

To find out the relationship between increasing abortion with increase in age of a female in the rural belts of Faridabad within the age group of 20 to 40 years

IMPACT OF MATERNAL AGE ON ABORTION RATES IN RURAL AREAS

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Abstract: This study investigates the relationship between maternal age and the incidence of abortion among women aged 20 to 40 years in the rural belts of Faridabad. Data was collected from 100 patients registered in the Obstetrics and Gynecology ward at AL Falah School of Medical Science and Research Center. The research employs an observational study design, categorizing participants into four age groups (20–25, 26–30, 31–35, and 36–40 years) and analyzing the percentage of abortions within each group. The findings reveal a significant increase in abortion rates with advancing maternal age, with the highest incidence observed in the 36–40 age group (31%) and the lowest in the 20–25 age group (19%). Additional analysis based on education level, parity, and socioeconomic status highlights that lower education levels, increased parity, and lower socioeconomic status are associated with higher abortion rates. Common causes of abortion in older women include genetic abnormalities, hormonal imbalances, uterine and cervical issues, chronic medical conditions, and lifestyle factors. The study underscores the need for targeted healthcare interventions, including preconception counseling, regular prenatal care, and lifestyle modifications to mitigate risks. By identifying vulnerable age groups, the findings can help improve maternal healthcare strategies, enhance awareness, and reduce abortion rates through preventive measures.

INTRODUCTION

Abortion is the expulsion or extraction from its mother of an embryo or foetus weighing 500 gms or less when it is not capable of independent survival. The expelled foetus is called abortus. An increase risk of foetal death and abortion with increase in maternal age observed by the several authors. We are taking account of women's reproductive history as association between the age and abortion which reflects both biological mechanism force of selection and the significance of the association is expected to change over the time. The significance of age group is important because at present many women delay child bearing for social reason. We will derive our data from the population coming in AL FALAH School Of Medical Science And Research Center Dhauj Faridabad Haryana

Objective - To estimate the relationship between maternal age and abortion taking into account of women's reproductive history .

RESEARCH METHODOLOGY:

Our study is based on data from population based registrees with complete information of all pregnancies outcomes leading to abortion. The patient are categorised according to their age groups.

Age interval (IN YEARS)

20 to 25

26 to 30

31 to 35

36 to 40

Find out the percentage of abortions in particular age group.

For the interval 20 to 25 years % of abortion = No. of abortion in age group 20 to 25 years x 100 ÷ total abortions

For the interval 26 to 30 years % of abortion = No. of abortion in age group 26 to 30 years x 100 ÷ total abortions

For the interval 30 to 35 years % of abortion = No. of abortion in age group 30 to 35 years x 100 ÷ total abortions

For the interval 36 to 40 years % of abortion = No. of abortion in age group 36 to 40 years x 100 ÷ total abortions

Technique Used - Detailed history of abortion .

Type of study - Observational study .

Study population - Women of age group 20 to 40 years with the history of abortion registered to AL FALAH Obs and gynae wards.

Duration of the study -This study data has been collected within 4 months starting from 1 September 2024 to 31 December 2024.

Sample size - 100 patients data is collected.

Selection Criteria - Women with the history of abortion of age group 20 to 40 years.

Data collection - Admitted patients in the Obs and gynae ward.

Data collection Center - Obs and gynae ward of AL Falah School Of Medical Science And Research Center Dhauj Faridabad Haryana.

Confidentiality - Particularly allotted serial numbers will be used instead of patient's name and CR Number.

Statistical tools - Histogram and Pie charting is used to show the actual concluded data of the study.

Implications - This study will give the information about the age group which is most susceptible for abortion and also give the brief idea beforehand to the patient to take proper precautions during the pregnancy to get away from the complications of pregnancy with increasing age. It will also be helpful for the doctor to give care to the patient and also for providing extra care to that particular age group of females.

