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# PRECONCEPTION CARE BEHAVIOR AMONG HIGH-RISK WOMEN OF CHILDBEARING AGE

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## ABSTRACT

Women of childbearing age who are at high-risk have a higher proportion of death caused by pre-existing medical conditions aggravated by the pregnancy. Poor behaviour and not carrying out preconception care will make this condition worsened. Meanwhile, the data on preconception care implementation in Indonesia still cannot be found. The research design was descriptive quantitative using a survey approach, with a population of 68 high-risk women of childbearing age, using purposive sampling with a total sample of 43 respondents who fulfilled the inclusion criteria. The instrument used was the preconception care behaviour questionnaire tested for validity and reliability. The behaviour of high-risk women of childbearing age in obtaining preconception health preparation information was enough (72.1%), anemia prevention and control behaviour was poor (90,7%), the accuracy in spacing pregnancy was enough (41.9%), and the accuracy of rational contraceptive use was good (60.5%). Increasing promotive and preventive attempts in improving preconception care behaviour in high-risk women of childbearing age are needed to prepare for healthy pregnancies in the future.

**Keywords:**
High-Risk Women of Childbearing Age Behaviour, Preconception Care.

## INTRODUCTION

High-risk women of childbearing age have a proportion of 28% of deaths due to medical conditions they have and will worsen due to not being managed according to preconception care (UNICEF, 2019) (Fekene *et al.*, 2020). The implementation of preconception care that has not been maximized is still a global concern, especially in developing countries which are estimated to be almost non-existent (WHO, 2013a) (Kassa and Yohannes, 2018). The risk of complications of maternal morbidity and mortality has a higher chance of occurring in high-risk women of childbearing age if not followed by good preconception care behaviours such as obtaining information about preconception health preparation, consumption of additional Fe in the prevention and control of anemia, accuracy in spacing pregnancy, and appropriate use of

rational contraception (Lassi *et al.*, 2014) (WHO, 2020b).

The highest causes of maternal mortality in East Java are hypertension in pregnancy, bleeding, other diseases that accompany pregnancy, metabolic disorders, and infections (Kemenkes RI, 2020). Riskesdas data in 2018 stated that the proportion of Chronic Energy Deficiency (CED) in high-risk women of childbearing age reached 14.5% (Riskesdas, 2018). In addition, the anemia prevalence in high-risk women of childbearing age in Indonesia increased from 2015 to 2016, from 27.85% to 28.83% (WHO, 2020a). Data in 2015 showed that the Maternal Mortality Rate (MMR) in Indonesia was still high at 305/100,000 live births, while Malang Regency in 2018 recorded at 44.25 per 100,000 live births (Kemenkes RI, 2019) (Dinkes Provinsi Jawa Timur, 2019). Preconception care was a strategy to improve pregnancy quality because risk factors may be managed before pregnancy occurs.

The implementation of preconception care in several developing countries like Ethiopia, Sudan, and Brazil, was recorded at 13.4%, 9%, and 7.9% (Demisse *et al.*, 2019) (Ahmed *et al.*, 2015) (Nascimento, Borges and Fujimori, 2019). Research on the actions of preconception women in preparing for a healthy pregnancy conducted by (Zulfahani, 2020) on 80 married women gave the majority (80%) results in the enough category. Meanwhile, another study conducted in Banggai Regency by (Balebu *et al.*, 2019), showed that high-risk women of childbearing age who did not utilize preconception care at integrated service post, 88.5% experienced anemia, 76% experienced an abnormal BMI, and 84.62% experienced CED.

Improper implementation of preconception care also was caused by maternal knowledge, lack of maternal participation in preconception care, the ability of health workers to provide services, affordability, and access to these services (Kassa and Yohannes, 2018) (Mazza, Chapman and Michie, 2013). It can also have an impact on increasing the occurrence of unwanted pregnancies, maternal and newborn mortality, complications of pregnancy and childbirth, stillbirth, premature birth, low birth weight (LBW), congenital anomaly, infections, CED, stunting, and other comorbidities (WHO, 2013b) (Jourabchi *et al.*, 2018).

