1 June 2018-30 June 2018. All the families giving history of abortion were included in the study. 36 and 22 abortion cases were identified from Fatehgarh and Shaheed Nagar area respectively. Information regarding their socio-demographic parameters, causes and conditions leading to abortion and problems following the abortion were enquired. Data was compiled using Ms Excel and analysed using Epi Info 7. Appropriate statistical tests were applied and p value <0.05 was considered significant.

Results: The overall occurrence of abortion in present study was found to be 6.36% and of them, the proportion in Fatehgarh and Shaheed Nagar area was found to be 36 (7.8%) and 22 (4.8%) respectively. During first trimester, major probable contributing factor for spontaneous abortion was hypertension in 9 (33.3%) participants followed by fever or infections (14.8%) and thyroid disorders 4 (14.8%). During second trimester, history of hypertension was the most common contributing factor.

Conclusion: The occurrence of abortion was found to be higher in the selected localities and maximum number of abortions occurred in first trimester.

Keywords: Abortion, Bhopal, Risk factor, Slum locality

Introduction

Since the passage of the Medical Termination of Pregnancy Act in 1971, abortion has been legally available in India under a broad range of criteria, including to save a woman's life, to protect her physical and mental health, in cases of economic and social necessity, and if contraception has failed between married couples.¹

Miscarriage is defined as spontaneous abortion without medical or mechanical means to terminate a pregnancy before the fetus is sufficiently developed to survive. In other words, miscarriage is early pregnancy loss before 20th week of gestation or 139 days, counting from the first day of the last normal menses.¹ Recurrent miscarriage is defined as two or more spontaneous losses.²

The most common cause of first trimester spontaneous loss is sporadic chromosomal error. Autosomal trisomy is the largest group representing 20% of the total population of first trimester spontaneous miscarriages successfully cultured and examined cytogenetically. Advancing maternal age (>40 years) has been linked to the increased incidence trisomy. Other causes leading to spontaneous first trimester abortion are antiphospholipid antibodies, uterine abnormalities, luteal phase defects, diabetes mellitus and thyroid problems.³⁻⁶ Second trimester pregnancy loss is not much common, but it should be regarded as an important event in a woman's obstetric history. Fetal abnormalities, including chromosomal problems, and maternal anatomic factors, immunologic factors, infection, and thrombophilia are the possible factors leading to second trimester abortions.⁷

Abortion not only cause physical harm to the female undergoing abortion, but also causes mental and psychosocial trauma, which gets intensified if the abortion is recurrent and spontaneous. Abortion related complications continue to account for 8-9% of maternal mortality despite a liberal abortion law.⁸ According to a lancet study, 15.6 million abortions (14.1 million-17.3 million) occurred in India in 2015. The abortion rate was 47 abortions (42.2-52.1) per 1000 women aged 15-49 years.⁹

Objectives

- To study the socio-demographic profile of study participants.
- To find out the probable cause/predisposing condition leading to abortion.
- To study the occurrence of abortion in two localities.

Materials and Methods

After obtaining ethical clearance from Institute's ethical Committee, the current study was a community based cross sectional study, conducted in two nearby localities of Gandhi Medical College, Bhopal using convenient sampling.

The study was conducted for a period of 1 month i.e. 1 June 2018- 30 June 2018. A house to house survey was conducted in 457 and 454 houses in Fatehgarh and Shaheed Nagar area respectively over a period of 1 month. All the families giving history of abortion were included in the study. 36 and 22 abortion cases were identified from Fatehgarh and Shaheed Nagar area respectively. Information regarding their socio-demographic parameters, causes and conditions leading to abortion and problems following the abortion were enquired. Also, the history regarding risk factors such as hypertension, diabetes, thyroid disorders, trauma, medication intake, exposure to radiation during the time of pregnancy were also enquired and entered in pre designed semi structured questionnaire.

Data was compiled using MS excel and analyzed using Epi-info 7. Appropriate statistical tests were applied and p-value <0.05 was considered significant.