Data:

S No.	Allotted S No.	Age	Diagnosis	Procedure
1	Atemotic	nol Rese	G3P2L2 with incomplete abortion	D&E
2	A2	26	G2P1L1 with missed abortion	D&E
3	A3	39	G7P6L6 with incomplete abortion	D&E
4	A4 Researe	38 Through	G4P3L3 with incomplete abortion	D&E
5	A5	26	G3P2L2 with missed abortion	D&E
6	A6	24	G2P1L1with incomplete abortion	D&E

	T . —	1	T =	
7	A7	30	G6P4L4A1 with	D&E
			missed	
			abortion	
8	A8	28	G3P2L2 with	D&E
9	Α9	25	incomplete abortion G2P1L1with missed	D&E
	A,		abortion	Jac
10	A10	29	G3P2L2 with	D&E
			missed	
			abortion	
11	A11	26	G4P3L3	D&E
			With missed abortion	
12	A12	29	G3P2L2 with	D&E
			incomplete abortion	
13	A13	35	G4P2L2A1	D&E
			With missed abortion	
14	A14	29	G3P2L2 with	D&E
			missed	
			abortion	
15	A15	26	G2P1L1with	D&E
			incomplete abortion	
		27		26.5
16	A16	37	G5P4L4	D&E
			With missed abortion	
17	A17	34	G3P2L2 with	D&E
	Research	Through	incomplete abortion	D n
18	A18	39	G6P4L4A1	D&E
	Alo			Dur
			With missed abortion	
19	A19	35	G6P4L4A1 with	D&E
			incomplete abortion	
	•	· 		

20	420	22	Capal ath	DCE
20	A20	23	G3P2L2 with	D&E
			missed	
			abortion	
21	A21	32	G4P3L3with	D&E
			incomplete abortion	
22	A22	37	G4P2L2A1 with missed abortion	D&E
23	A23	34	G5P3L3A1	D&E
23	AZS	34	With RPOC'S	Dat
24	A24	22	G2P1L1with missed	D&E
			abortion	
25	A25	27	G5P3L3A1	D&E
			With missed abortion	
26	A26	30	G4P3L3	D&E
			with incomplete	
			abortion	
27	A27	24	G2P1L1 with	D&E
			missed	
			abortion	
	Mercalia	cal Rese	arah lau	raal
28	A28	33	G6P3L3A2	D&E
			With missed abortion	
29	A29	36	G4P3L3	D&E
			with incomplete	
			abortion	
30	A30	28	G3P2L2with	D&E
			missed	
			abortion	
31	A31	33	G4P3L3with	D&E
			incomplete abortion	

32	A32	39	G4P2L2A1	D&E
			with incomplete	
			abortion	
33	A33	32	G6P3L3A2 with RPOC'S with	D&E
			incomplete abortion	
34	A34	25	G2P1L1 with	D&E
			incomplete abortion	
35	A35	29	G3P2L2 with missed abortion	D&E
36	A36	36	G7P4L4A2	D&E
			With RPOC'S with	
			incomplete	
			abortion	
37	A37	38	G4P3L3with	D&E
			incomplete abortion	
38	A38	22	G2P0A1with	D&E
			missed	
			abortion	
39	A39	36	G4P2L2A1	D&E
	Maraalia	aal Bass	with incomplete abortion	rool .
40	A40	26	G3P2L2 with	D&E
40	A40	20		Dat
			missed	
41	A41	25	abortion G4P2L2A1	D&E
	n''		with incomplete abortion	Jul
42	A42	37	G4P2L2A1	S&E
			With RPOC'S	
43	A43	33	G6P3L3A2	D&E
			with RPOC'S	
44	A44	22	G2P1L1 with incomplete	D&E
			abortion	
45	A45	30	G3P2L2with missed abortion	D&E
			abol cion	

46	A46	36	G7P4L4A2 with missed abortion	D&E
47	A47	39	G6P4L41 with incomplete abortion	D&E
48	A48	31	G4P3L3 With missed abortion	D&E
49	A49	29	G5P4L4 with incomplete abortion	D&E
50	A50	36	G5P3L3A1 with missed abortion	D&E
51	A51	25	G3P2L2with missed abortion	D&E
52	A52	39	G7P4L4A2 with incomplete abortion	D&E
53	A53	32	G4P2L2A1 with incomplete abortion	S&E
54	A54	25 Rese	G5P3L3A1 with incomplete abortion	D&E
55	A55	22	G3P2L2with missed abortion	D&E
56	A56	33	G3P2L2with incomplete abortion	D&E
57	A57	34	G8P6L6A1 With missed abortion	D&E
58	A58	38	G6P3L3A2 with incomplete abortion	D&C

