

Age Factors that Affect Pregnant Mothers Ability to Have an Abortion

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ABSTRACT

Background: Abortion is one of the problems in the world that affects the health, morbidity and mortality of pregnant women. The effect of abortion is the expulsion of the products of conception that occurs at <20 weeks of gestation, and the fetal weight is less than 500 grams. The bad impact of abortion if it is not treated quickly and appropriately will increase the maternal mortality rate caused by complications from abortion, namely bleeding perforation, infection and shock. **Objective:** To find out whether the age factor affects the incidence of abortion in pregnant women. **Methods:** The research method used is a literature review by looking for related articles from several search engines, including Pubmed and Google Scholar. The search was conducted using keywords: age, abortion. Pregnant women, pregnant women, miscarriages. **Result:** This literature study shows 10 articles that mention the age factor that greatly influences the incidence of abortion in pregnant women. Pregnant women aged 20-35 years have a higher risk than those aged 35 years and over. **Conclusion:** Factors that contribute to the occurrence of abortion in pregnant women are caused by several factors, one of which is the age factor. In the preparation of this literature review, there are 10 articles that will be used and found that discuss the history of abortion with the incidence of abortion in pregnant women. And it was concluded that there was an influence of age/age factors with the incidence of abortion in pregnant women where it is known that the older the mother is at risk in pregnancy, the higher the risk of miscarriage in the mother's pregnancy.

1. Introduction

Pregnancy is an event that is eagerly awaited by women [1]. But besides that, pregnancy can also cause various complications, one of which is abortion is a scourge for every pregnant woman. Abortion is the most feared by many pregnant women. Abortion can happen suddenly without any reason[2]. Abortion is the release of the products of conception before being able to live outside the womb with a weight of 28 week, miscarriage (abortion) is defined as the end of pregnancy before the fetus is able to live, ie when the gestational age has not reached 20 weeks or the fetus weighs <500 grams, either spontaneously or not [3].

According to WHO Maternal Mortality Rate (MMR) is caused by complications during and after death and childbirth, the main complications that cause almost 75% of all maternal deaths, namely

bleeding, infection, high blood pressure during pregnancy, (pre-eclampsia and eclampsia), complications from childbirth [4]. unsafe abortions and the remainder are caused by chronic conditions such as heart disease and diabetes[5]

Based on the latest data obtained from [4] where 134,923,865 people are female residents. The number of maternal deaths compiled from the recording of family health programs at the Ministry of Health in 2020 shows 4,627 deaths in Indonesia. This number shows an increase compared to 2019 of 4,221 deaths. Based on the causes, the majority of maternal deaths in 2020 were caused by bleeding as many as 1,330 cases, hypertension in pregnancy as many as 1,110 cases, and circulatory system disorders as many as 230 cases. According to [6] showed a significant relationship between age factors and the incidence of abortion in primigravida pregnant women with a significance value of $p < 0.01$, meaning that mothers who have been pregnant several times have a lower risk of having an abortion than mothers who are pregnant for the first time [7].

More than 80% of abortions occur in the first 12 weeks of pregnancy. Chromosomal abnormalities are the cause of at least half of these early abortion cases, in addition to many factors that influence the occurrence of abortions, including: parity, maternal age, gestational age, unwanted pregnancy, bad habits during pregnancy, and a history of previous miscarriages. The frequency of clinically detectable abortion increased from 12% in women aged less than 20 years, to 26% in women aged 40 years so that the incidence of spontaneous bleeding is more risky in women under the age of 20 years and over 35 years [8].

From the risk of abortion, it can cause various complications, including bleeding, sepsis, peritonitis, and trauma to the cervix, vagina, uterus, and abdominal organs. One in four women who have an unsafe induced miscarriage are at risk for temporary or permanent disability requiring medical services, especially obstetrics [9].

Efforts made by the government to prevent abortion are by issuing a policy of Antenatal Care (ANC) visits which are carried out at least 4 times during pregnancy [10].

2. Materials and Method

The method used is a systematic review. At the journal search stage by searching for articles using Google scholar and pubmed. The keywords used in the article search were *Age, Age, Miscariage, Abortion, Maternal Age, Pregnant Women*. The articles obtained will be reviewed to obtain articles that meet the predetermined criteria. The inclusion criteria in the search were chosen based on the year of publication, namely the range of 2017-2021 where the subjects were pregnant women who had abortions.