Preconception health service prepares a healthy pregnancy in accordance with the government efforts in the Regulation of the Minister of Health of the Republic of Indonesia Number 97 of 2014 (Kemenkes RI, 2014). The Malang Regency Government has an excellent program, namely CONTRA WAR (Contraceptive for Women at Risk), to capture high-risk women of childbearing age, directed to use the right contraception during the healing period of the disease they have. However, the number of active family planning participants in Malang Regency has decreased from 2016, which was 413.508, to 393.878 in the year of 2017 (BPS

Kabupaten Malang, 2018). It shows that there is a risk of an increase in the number of unmet needs in high-risk women of childbearing age, which can trigger pregnancy complications, because the disease has not received specific treatment (DPPKB, 2015). Data from the Malang Regency DPPKB in 2020 shows that Singosari District was included in the top 5 sub-districts in Malang Regency with the highest number of high-risk women of childbearing age cases (DPPKB, 2020).

Preconception care through the provision of information was effective in dealing with adverse pregnancy outcomes. Adequate iron intake increases hemoglobin, iron status and reduces the risk of anemia. In addition, delaying and shortening gestation in women with certain medical conditions is a component of preconception care, so planning for pregnancy and considering contraceptive use should be discussed early on (Lassi *et al.*, 2014)(WHO, 2020b). Preconception care reduces the risk of morbidity and mortality in high-risk women of childbearing age. However, the data on how high-risk women of childbearing age behaves in preconception care, especially in planning pregnancy, have not been widely studied. The purpose of this study was to find out how the behaviour of high-risk women of childbearing age in carrying out preconception care. The specific objectives of this study were to identify types of high risk in women of childbearing age, behaviour in obtaining information about preconception health preparation, behaviour to prevent and treat anemia, accuracy in spacing pregnancy, and appropriate use of rational contraception.

## METHOD

The study design in this research was descriptive quantitative with a survey approach to describe the characteristics and preconception care behaviour of high-risk women of childbearing age. The data collection was in April – May 2021 in Wonorejo Village, Singosari District, Malang Regency. The population in this study was 68 high-risk women of childbearing age, using purposive sampling with a total sample of 43 respondents who met the inclusion criteria. The inclusion criteria are married, not pregnant, have a maximum of 2 children, are planning a future pregnancy, and have a high risk of at least one following the type of high risk guided by the DPPKB (DPPKB, 2015).

The variable in this study is a single variable, namely preconception care behaviour in high-risk women of childbearing age. These behaviours include obtaining information about preconception health preparation, consumption of additional Fe in preventing and overcoming anemia, accuracy in spacing pregnancy, and appropriate use of rational contraception. The

preconception care behaviour questionnaire, compiled by the researcher based on existing literature, has been tested for its validity using Pearson's Product Moment with the results of 32 valid questions. The reliability testing has conducted using Cronbach's Alpha with the results of very high reliability (r coefficient= 0.8000 – 1.0000).

The data collection process was carried out through door-to-door visits accompanied by local cadres to distribute preconception care behaviour questionnaires. Researchers consider the willingness to become research respondents by asking respondents to sign an informed consent. The re-checking process was to see the completeness of the answers to the questionnaire. Descriptive data analysis describes preconception care behaviour in high-risk women of childbearing age. Each data collected is calculated in percentage and frequency and compiled into a frequency distribution table using Microsoft Excel 2010. Determination of behavioural categories begins with scoring the respondent's answers by the classification always a score of 4, often a score of 3, sometimes a score of 2, and never a score of 1. These scores were summed up and converted to a Likert scale by calculating the mean and standard deviation (Azwar, 2012), divided into good, sufficient, and poor categories. Good category if X > 75%, enough if 50% X 75%, and less if X < 50%. The research carried out has met ethical principles and has been approved for implementation by the Health Polytechnic Ethics Commission of the Ministry of Health Malang in April 2021 based on the Certificate of Passing the Ethics Test Registration Number: 101/KEPK-POLKESMA/2021.