59	A59	34	G4P3L3	D&E
			With missed abortion	
60	A60	29	G4P2L2A1	D&E
			with missed abortion	
61	A61	36	G5P3L3A1	D&E
			with missed abortion	
62	A62	32	G6P3L3A2	D&E
			with incomplete	
			abortion	
63	A63	24	G4P3L3	D&E
			with missed abortion	
64	A64	39	G5P3L3A1	D&E
			With missed abortion	
65	A65	25	G3P2L2with	D&E
			missed	
			abortion	
66	A66	33	G5P4L4	D&C
			With missed abortion	
	Maraalia	oal Dass	back low	raal
67	A67	31	G5P3L3A1	D&C
			with incomplete	
			abortion	
68	A68	40	G6P3L3A2	D&E
			With missed abortion	
69	A69	23	G3P2L2with	D&E
	Research	h Through	incomplete abortion	DN
70	A70	27	G4P2A1with missed abortion	D&E
71	A71	39	G4P3L3	D&E
			With missed abortion	

72	A72	28	G2P1L1with incomplete abortion	D&C
73	A73	32	G5P3L3A1	D&C
			With missed abortion	
74	A74	24	G4P2L2A1	D&E
			With missed abortion	
75	A75	21	G3P1L1A1	D&E
			With missed	
			abortion	
76	A76	38	G5P3L3A1	D&E
			With missed abortion	
77	A77	33	G5P3L3A1	D&C
			with incomplete	
			abortion	
78	A78	26	G4P3L3	D&E
			With missed abortion	
79	A <mark>79</mark>	36	G5P3L3A1	D&E
			with incomplete	
	hospolio	and Dave	abortion	
80	A80	31	G4P3L3	D&E
			With missed abortion	
81	A81	29	G3P2L2 with missed abortion	D&C
82	A82	35	G6P3L3A1D1 with incomplete abortion	D&E
83	A83	29 hasuah	G4P3L3	D&E
			With missed abortion	
84	A84	39	G6P3L3A2 With	D&E
			1	I
			incomplete	
			abortion	

85	A85	32	G4P2L2A1	D&E
	7.00			
			With missed abortion	
86	A86	31	G4P2L2A1	D&E
			with incomplete	
87	A87	34	abortion G6P3L3A1D1 with	D&E
07	A07	34	missed abortion	ναε
0.0	A88	39	C7D4L4A2	D&E
88	A88	39	G7P4L4A2	DEE
			With missed abortion	
89	A89	33	G6P4L4A1	D&E
			with incomplete	
			with incomplete	
			abortion	
90	A90	40	G7P4L4A2	D&E
			With missed abortion	
91	A91	29	G4P3L3	D&E
91	A91	29	G4P3L3	Dae
			With missed abortion	
92	A92	36	G7P4L4A2	D&C
			with to some late	
			with incomplete	
			abortion	
93	A93	39	G6P4L4A1 With missed	D&E
	nternatic	ngi keje	abortion	rngi
94	A94	24	G4P3L3A1	D&E
			With missed	
			abortion	
95	A95	33	G7P3L3A2D	D&E
75	A7J	33	1 with missed	Dal
			abortion	
	Resease	h Through	Longvoti	56
96	A96	39	G6P4L4A1 With missed	D&E
			abortion	
97	A97	32	G6P3L3A2	D&E
			With missed	
			abortion	

98	A98	37	G7P4L4A2 with incomplete abortion	D&E
99	A99	40	G6P3L3A1D 1 with missed abortion	D&C
100	A100	38	G8P5L5A2 With missed abortion	D&E

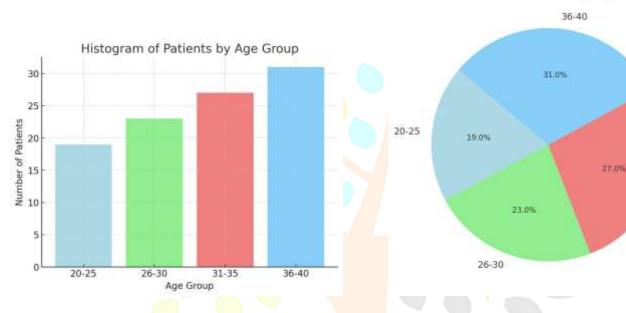


Result of the study:

Age Group	No. Of patients	Percentage
20 - 25	19	19%
26 - 30	23	23%
31 - 35	27	27%
36 - 40	31	31%

According to the above data provided it is seen that the incidence of abortion increases with the increase in age of the female and the number of patients falling in older age group is maximum as compared to the younger age groups .



