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Review Article

Why Preconception Treatment is Important? A Literature Reviews

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ABSTRACT

Objective: Conceptional care is a concept that has been proposed to address maternal health problems and environmental risk factors during pregnancy to improve the health of both mother and fetus during pregnancy. This article provides an overview of several studies relating to preconception care that are useful for preparing for a healthy pregnancy and fetus. **Methods:** This narrative review uses several sources from the Elsevier database. Key search terms such as preconception, iron status, pregnancy and fetus were used in this review. Of the 50 studies identified, 20 were eligible for inclusion in this review. **Results:** Preconception care is getting an increased focus as an effective way to prevent complications during pregnancy, childbirth, and postpartum as well as preventing fetal abnormalities by estimating nutritional status in the preconception period. Preconception care is aimed at supporting the health of women before pregnancy, which is useful for improving the health of a pregnancy and preventing stunted fetal growth due to poor nutritional status in the mother. Low preconception iron status will have an impact on preconception gynecological morbidity, which will cause complications in pregnancy and cause low birth weight. **Conclusion:** Preconception care when given regularly will affect the health of a pregnancy and the baby when born. Preconception care teaches women of reproductive age to minimize potential health risks from an early age so that if they have a baby, the baby is born in better health. Considering that a healthy baby is very late if it is prepared during pregnancy but must be prepared from the preconception period, that is why preconception is so important.

Key words: Preconception, Iron status, Pregnancy, Fetus.

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INTRODUCTION

Preconception care is a concept that has been proposed to address maternal health problems and risk factors prior to pregnancy to improve gestational outcomes.[1] Preconception care strategies are defined as behavioral, biomedical, and social interventions offered to couples before conception so that they can prevent some diseases through making healthier lifestyle choices. One of the problems that often occurs in the preconception period is anemia. Approximately 42% of children under the age of five and 40% of pregnant women experience anemia. This can be traced to poor nutritional status during the preconception period. Nutritional deficiency is one of the most common causes of anemia, especially iron deficiency, folic acid and micronutrients (WHO, 2020). Pregnancy readiness is strongly influenced by nutritional status during preconception and is closely related to pregnancy outcome.[1] It is significantly associated with the occurrence of reproductive disorders.[2]

Preparing for a pregnancy is important for prospective mothers and they should ensure that they meet their micronutrients needs in the preconception phase.[3] Giving iron as a supplement can help prevent anemia in the preconception phase and this can prevent the birth of babies with low birth weight (LBW) and prevent premature birth.[4] Improving nutrition during the preconception period has a positive and long-term effect on the fetus in the womb, so interventions are needed during the preconception period in the form of micronutrient supplements.[5]

Preconception iron supplementation is intended to provide ~1000 mg of iron which is needed during pregnancy. It has been stated that the incidence of iron deficiency during the preconception period has a negative impact on pregnancy so providing iron supplements during the preconception period should be a high priority for the government. In Ghana, most of the interventions offered to women are targeted primarily during the postpartum period. Research has shown that the interventions offered during pregnancy are not sufficient to ensure sufficient micronutrient intake for the mother and fetus so preconception care is needed to help prevent complications that can occur during pregnancy. Preconception care targeting nulliparous women has not received much focus as a public health problem.[6] If the nutritional status of a woman is good in the preconception period, then. As important as preconception intervention is, it becomes the background in this research. This study aims to answer the question of why preconception care is so important.

METHOD

An electronic database was used to compile the literature review is to use. The article search method used ProQuest, PubMed, Scinapse, Science Direct, and DOAJ. The keywords used in the journal search were preconception, iron status, pregnancy and fetus.

Search article

In order to facilitate the search for references, it was determined that the keywords used in the journal search were a) preconception, b) iron status, c) pregnancy, and d) fetus. This literature review does not limit the type or design of the study.

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RESULTS

Several studies that are relevant to the study of why preconception care is so important have been reviewed. There are seventeen studies that discuss the importance of preconception care to pregnancy outcomes. The authors who discuss the importance of preconception care are as follows (Table 1): Adu ph et al.,[6] Ramlakhan,[7] Wesselink, [8] Jack, [9], Hemsing,[10] Mustieles,[11] Zhang Y,[12] Bicmore,[13] Muchanga,[14] Reijnders et al.,[15] Mohold,[16] Oluwayiose et al.,[17] Kauffman et al.,[18] Ganjoo R et al.[19] Three studies that are related to anemia during preconception were Doan, et al.,[20] Nguyen et al.,[21] Shah et al.[22]

DISCUSSION

The findings from this literature indicate that preconception care is a concept that has been proposed to address maternal health problems and environmental risk factors in the preconception period in order to improve the health of a pregnancy. A study conducted in Ghana showed that the prevalence of anemia between 15 and 49 years of age was 78.4 % and 42%. Most pregnant women are already anemic prior to becoming pregnant and so intervention during the preconception period is required.[6] The health of a pregnancy is greatly influenced by the fulfillment of nutritional requirements during the preconception period. Intervention during the preconception period needs to be in place before planning a pregnancy because a healthy physical condition during preconception increases the likelihood of a healthy pregnancy.[7]