## RESULTS

**Table 1. Characteristics of High-risk Women of Childbearing Age based on Age, Education, Employment, and Type of Risk Factors**

| Characteristics (n= 43) | f (%) |
|---|---|
| **Age:** | |
| < 20 | 2 (4,7) |
| 20 – 35 | 14 (32,6) |
| > 35 | 27 (62,8) |
| **Education:** | |
| Elementary school | 36 (83,7) |
| Junior high school | 7 (16,3) |
| **Employment:** | |
| Employed | 4 (9,3) |
| Unemployed | 39 (90,7) |
| **Type of Risk Factors:** | |
| Obstetric: | |
| Chronic Energy Disease | 11 (25,6) |
| Too young (< 20) | 2 (4,7) |
| Postpartum (lactation/non-lactation), including post caesarean section | 1 (2,3) |
| Non-Obstetric: | |
| Hypertention | 14 (32,6) |
| Heart disease | 5 (11,6) |
| Bronchial asthma | 2 (4,7) |
| Diabetes mellitus | 2 (4,7) |
| Iron deficiency anemia | 2 (4,7) |
| Tuberculosis | 1 (2,3) |
| Epilepsy | 1 (2,3) |
| Gynecology: | |
| Uterine fibroma | 2 (4,7) |

Data on the characteristics of respondents based on Table 1 shows that most of the high-risk women of childbearing age were aged > 35 years (62.8%), elementary school education level (83.7%), and worked as housewives (90.7%). The three types of respondents' risk factors are obstetrics, non-obstetrics, and gynecological diseases. CED (25.6%) was the most common case in the obstetrics group, hypertension (32.6%) in the non-obstetric disease classification, and uterine fibroma (4.7%) in the gynecological disease classification.

**Table 2. High-risk Women of Childbearing Age Behaviour in Obtaining Information about Preconception Health Preparation**

| Category (n=43) | f (%) |
|---|---|
| Good | 5 (11,6) |
| Enough | 31 (72,1) |
| Poor | 7 (16,3) |

The behavior of high-risk women of childbearing age in obtaining information from health workers related to preconception health preparation, according to Table 2, shows that most of the respondents have enough behavior (72.1%).

**Table 3. High-risk Women of Childbearing Age Behaviour in Prevention and Management of Anemia in Preconception Care**

| Category (n=43) | f (%) |
|---|---|
| Enough | 4 (9,3) |
| Poor | 39 (90,7) |

The behavior of high-risk women of childbearing age in preventing and treating anemia in preconception care, such as consuming vegetables, fruits, Fe supplementation, iron-rich foods, and consumption of Fe absorption inhibitors, according to Table 3, shows that most have poor behavior (90.7%).

**Table 4. High-risk Women of Childbearing Age Behaviour in The Accuracy of Spacing Pregnancy in Preconception Care**

| Category (n=43) | f (%) |
|---|---|
| Good | 17 (39,5) |
| Enough | 18 (41,9) |
| Poor | 8 (18,6) |

The behavior of high-risk women of childbearing age in the accuracy of pregnancy spacing in preconception care, according to Table 4, shows that most have enough behavior (41.9%).

**Table 5. High-risk Women of Childbearing Age Behaviour in The Accuracy of Rational Use of Contraceptives in Preconception Preparation**

| Category (n=43) | f (%) |
|---|---|
| Good | 26 (60,5) |
| Enough | 16 (37,2) |
| Poor | 1 (2,3) |

High-risk women of childbearing age behavior in the percentage of appropriate rational contraceptive use in preconception preparation, following Table 5, shows that most of them have good behavior (60.5%).

## DISCUSSION

The study results in Wonorejo Village showed that 25.6% of women of childbearing age had a high risk of experiencing CED. A similar picture occurs in a study in Ethiopia that 25% of high-risk women of childbearing age living in rural areas are malnourished (Wubie *et al.*, 2020). It is due to the frequency of unbalanced nutritional intake due to daily consumption habits adjusted to the amount of income. Low income causes high-risk women of childbearing age can not reach nutritious food variants, so food intake is also not optimally fulfilled. A study shows that mothers who live in rural areas experience more CED (47.0%) compared to mothers who live in urban areas (36.3%) due to differences in the level of socioeconomic status (Tejayanti, 2020).