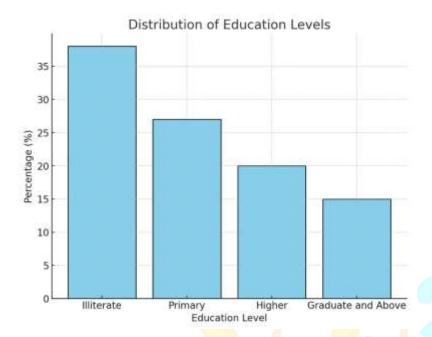


Analysis of the above data applied in terms of:

- . Education level
- . Parity
- . Socioeconomic status

Education Level-	international kerearch Journal
Category:	Percentage:
Illiterate	38%
Primary Education	27%
Higher Education	20%
Graduate and above	15%

31-35

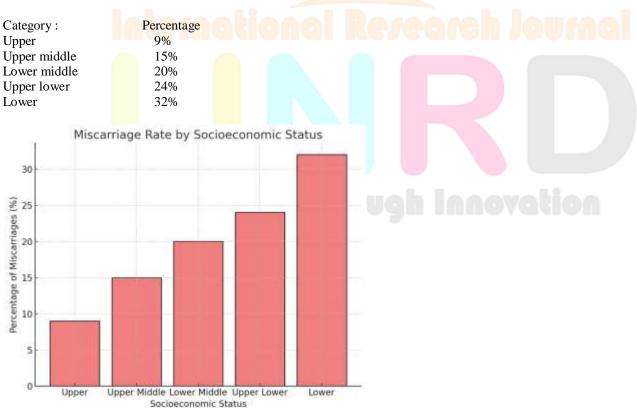


Women with lower levels of education tend to have higher rates of abortion due to factors such as limited access to contraception, lack of awareness about reproductive health, socio-economic challenges, and reduced decision-making power. In many cases, lower education levels are associated with early marriages and unplanned pregnancies, leading to an increased likelihood of seeking abortion as a solution. Addressing this issue requires improving educational opportunities, increasing awareness about family planning, and ensuring access to healthcare services.

Parity wise:

Increased parity, or having multiple pregnancies, is often linked to a higher risk of miscarriage. As the number of pregnancies increases, the body may experience greater physiological strain, weakening the uterus and reducing its ability to sustain future pregnancies. Additionally, repeated pregnancies can lead to complications such as cervical insufficiency, hormonal imbalances, and maternal health issues like anemia or hypertension, all of which contribute to an increased likelihood of miscarriage. Proper prenatal care, adequate birth spacing, and maternal health support are essential in reducing the risk of pregnancy loss in high-parity women.

Socioeconomic status:



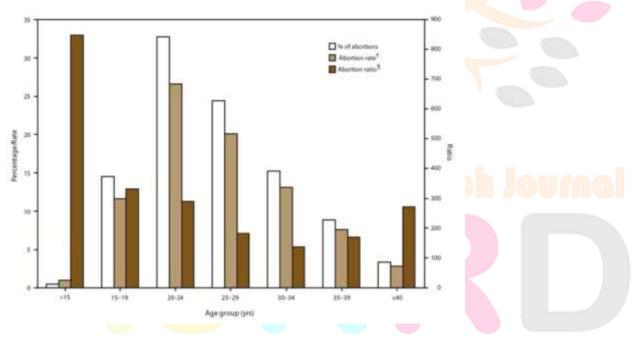
Based on the data, there is a clear relationship between socioeconomic status and the incidence of miscarriage. Women from lower socioeconomic backgrounds experience a higher rate of pregnancy loss, with 32% of miscarriages occurring among those in the lowest socioeconomic group. This percentage gradually decreases as socioeconomic status improves, with 24% in the upper lower class, 20% in the lower middle class, 15% in the upper middle class, and the lowest incidence of 9% among women in the upper socioeconomic category. The higher miscarriage rates in lower socioeconomic groups may be attributed to factors such as inadequate access to healthcare, poor nutrition, increased physical labor, and higher stress levels. Limited awareness of prenatal care and difficulty in accessing medical facilities can further contribute to adverse pregnancy outcomes. In contrast, women in higher socioeconomic groups are more likely to receive proper medical care, balanced nutrition, and a healthier living environment, reducing their risk of miscarriage. Addressing these disparities through improved healthcare accessibility, nutritional support, and maternal health awareness programs is essential in lowering pregnancy loss rates among economically disadvantaged women.