Preconception counseling is very important to allow strong decision making to optimize pregnancy outcomes. Providing minimal information to preconception couples will result in mothers not knowing what to prepare for in the period leading up to pregnancy.[8] Preconception care identifies many risks that, if detected before pregnancy through preconception care, can improve the quality of the mother's and baby's health. It is not enough to solely assess the nutritional status of the mother when she is pregnant, but it must be considered during the preconception period because often poor nutritional status has occurred prior to the pregnancy.[9]

Preconception care should not only be targeted at women, but the partner's role also is important during the preconception period in order to obtain good nutritional status. A woman may already have a poor nutritional status before finding out that she is pregnant, and this can be a predisposing factor for pregnancy complications that have an effect on fetal growth and development. Nutritional status during preconception affects pregnancy readiness for prospective mothers and is closely related to pregnancy outcomes.[10] Women with endometritis

Table 1. Evidence supporting the importance of preconception care.

Authors (year)	Evidence Theory of Preconception
Adu ph, et al.[6]	A study conducted in Ghana showed that the prevalence of anemia between 15 and 49 years of age was 78.4% and 42% of pregnant women were already anemic, requiring intervention from the preconception period.
Ramlakhan et al. [7]	Preconception care that focuses on improving nutritional status needs to be prepared before facing pregnancy, because good nutritional status will affect the quality of pregnancy.
Wesselink et al.[8]	Preconception counseling is very important in making decisions to optimize pregnancy outcomes. Several studies have shown that risk factor arise from in the preconception period.
Jack et al. [9]	About 100 pregnancy risk of pregnancy are identified during preconception care. Providing interventions that are started before pregnancy can improve the condition of both mother and baby.
Hemsing et al. [10]	The involvement of partners of reproductive age before pregnancy needs to be increased. Some cases show that before knowing they are pregnant, women have entered previous poor health conditions that can harm the condition of the pregnancy and the fetus. Nutritional status during preconception affects pregnancy readiness for the mother-to-be, because it is closely related to pregnancy outcomes
Doan et al.[21]	Increased severity of anemia was identified as a predisposition to complications for the mother There are 23 recommendations on preconception for better management of women of childbearing age in improving their conception outcomes
Mustieles et al.[11]	Some researchers explain that health conditions during preconception are a determinant of the quality of pregnancy and the fetus.
Nguyen et al., 20[19]	If the preconception period is anemic, the quality of the pregnancy will suffer some of the complication include growth retardation in the womb, prematurity, preeclampsia, disability, to an increased risk of fetal death.
Zhang Y et al.[12]	In the United Stated, efforts to prevent predisposing factors for pregnancy complications have not been achieved. Interventions during the preconception period are proven to be beneficial because this period to be beneficial because this period is said to be the most influential period to determine the condition of future pregnancies. Many Interventions to couples before entering pregnancy including regular health checks and attention to improving nutritional status.
Shah et al.[22]	The state of anemia in the preconception period greatly affects the pregnancy and the fetus in the womb. Gestational anemia is very influential on neonates. Anemia is a health problem that occurs in several developing countries, and this condition greatly affects the condition of pregnancy and fetus in the womb.
Bicmore[13]	To improve maternal and infant health outcomes, Intervention in the preconception period is important for all women in preparing for pregnancy with a good nutritional status before entering pregnancy.
Muchanga[14]	Women with endometritis and menstrual problems in the preconception period are at risk in pregnancy and postpartum, so it is important that preconception care is given to overcome this.
Reijnders[15]	Millions of women experience problems with pregnancy complications and fertility problems around the world. The health risks experienced in preconception often continue throughout pregnancy
Mohold[16]	New approaches are urgently needed to increase adherence to lifestyle changes, especially in reproductive age. An unhealthy lifestyle will cause epigenetic metabolic disorders so that they experience delays in implementation which ultimately affect pregnancy, so preconception interventions are needed with healthy lifestyle education to produe good nutritional status.
Oluwayiose et al.[17]	
Kauffman et al.[18]	The condition of the genes of women and men during the preconception period greatly affects the state of pregnancy and the fetus in the womb
Punj S et al.[23]	Advances in technology allow analysis of greater gene selection for screening of preconception carriers
Kurniawati et al.[24]	The nutritional status of women during premarital periods affects the fetus, an unhealthy lifestyle during the preconception period will influence pregnancy and the fetus in the womb.
Ganjoo R et al.[19]	In India half of women of childbearing age are anemia. Regular consumption of iron and folic acid can prevent and treat anemia.