The incidence of CED in this study is closely related to indicators of anemia prevention behaviour which shows that most of the results are in the poor category, especially in animal protein intake. The study results by (Dictara *et al.*, 2020) showed a significant relationship between protein intake and the incidence of CED. In addition, the factors that caused the occurrence of CED at the study site were screening for CED was only carried out during pregnancy check-ups and was not carried out evenly in women of childbearing age, as well as the lack of knowledge of cadres in assessing the risk of CED.

Cases of hypertension are the most cases in the classification of non-obstetric diseases (32.6%). In line with the study by (Octaria *et al.*, 2020), the prevalence of hypertension in high-risk women of childbearing age living in rural areas is slightly high. One of the individual factors that influence health behaviour is motivation and cognition (Green, Hiatt and Hoeft, 2015). The research respondents indicated that 90.7% were unemployed (housewives) and 83.7% were an elementary education level. Although as a housewife, if there is no solid motivation to seek information related to preventive measures against existing risks, it has the potential to be uncontrollable. In addition, the low level of education causes a lack of knowledge to reduce controllable risks, such as lack of activity, stress, and sensitivity to sodium levels (Situmorang, 2018). Sensitivity to sodium levels is closely related to sodium/salt consumption per day. Salt consumption at the household level is understood as the amount of salt added during the cooking process but does not understand that most salt consumption comes from snacks or instant foods consumed daily. This study did not examine the risk factors that cause hypertension in high-risk women of childbearing age. However, several studies can provide an overview of the risk factors for the results of this study. Situmorang's (2018) research on women aged 15-49 years shows that having a family hypertension history has 7.69 times the

chance of suffering from hypertension. Another thing that also affects is the age factor. Age is a risk factor for hypertension that cannot be changed or controlled. Most of the respondents are aged > 35 years old (62.8%), and where the increasing age is, the risk of hypertension will also increase, especially if aggravated by other risk factors. Psychological changes in the body due to aging will affect the function of the heart, blood vessels, and hormones.

The next type of risk factor is uterine fibroma, one of the diseases in the category of gynecological. Although the incidence is only 4.7%, uterine fibroma is the most common disease. Some risk factors for uterine fibroma are age over 40 years, hypertension, uterine fibroma in family history, premenopause, last birth in 5 years or more, and consumption of artificial sweeteners or other food preservatives (Stewart *et al.*, 2017). Screening and management of uterine fibroma in Wonorejo Village were less than optimal due to not all high-risk women of childbearing age submitting comprehensive complaints to health workers, thus hampering the process of recording information. The awareness of each individual also affects because there are still high-risk women of childbearing age who are not compliant to seek treatment even though they have received information, education, and communication (IEC). Differences in awareness, perception, and belief cause the understanding of the information not to be thoroughly accepted by women of childbearing age.

The high-risk women of childbearing age behaviour in preconception care captured in obtaining preconception health preparation information. Most of the high-risk women of childbearing age behaved enough in acquiring this information (72.1%) which means that it still needs to be improved. Each action can be influenced by individual factors such as perspective, assessment of an object, and beliefs. The respondents obtained this information from local health workers during integrated service posts or counseling services. Meanwhile, in practice, the information provided is adjusted to actual problems that are sometimes not accompanied by information on other potential matters and is only carried out at certain times. In addition, the presence of mothers also contributes to their role in participating in activities. Research by (Bortolus *et al.*, 2017) showed that some of the obstacles were the mother's or health worker's lack of awareness, suboptimal community promotion, the health worker's incompetence in conveying health information, and the adverse effects that arise when health is compromised (Kassa and Yohannes, 2018) (Mazza, Chapman and Michie, 2013).