WHO

Based on a study by the World Health Organization (WHO), one out of every four pregnancies ends in abortion (World Health Organization, 2012). The estimated incidence of abortion by WHO ranges from 40-50 million per year or the same as 125,000 abortions per day. In Indonesia, the maternal mortality rate according to the Indonesian Demographic and Health Survey (IDHS) in 2012 was 228 per 100,000 live births. Of the aforementioned number, deaths due to abortion were recorded to reach 30 percent. This figure has decreased but has not yet reached the target of the Millennium Development Goals (MDGs) by 102 per 100,000 live births and this figure increased in the 2012 IDHS to 359 per 100,000 live births (Bappenas, 2014).

Comparison of the data with one of the data acquired from united states.

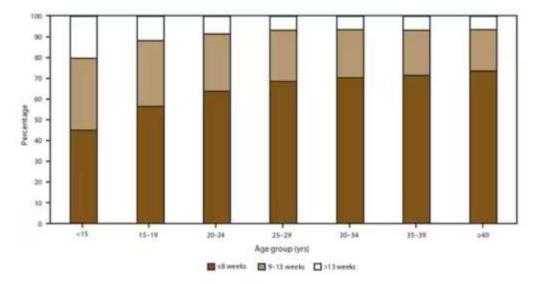
Percentage distribution of total abortions, abortion rate, and abortion ratio, by age group of women who obtained a legal abortion—selected reporting areas,* United States, 2010



Data are for 46 areas; excludes California, Florida, Maryland, New Hampshire, Vermont and Wyoming. Number abortions per 1,000 women aged 15-44 years. Number abortions per 1,000 live births.

The figure above is a bar chart that presents the percentage distribution of abortions, the abortion rate, and abortion ratio by the age group of women who obtained a legal abortion in 2010 in 46 reporting areas of the United States excluding California, Florida, Maryland, New Hampshire, Vermont, and Wyoming

Distribution of gestational ages at time of abortion, by age group of women — selected reporting areas, United States, 2010



In India, comprehensive data linking maternal age to abortion rates is limited. However, available studies provide some insights:

• Abortion Incidence:

A 2015 study estimated approximately 15.6 million abortions occurred in India, equating to ar

• Age Distribution: Research indicates that a significant proportion of abortions are among women aged 20–29. For instance, a study analyzing data from 2007–2011 found that 67.1% of abortions were classified as unsafe, with higher risks associated with younger women aged 15 19.

While specific data correlating increased maternal age with higher abortion rates in India is scarce, global trends suggest that the risk of miscarriage (spontaneous abortion) increases with maternal age. This is primarily due to factors such as chromosomal abnormalities, hormonal changes, and pre-existing health conditions.

Different causes of miscarriage or abortion in older pregnant females.

abortion rate of 47 per 1,000 women aged 15-49.

- 1. Genetic Abnormalities
- •The most common cause of miscarriage in older women is chromosomal abnormalities in the embryo, such as Down syndrome, Turner syndrome, or trisomy conditions.
- As women age, egg quality declines, increasing the risk of genetic errors during conception.
- 2. Hormonal Imbalances
- Progesterone deficiency can lead to an inability to sustain pregnancy.
- Thyroid disorders (hypothyroidism or hyperthyroidism) can interfere with embryo implantation and development.
- 3. Uterine and Cervical Issues
- Fibroids or polyps (more common with age) can interfere with implantation or cause placental problems.
- Weakened cervix (cervical insufficiency) increases the risk of second-trimester miscarriage.
- Endometriosis or scarring from previous surgeries can affect implantation.
- 4. Chronic Medical Conditions
- Diabetes (uncontrolled) can lead to fetal developmental issues.
- Hypertension (high blood pressure) increases the risk of placental problems.
- Autoimmune diseases like lupus or antiphospholipid syndrome (APS) can cause recurrent miscarriages.
- 5. Blood Clotting Disorders
- Conditions like thrombophilia or antiphospholipid syndrome (APS) can lead to placental failure and miscarriage.
- 6. Lifestyle Factor.
- Smoking, alcohol, or drug use increase miscarriage risk.
- Obesity or malnutrition affects hormone levels and fetal development.
- High stress levels may contribute to hormonal imbalances affecting pregnancy.
- 7. Infections
- UTIs, bacterial vaginosis, or sexually transmitted infections (STIs) can lead to miscarriage.
- Cytomegalovirus (CMV), toxoplasmosis, or rubella can cause fetal abnormalities.

- 8. Poor Egg Quality & Low Ovarian Reserve
- With age, the number of healthy eggs decreases, leading to a higher rate of abnormal embryos that fail to implant or result in early pregnancy loss.