The exclusion criteria based on the article search were selected based on the research variables. The search was carried out according to keywords and obtained articles that were close to 25, the selection of subsequent articles was carried out based on inclusion and exclusion criteria so that 20 articles were reviewed. The journals that have been found are then specified according to the inclusion criteria and exclusion criteria, namely IC1: published journals, IC2: journals published in 2017-2021, IC3: quantitative research types, IC4: non-journals *duplicate* published in Pubmed and Google scholar. After conforming to IC1-IC 4, only 15 articles were left. Then IC5 was selected based on the compatibility of article titles and abstracts with the aim of this literature review, which is to have the main content investigating age factors that influence the incidence of abortion in pregnant women and only 10 journals were selected. will be analyzed. The strategy in searching the literature is attached in Figure 1.

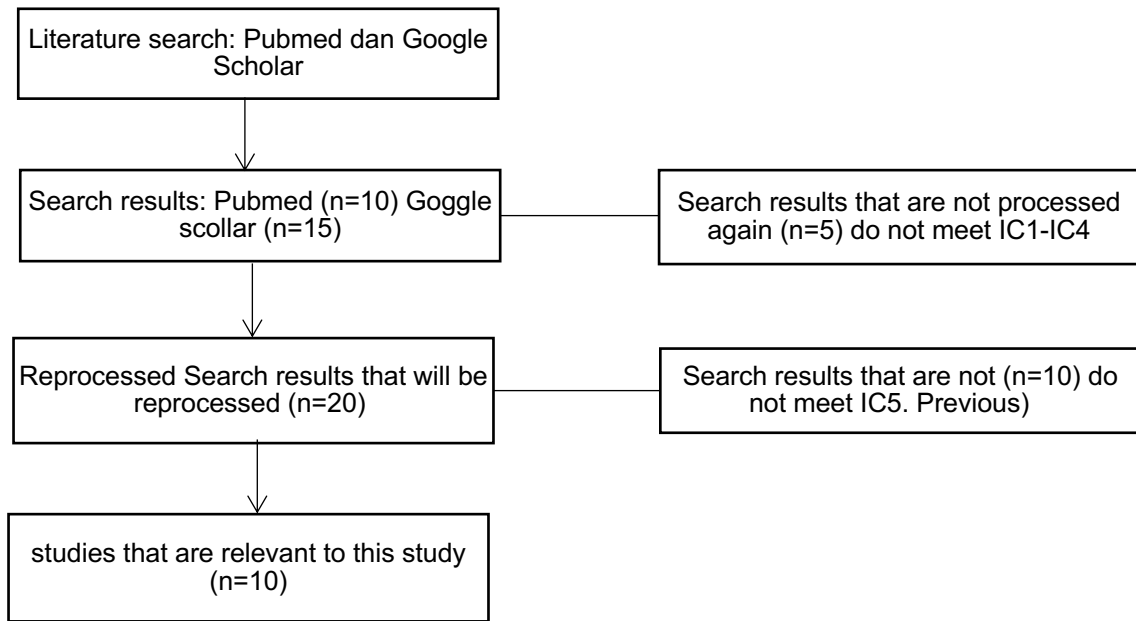


Figure 1. Review literature flow

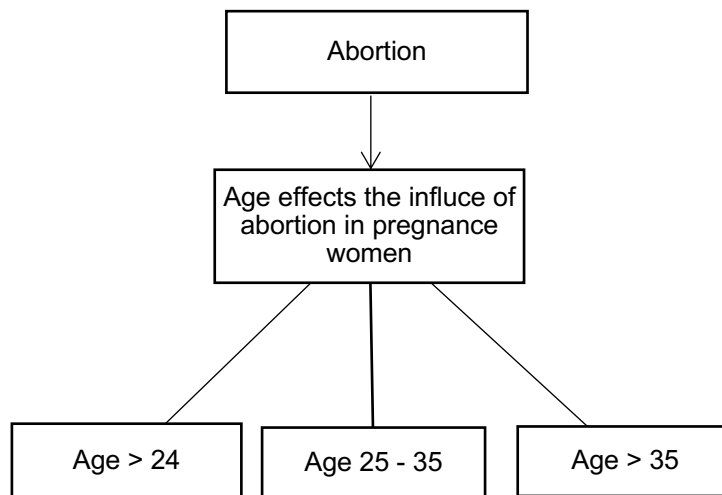


Figure 2. Mechanism of age effect on abortion

3. Results and Discussion

Author explored journals through journal databases based on the suitability of defined criteria and predetermined keywords, namely "age factors that affect the incidence of abortion in pregnant women". Of the 10 selected articles, 2 were conducted outside Indonesia and 8 of them were conducted in Indonesia. All articles have been analyzed and found the type of research using approach *cross sectional*.