The behaviour of prevention and control of anemia from the results of the study showed that 90.7% of high-risk women of childbearing age had unfavorable behaviours such as lack of animal protein intake, dark green vegetables, and consuming tea drinks. The lack of animal protein intake is related to purchasing ability because there is a tendency for animal

protein to be more expensive and a lack of free access to obtain it due to finances only coming from husbands who work as farmers. A study by (Ali, Khan and Feroz, 2020) stated that the highest prevalence of anemia in high-risk women of childbearing age living in rural areas was influenced by the standard of living index. It can happen because economic status will affect the consumptive behaviour and eating patterns (Ali, Khan and Feroz, 2020). Intake of tea drinks is also not understood as a risk factor for anemia. Indonesian people believe that tea drinks are much healthier than coffee and that the price is relatively affordable. Consuming tea is used as a lifestyle or as a flavoring consumed daily. Generally, every household provides tea that can be brewed and consumed (Martina and Abdillah, 2020). Tea contains tannin, one of the substances that inhibit iron absorption (Royani, Irwan and Arifin, 2017). Another factor that needs consideration is literacy which can affect the occurrence of anemia because it can hinder the process of understanding educational information so that knowledge related to anemia is limited. According to research conducted in Ethiopia, Congo, and Bangladesh, rural women with poor literacy skills are more likely to suffer from anemia (Ali, Khan and Feroz, 2020).

Research data shows that 41.9% of high-risk women of childbearing age have enough behaviour in the accuracy of pregnancy spacing. Contrary to the results of a study that showed most mothers did not have good enough pregnancy planning and did not know that health preparation was necessary before pregnancy (Nelson *et al.*, 2016). One of the enabling factors that may influence this difference is Wonorejo Village was the icon of the Family Planning Village in Singosari District. Promotion of contraceptive use aimed to regulate pregnancy spacing and maintain reproductive health, especially in high-risk women of childbearing age. It is now acceptable to space pregnancies at intervals of more than two years, even in rural areas. It is due to the perception that the distance between children who are too close will increase the economic burden and increase activities in caring for children. Several internal factors that influence interpregnancy interval are maternal age, past delivery history, breastfeeding history, past contraceptive use, child's gender, and desire to plan children in the future. Meanwhile, the external factors are the level of the mother's education, husband's support, work, and husband's income (Wulandari, 2021). The study by (Borges *et al.*, 2016) stated there is a correlation between preconception health behaviour and pregnancy planning status. However, not all mothers who plan pregnancy have done preconception preparation well because sociodemographic and economic characteristics also play a role. The low economic level causes high-risk women of childbearing age can not access health information, have less

knowledge about contraception, and have difficulty deciding the number and timing of having children.

Pregnancy planning is closely related to the use of contraception. As many as 60.5% of high-risk women of childbearing age have good behaviour in the accuracy of rational contraceptive use. Good knowledge and self-awareness support the implementation of rational contraceptive use. Health behaviour at the individual level is inseparable from the environmental factors of health services. (Green, Hiatt and Hoeft, 2015) state that health care environmental factors are intermediaries for the relationship between individual behaviour and health, illness, injury, or even death. The environmental factor, in this case, is the role of health workers and cadres in providing information and education according to the target group. It is performed in the hope that the final decisions according to the health conditions of each high-risk woman of childbearing age. High-risk women of childbearing age are suggested to use long-term contraception so that they have enough time to treat or reduce risk factors before deciding to undergo a subsequent pregnancy.

## CONCLUSION

High-risk women of childbearing age have one or more risks that can endanger the process of pregnancy and childbirth in the future, as well as the condition of the baby to be born. Preconception preparation behaviour with indicators of getting information about preconception health preparation, prevention of anemia, the accuracy of birth spacing, and rational use of contraception are classified as enough. However, most of the anemia prevention behaviour is in the less category. Increased promotive and preventive efforts in improving preconception care behaviour in high-risk women of childbearing age are needed to prepare for healthy pregnancies in the future.

## ABBREVIATIONS

BMI : Body Mass Index; CED : Chronic Energy Disease; CONTRA WAR : Contraceptive for Women at Risk; CPR : Contraceptive Prevalence Rate; IEC : Information, Education, and Communication; LBW : Low Birth Weight; MMR : Maternal Mortality Rate.

## COMPETING INTEREST

The authors report no conflict of interest.

## AUTHORS' CONTRIBUTION

The first and third author performed in correcting the result of this research, and the corresponding author was the collecter of the research data.

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