Strategies to avoid pregnancy complications in older age group females.

Before Pregnancy (Preconception Care)

- 1. Consult a Doctor Get a full health check-up to assess risks related to age, chronic conditions, or genetic factors.
- 2. Manage Chronic Conditions Control conditions like diabetes, hypertension, or thyroid disorders before conceiving.
- 3. Maintain a Healthy Weight Obesity increases the risk of gestational diabetes, hypertension, and C-section.
- 4. Take Prenatal Vitamins Folic acid (400-800 mcg daily) helps prevent neural tube defects.
- 5. Healthy Lifestyle Choices Avoid smoking, alcohol, and excessive caffeine, and focus on a balanced diet and regular exercise.

During Pregnancy

- 1. Regular Prenatal Visits Frequent check-ups help detect and manage potential complications early.
- 2. Monitor Blood Pressure & Blood Sugar Older women have a higher risk of gestational diabetes and preeclampsia.
- 3. Screen for Genetic Disorders Tests like NIPT (Non-Invasive Prenatal Testing) can detect chromosomal abnormalities like Down syndrome.
- 4. Watch for Preterm Labor Signs Older women have a higher risk of preterm birth; recognizing symptoms early can help.
- 5. Stay Active & Eat Well A nutrient-rich diet and moderate exercise help support a healthy pregnancy.
- 6. Monitor Baby's Movements Any changes in fetal movement should be reported to the doctor immediately.

During Labor & Delivery

- 1. Plan for Possible C-Section Older mothers have a higher likelihood of requiring a C section due to medical risks.
- 2. Stay Aware of Blood Clot Risks Older women are more prone to deep vein thrombosis (DVT), so mobility after delivery is crucial.

Discussion:

The study highlights a significant correlation between increasing maternal age and the incidence of abortion in the rural belts of Faridabad. The findings demonstrate that as a woman's age advances, the likelihood of experiencing an abortion also rises. This trend aligns with global research, which suggests that biological, physiological, and social factors contribute to higher abortion rates among older women. One of the primary reasons for increased abortion rates in older women is the higher prevalence of genetic abnormalities and chromosomal disorders, such as Down syndrome and Turner syndrome, which lead to spontaneous abortions. Additionally, hormonal imbalances, including progesterone deficiencies and thyroid disorders, may impair the ability to sustain a pregnancy. Structural complications such as uterine fibroids, cervical insufficiency, and previous obstetric surgeries further increase the risk of pregnancy loss. Socioeconomic status also plays a critical role in determining abortion rates. The study found that women from lower socioeconomic backgrounds had a significantly higher rate of pregnancy loss. Factors such as inadequate access to healthcare, poor nutrition, physical labor, and a lack of awareness about reproductive health contribute to adverse pregnancy outcomes in these groups. In contrast, women from higher socioeconomic backgrounds tend to have better access to prenatal care, balanced nutrition, and medical facilities, which help reduce the risk of abortion. Parity, or the number of previous pregnancies, is another influencing factor. Women with a history of multiple pregnancies were found to have an increased risk of miscarriage due to uterine weakening, hormonal depletion, and overall maternal health deterioration. Furthermore, early marital age was associated with higher abortion rates, as younger women often lack reproductive health awareness and access to family planning services, leading to unplanned pregnancies. The study's implications are crucial for both medical practitioners and public health policymakers. By identifying the most vulnerable age groups, healthcare providers can focus on preventive measures such as genetic screening, prenatal monitoring, and maternal health education. Awareness programs and improved access to reproductive healthcare in rural areas can help mitigate abortion risks.

Conclusion:

In conclusion, this research underscores the importance of maternal age, socioeconomic status, education level, and parity in determining abortion rates. Addressing these factors through comprehensive healthcare interventions and public health initiatives can significantly improve maternal and fetal outcomes. The study confirms that the incidence of abortion increases with advancing maternal age. Women in older age groups experience a higher rate of pregnancy loss compared to younger women. This trend is primarily attributed to factors such as genetic abnormalities, hormonal imbalances, chronic medical conditions, uterine and cervical issues, and lifestyle influences. The findings emphasize the need for targeted healthcare interventions, including preconception counseling, regular prenatal care, and lifestyle modifications to mitigate risks. Early medical intervention, genetic screening, and proper maternal health management can significantly improve pregnancy outcomes for older

women. This research highlights the importance of educating women about age-related pregnancy risks and equipping healthcare providers with the necessary tools to offer personalized care to high risk age groups .

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