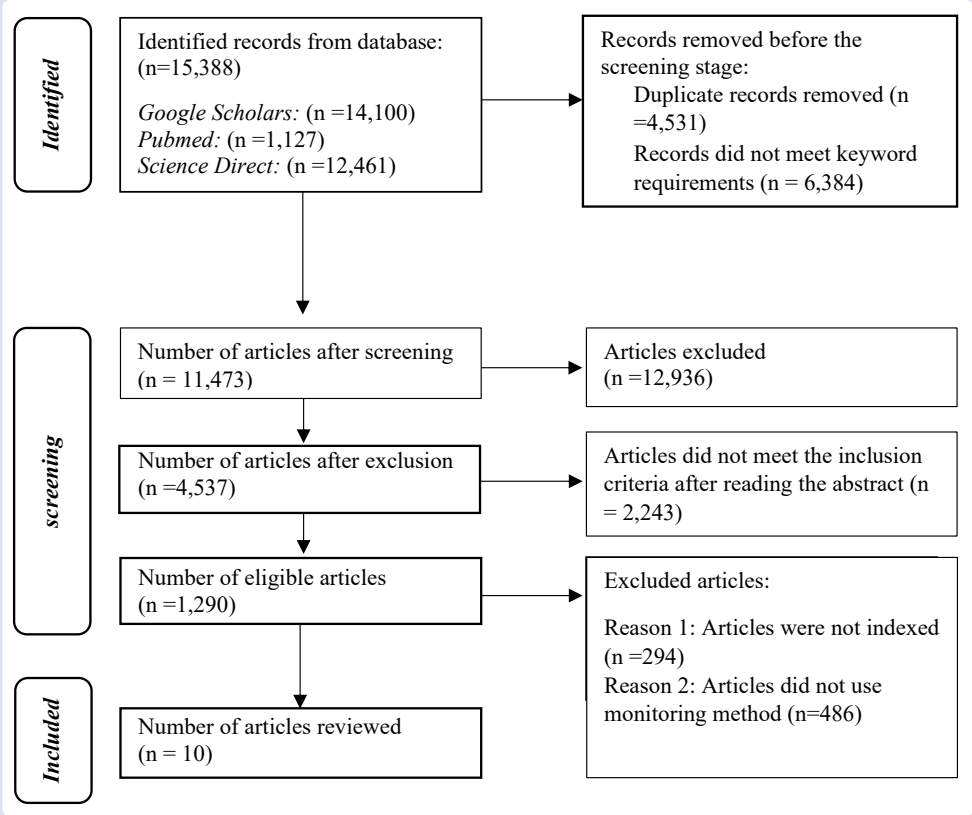

Figure 1. Article selection flow diagram.

Source: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews.

and menstrual problems during preconception are at risk in pregnancy, so it is important to provide preconception care to overcome this. If a woman has a prior medical condition before becoming pregnant it may have a negative impact during pregnancy both on herself and on the fetus.[14]

There are 23 recommendations on preconception care for better management of women of childbearing age in improving the outcome of their conception.[25] Several studies have shown that regular preconception care has a very significant effect on the health of a pregnancy because this period of time plays a very important role in determining the health of the pregnancy.[11] Risks that can occur include, low birth weight, premature birth, impaired growth, preeclampsia, birth defects, and an increased risk of fetal death. Before becoming pregnant, women's preconception care must really get attention and the government must make policies for this.[21] The nutritional status of a woman before pregnancy can affect her fertility and health outcomes of mothers during pregnancy. An unhealthy lifestyle or disease could affect a woman's pregnancy.[24] In preparing for pregnancy, it is important for all women to improve their nutritional status, because low iron levels can lead to anemia and should be considered when a woman is pregnant.[13]

To reduce the risk factors for preterm birth in the United States, intervention during the preconception period is urgently needed to prepare the mother-to-be for pregnancy.[12] A state of anemia in the preconception period greatly affects the pregnancy and the chances of successful implantation of an embryo. Anemia in a woman causes the uterus to be unable to implant an embryo, which may have an effect on fetal development and continue to impact growth in toddlerhood.[22] Increasing severity of anemia predisposed the mother to complications such as miscarriage, premature birth and bleeding. Not only that, but low hemoglobin will also cause the oxygen supply to the fetal brain to decrease, which can affect fetal development.[24]

In India, more than half of women of reproductive age suffer from anemia, resulting in high incidence of bleeding and stunted fetal growth in some areas. Absorption of iron and folic acid on a regular basis can prevent and treat anemia, so supplements should be given not only during pregnancy but during the preconception period too.[19] Fertility disorders and pregnancy problems are experienced by millions of women around the world as a result of poor nutritional status during preconception.[15] Several studies also explored the risk of pregnancy processes among pregnant women starting in preconception.[8]

The health risks experienced in preconception often continue throughout pregnancy.[15] It is therefore necessary to have a consistent lifestyle approach initiated before pregnancy to obtain good nutritional status for strong fetal growth.[16] Advances in technology allow analysis of greater gene selection for screening of preconception carriers.[23] Preconception environmental conditions affect the health and development of babies so that it is necessary to have a healthy environment and a healthy lifestyle during the preconception period.[17,18]

CONCLUSION

In summary, this review shows that continuous preconception care will affect the health of both mother and baby during and after pregnancy. Women of reproductive age should pay attention to their nutritional status from an early age and before pregnancy to overcome health risks so that the baby is born in better health. Anemia that occurs during pregnancy predisposes the fetus to complications that occur during pregnancy and can result in infant death.

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CONFLICT OF INTEREST

During the preparation to the final of writing the manuscript, there is no conflict of interest.

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