3.1. Results

Table 1. Table of article analysis

Name of Author	Title	Method	Sampling technique	sample	Data analysis	Research results
Nobuaki Ozawa ¹ dan Kohei Ogawa ¹ , Aiko Sasaki ¹ dan Mari Mitsui & Seiji Wada ¹ & Haruhiko ^{Sag11} (Year 2019)	Maternal age, history of miscarriage, and embryo/fetal size are associated with outcomes of Cytogenetics of spontaneous early miscarriage[11]	approach <i>Cross sectional</i> .	Purposive sampling	32 people	chi-square /Fisher exact test.	Maternal age at continuity from a history of miscarriage, and embryo/fetal size at miscarriage may be independently associated with the frequency or profile of cytogenetic abnormalities in early miscarriage. The frequency of abnormal karyotype increases significantly with increasing maternal age. and the risk of stillbirth increases with increasing maternal age
Nindy Elliana Benly (Year 2019)	Risk Factors for Abortion Incidence at the Muna District General Hospital in 2017 [12]	approach <i>Cross sectional</i> .	Purposive sampling	182 people	tested the Odds Ratio (OR)	The results of the bivariate analysis of the Risk Factors for Abortion Incidence at the Muna Regency General Hospital in 2017 that based on the results of the Odds Ratio (OR) test that age and parity were 1.3 times more likely to have an abortion because the test value Odds Ratio (OR) > 1 so there are risk factors for age and parity
Nurhaeada ¹ , Diaz Capriani ² , Elvina ³ (year 2018)	Factors Associated with the Incidence of Abortion Imminens at Bhayangkara Hospital Palu City [13]	approach <i>Cross sectional</i> .	Purposive sampling	154 people	chi-square /Fisher exact test.	Value $p(0019) > 0.05$ so that where there is a relationship between the age of mothers with threatened abortion. The results showed that from 113 pregnant women who had a high risk of experiencing abortion imminens as many as 17 respondents (68.0%), while from 88 pregnant women who had a low risk age who experienced abortion imminens as many as 37 respondents (42.0%).
Elisa Diyah ¹ Purwaningrum ² , Arulita Ika Fibriana ³	Risk Factors for Spontaneous Abortion [14]	approach <i>Cross sectional</i> .	Purposive sampling	90 people	Chi square test	In the age group 20-35 years, as many as 27 people or 67.5%. In the age group 35 years in the age group 20-35 years as many as 39 people or

(year 2017)						72.5%. In the 35 year age group.
Erik Rosadi ¹ , Fithiyani ² , M. Hidayat ³ (year 2019)	Factors Associated with Abortion Incidence at Raden Mattaher Hospital, Jambi Province [15]	approach <i>Cross sectional.</i>	simple random sampling.	87 people	Chi square test	Childbearing age (61.1%) who experienced an abortion. The results of statistical tests can be seen p-value 0.005 (p <0.05). The results of this study indicate the factors causing abortion, one of which is the age of pregnant women where in this study the age of 35 years of pregnant women experienced more abortions than the age of 20-35 years of pregnant women.
Lili fajria (year 2020)	Analysis of Abortion Risk Factors at Dr. RSUP. M.Djamil Padang [16]	approach <i>Cross sectional.</i>	Retrospecti ve	125 people	chi square statistical test	There is a relationship between age and the incidence of abortion where p = 0.000 < 0.05. Age that causes abortion is 57.7% (30 people). This means that mothers who experience abortion are mostly in the age range that is not good for pregnancy.
Ratih Indah Kartikasari ¹ , Syifaul Ummah ² (year 2017)	Risk Factors for Age of Pregnant Women with Abortion Incidence at Dr. Hospital. Soegiri Lamongan [17]	approach <i>Cross sectional</i>	simple random sampling	32 people	chi square statistical test	Respondents aged 20-35 years as many as 15 people. And a small portion (21.9%) aged >35 years as many as 7 people. The relationship between the age of pregnant women and the incidence of abortion shows that half of women who are pregnant at a young age experience abortions as many as 5 people (50%), while pregnant women at an adult age who experience an abortion 1 person (7%), and pregnant women in old age almost some experienced abortions as many as 3 people (43%)
Samsinar ¹ , Siti Maisarah ² (year 2018)	Factors Associated with Abortion Incidence [18]	approach <i>Cross sectional</i>	random sampling technique.	75 people	chi square statistical test	Age 35 years 47 (62.7%) 20-35 years 28 (37.3%). Based on the results of research on the age variable, the Chi-Square test results obtained a P value = 0.029 and an OR value = 3.656 so it can be concluded that there is a significant relationship between maternal age and the incidence of

abortion.