Results

In present study, out of 457 houses surveyed, 36 cases of abortion were found in Fatehgarh area and in Shaheed Nagar area, out of 454 houses, 22 abortion cases were reported. The overall proportion of abortion in present study was found to be 6.36% and of them, the proportion in Fatehgarh and Shaheed Nagar area was found to be 7.8% and 4.8% respectively. Mean age of study participants of Fatehgarh area was 33.3±9.8 years and that of Shaheed Nagar area was found to be 31.4±9.6 years.

Majority of the participants in the study belonged to >30 years of age group. It was observed that 14 (53.9%) participants with history of induced abortion were educated up to high school whereas 11 (34.4%) participants with history of spontaneous abortion were educated till high school. The study also reveals that 12 (37.5%) participants with the history of spontaneous abortion belonged to upper middle class followed by middle class 9 (28.1%). Similarly, 12 (46.2%) and 7 (26.9%) participants with history of induced abortion belonged to middle and upper middle socio-economic classes.

It was observed that 12 (37.5%) and 12 (46.2%) participants with history of spontaneous abortion and induced abortion respectively were multigravida. History of single abortion was found in 24 (75%) and 18 (69.2%) participants with spontaneous and induced abortion. Majority of participants 17 (53.1%) in case of spontaneous abortion and 13 (50%) in induced abortion were belonging to 18-25 years. It was also observed that 27 (84.4%) spontaneous abortions occurred in first trimester whereas 24 (92.3%) participants had induced abortion.

Majority of the abortions were occurred at Government hospital (52.8%), followed by private hospital (38.9%) and home (8.3%).

Table 1. Distribution of study participants according to socio-demographic variables

S. No.	Variables		Spontaneous		Induced		P-value
			Frequency (n=32)	%	Frequency (n=26)	%	
1.	Age group	18-25 years	7	21.9	5	19.2	0.93 (NS)
		26-30 years	8	25	7	26.9	
		>30 years	17	53.1	14	53.9	
2.	Education status	Illiterate	2	6.25	0	0	0.98 (NS)
		Primary	2	6.25	0	0	
		Middle	9	28.1	5	19.2	
		High	11	34.4	14	53.9	
		Intermediate	4	12.5	3	11.5	
		Graduate	4	12.5	4	15.4	
3.	Socio-economic class	Lower	2	6.25	0	0	0.95 (NS)
		Lower middle	7	21.9	3	11.5	
		Middle	9	28.1	12	46.2	
		Upper middle	12	37.5	7	26.9	
		Upper	2	6.25	4	15.4	

Table 2. Distribution of study participants according to obstetric history

S. No.	Obstetric history		Spontaneous (n=32)		Induced (n=26)		P-value
			Frequency	%	Frequency	%	
1.	Gravida	1	6	18.8	2	7.7	0.98 (NS)
		2	6	18.8	5	19.2	
		3	8	25	7	26.9	
		≥4	12	37.5	12	46.2	
2.	Para	0	5	15.6	3	11.5	0.92 (NS)
		1	9	28.1	7	26.9	
		2	11	34.4	10	38.5	
		3	6	18.8	4	15.4	
		≥4	1	3.1	2	7.7	
3.	No. of abortions	1	24	75	18	69.2	0.71 (NS)
		2	5	15.6	4	15.4	
		3	1	3.1	1	3.8	
		4	1	3.1	1	3.8	
		>4	1	3.1	2	7.7	
4.	Age at the time of abortion	<18 years	1	3.1	2	7.7	0.97 (NS)
		18-25 years	17	53.1	13	50	
		26-30 years	12	37.5	8	30.8	
		>30 years	2	6.25	3	11.5	
5.	Time of abortion	1 st trimester	27	84.4	24	92.3	0.58 (NS)
		2 nd trimester	5	15.6	2	7.7	

Table 3. Risk or etiological factors contributing to abortion in first trimester

S. No.	Risk factors/Reasons	Spontaneous (n=27)		Induced (n=24)	
		No.	%	No.	%
1.	H/o thyroid disorder	4	14.8	2	8.3
2.	H/o trauma	3	11.1	3	12.5
3.	H/o Radiation exposure	0	0	3	12.5
4.	H/o menstrual irregularities	3	11.1	4	16.7
5.	H/o fever prior to abortion	4	14.8	2	8.3
6.	H/o HTN	9	33.3	0	0
7.	H/o Gestational diabetes	2	7.4	0	0
8.	H/o chromosomal abnormality	0	0	0	0
9.	Reason Not known	2	7.4	0	0
10.	Don't want child	0	0	10	41.7