Wulan Citra Sari (year 2020)	Relationship between Age and Parity with the Incidence of Abortion Imminens at RS.AR Bunda Kota Prabumulih in 2019 [19]	approach Cross sectional.	Random Sampling	278 people	chi square statistical test	Age of mothers who were at risk of imminent abortion were 85 people (31%) while 34 people were not imminent abortion (12%). For the age of mothers who are not at risk of imminent abortion, there are 13 people (4%) while those who do not have an imminent abortion are 146 people (53%). This study shows that there is a relationship between maternal age and the incidence of abortion imminens
Kholishatul Hikmah a ¹ , Desi Purnama Sari ² (year 2017)	Risk Factors of Maternal Age with High Risk of Abortion Incidence [20]	approach Cross sectional.	Purposive sampling	30 people	chi square statistical test	Maternal age with abortion, it was found that there were 13 (43.3%) mothers who were not at risk (20-35 years) who had an abortion, while among mothers who were at risk (35 years) there were 17 (35 years). 56.7%) who had an abortion. From the results of the analysis, the Odds Ratio value is also 7.857, meaning that the age at risk (35 years) has a 7.857 times greater chance of having an abortion compared to the age of the mother who is not at risk (20-35 years) or the age of the mother who is not at risk (20-35 years). years) has a 7.857 times less chance of having an abortion compared to the age of the mother at risk (35 years).

Figure 3 . Extraction table

3.2. Discussion

Based on the results of the literature review that has been described, it is known that the age factor is closely related to the incidence of abortion in pregnant women. This is in accordance with the theory which states that maternal age has an influence on pregnancy, at the age of less than 20 years is the age that is considered too young to get pregnant and give birth because the endometrium is not ready to accept the products of conception and if pregnant is over 35 years where the reproductive organs and body functions are others have begun to decline and maternal health is not as good as it used to be, and the risk of abortion increases with increasing maternal age[21].

One of the factors that can cause abortion is the age of the pregnant woman. According to[15] pregnant women aged 35 years experienced more abortions than pregnant women aged 20-35 years. The results of this search are in line with research conducted by [14] on the risk factors for spontaneous abortion. The results of the bivariate analysis conducted on the independent variable of maternal age indicate that statistically, maternal age is a risk factor for spontaneous abortion.

A healthy reproductive age measure is known that the safe age for pregnancy is 20-30 years, maternal mortality in pregnant women and giving birth at the age of under 20 years is 2-5 times higher than at the age of 20-29 years, maternal mortality increases again after the age of 20 years. 30-35 years old [22]

It is highly recommended in the future for pregnant women to play an active role in consulting health workers regarding pregnancy problems, especially age during pregnancy so as to avoid unwanted events [19]

Characteristics of respondents

Based on the results of the author's literature study, the number of samples was 10 articles in the proportion of more than 30 mothers who had an abortion based on the age factor. According to the author, the more samples used, the more valid the research results. suggested that the appropriate size in the study is in the range of 30 to 500 people, the larger the sample size, the results obtained have no impact [23].

A total of 10 articles show that the average age of respondents for a healthy reproductive period is 20-30 years and miscarriages can occur at a young age, because at a young age or adolescence the reproductive organs are immature or not ready to get pregnant. Maternal mortality in pregnant women and giving birth at the age of under 20 years, was 2-5 times higher than those aged 20-29 years [24]. Maternal mortality increases again after the age of 30-35 years. This is in accordance with the theory which states that maternal age has an influence on pregnancy, at the age of less than 20 years is the age that is considered too young to get pregnant and give birth because the endometrium is not ready to accept the products of conception and if pregnant is over 35 years where the reproductive organs and body functions are others have started to decline and maternal health is not as good as it used to be and the risk of abortion is getting higher with increasing maternal age [21], So it can be concluded that age affects the incidence of abortion, because at the age of 35 years where the reproductive organs and organ functions have begun to decline [25].

According to the author 's assumption , maternal age can affect the incidence of abortion . The influence of the age of the mother who is at risk for the incidence of abortion is due to the age of the pregnant women who are respondents with the diagnosis of abortion being susceptible to the occurrence of abortion, namely being too young or too old, this is also a predisposing factor for the occurrence of abortion. According to [16], the ideal age for women to undergo pregnancy and childbirth is in the age range of 20-35 years because the condition of women at that age is still in prime condition, marked by a uterus that is able to provide maximum protection during pregnancy. Meanwhile, according to [20] that the mother's age

factor has an influence on pregnancy and childbirth, mothers who are under 20 years old or over 35 years old are very at risk of abortion. Pregnancy of mothers under the age of 20 years affects physical and mental maturity in facing pregnancy. The higher the age of the pregnant woman, the greater the possibility of abortion.

Age Factor

Age is a characteristic that is owned by each individual. These characteristics can be a variable influence on the incidence of disease. The aspect of age also affects a person's ability both in activities and in facing various challenges in the form of disease [26]. However, according to [27] maternal age is closely related to the development of female reproductive organs, where a healthy reproductive age for a woman to become pregnant and give birth is 20-35 years. Pregnant women aged 35 years are more at risk of experiencing complications of pregnancy and childbirth than pregnant women aged 20-35 years. This is because women's sexual activity decreases and before menopause, so that fertility levels decrease. Age at pregnancy that is too young or too old has a higher risk of complications compared to a healthy reproductive age of 20-35 years [28].

The risk of abortion in women aged 35 years and over is more due to a decline in body function in the form of elasticity of the pelvic muscles and around other reproductive organs. Degenerative disorders and hormonal balance also begin to be disturbed so that the risks that may occur when pregnant women include easy abortion, premature birth, and fetal position abnormalities will ultimately pose a risk to pregnant women [29].

Age factors that influence the incidence of abortion

A total of 10 articles that the authors have reviewed show that the incidence of abortion can be influenced by age. This is in accordance with research conducted by [17], the age of most pregnant women is 20-35 years old, while a small proportion is <20 years old. The age of a woman at the time of pregnancy should not be too young and not too old. According to [25] the safe age for pregnancy is 20-35 years, more or less than that age is a high risk. Pregnancy at the age of <20 years can cause abortion because the uterine wall is not yet fully developed. Meanwhile, in pregnant women aged >35 years, the physiological process of the body has experienced a decline in the form of elasticity of the pelvic muscles and around other reproductive organs, the hormonal balance begins to be disturbed so that there are various risks of pregnancy including abortion.

This is in line with research conducted by [26] which states that at high risk age (35 years) the risk of experiencing incomplete and complete abortion is 2,345 times compared to low risk age (20-35 years). Pregnancy at the age of <20 years according to the theory that the pelvis is still narrow, the uterine muscles are not fully formed, the blood vessels that supply the endometrium have not been formed because this age is still in the growth stage [30].

According to [20] the age at risk (35 years) has a 7.857 times greater chance of having an abortion compared to the age of the mother who is not at risk (20-35 years) or the age of the mother who is not at risk (20-35 years) has a 7.857 times less chance experienced an abortion compared to the age of the mother at risk (35 years) this agrees with [15] stating that one of the factors causing abortion is the age of pregnant women where in this study the age of pregnant women 35 years experienced more abortions than the age of 20 pregnant women. - 35 years old. The results of this study are in line with research conducted by [14] on risk factors for spontaneous abortion. The results of bivariate analysis conducted on the independent variable of maternal age indicate that statistically, maternal age is a risk factor for spontaneous abortion.

4. Conclusion

The factors that contribute to the occurrence of abortion in pregnant women are caused by several factors, one of which is the age factor. In the preparation of this literature review, there are 10 articles that will be used and found as many as 3 articles that discuss the age factor with the incidence of abortion in pregnant women. In the preparation of this Literature review, there are 10 articles that will be used and 1 article was found that discusses the relationship between age and parity with the incidence of abortion in pregnant women. risk factors with the incidence of abortion in pregnant women. In the preparation of this literature review, there are 10 articles that will be used and found as many as 3 articles that discuss factors related to the history of abortion with the incidence of abortion in pregnant women.

From this research, it can be concluded that there is an influence of age/age factor with the incidence of abortion in pregnant women. and the older the mother is at risk in pregnancy, the higher the risk of miscarriage in the mother's pregnancy.

Declaration

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Conflicts of Interest: Authors declare there is no conflict of interest in this research

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