Table 4. Risk or etiological factors contributing to abortion in second trimester

S. No.	Risk factors/ Reasons	Spontaneous (n=5)		Induced (n=2)	
		No.	%	No.	%
1.	H/o thyroid disorder	1	20	0	0
2.	H/o trauma	0	0	1	50
3.	H/o Radiation exposure	1	20	1	50
4.	H/o HTN	2	40	0	0
5.	H/o Gestational diabetes	1	20	0	0

The observations revealed that during first trimester, major probable contributing factor for spontaneous abortion was hypertension in 9 (33.3%) participants followed by fever or infections 4 (14.8%), thyroid disorders 4 (14.8%) and trauma 3 (11.1%). In case of induced abortion, 10 (41.7%) participants did not want child and hence opted for induced abortion.

In present study, during second trimester, history of hypertension was the most common contributing factor for spontaneous abortion. None of the participant reported any complication following abortion except one (1.7%) complained of irregular menses following abortion.

Discussion

It is estimated that 10-15% of clinically recognized pregnancies worldwide end in a miscarriage. However, the actual rates of miscarriage might be higher as many women have very early miscarriages without ever realizing that they are pregnant.¹⁰ The overall occurrence of abortion in present study was found to be 6.36% and was dispersed in Fatehgarh and Shaheed Nagar area as 7.8% and 4.8% respectively whereas Baharana B et al. found that the occurrence of spontaneous and induced abortion in India is 10% and 3% respectively.¹¹

In the present study, 53.1% and 53.9% participants with the history of spontaneous and induced abortion respectively belonged to more than 30 years of age. Age at time of abortion was observed to be 18-25 years for 53.1% participants in case of spontaneous abortion and 50% participants in case of induced abortions. In a study by Dhingra D et al., 48.9% participants with history of spontaneous abortion belonged to 20-24 years of age whereas 62.5% participants with history of induced abortion were in 25-29 years of age.¹² This difference might be due to the instigation of the present study which was based on field/community-based observations while the reference study by Dhingra D et al. was a hospital-based study.

Present study revealed that 46.2% participants with history of induced abortion and 37.5% with history of spontaneous abortion were multigravida. The data related to induced abortion in multigravida is almost similar to the study carried out by Dhingra D et al. in which the researcher observed that 56.25% participants with induced abortion were multiparous (≥ 3 para) whereas 73.3% participants with spontaneous abortion were nulliparous.¹²

During first trimester, 84.4% and 92.3% participants had history of spontaneous and induced abortions respectively in the present study. During first trimester the fetus is

most susceptible to damage from substances like alcohol, drugs and certain medicines and illnesses like rubella. Major probable contributing factor in our study for spontaneous abortion in first trimester was hypertension in 9 (33.3%) participants followed by fever or infections 4 (14.8%), thyroid disorders 4 (14.8%) and trauma 3(11.1%). The commonest risk factor for miscarriage in a study by Adeniran AS et al. in Nigeria was febrile illness in 16.8% followed by drainage of liquor in 15.9%, anemia in 1.3%, hypertension 1.3%, trauma to the abdomen in 1% and diabetes mellitus in 0.7% participants. Further, in reference study 59.9% miscarriages were occurred in first trimester while 40.1% occurred in the second trimester.¹³ Miscarriage can be caused by environmental, genetic, anatomical, endocrine, thrombophilia, and infectious diseases.¹⁴ Patki A et al. showed that 14.29 % of Indian females with uterine anomalies had recurrent miscarriage (non-significant) and Torch infection was found to be a significant risk factor causing recurrent miscarriage.¹

Conclusion

The occurrence of abortion was found to be higher in the selected localities and maximum number of abortions occurred in first trimester. The most common probable contributing factors leading to first trimester spontaneous abortion were hypertension and infections. During second trimester, most common contributing factor for spontaneous abortion was hypertension.

Conflict of Interest: None

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