

# The Utilization of Preconception Care from Women's Perspectives

Leila Nisya Ayuanda , Muftlillah

*Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta 55293, D.I. Yogyakarta, Indonesia*

## **Abstract**

*Preconception care (PCC) are important things to do before pregnancy. PCC aims to find and change biomedical and social risks to women's health and pregnancy conditions with an optimal early detection strategy. But, women have not seen PCC as important so that the use of PCC by women is still lacking. The purpose of this study is to identify literature related to the perspective of women's reproductive age about the utilization of preconception care. This scoping review adopts the Arksey and O'Malley framework (2005) in five steps. Inclusion criteria are original articles published between 2009-2019 in the English language. The databases used are PubMed, EBSCO, ScienceDirect, Wiley, ProQuest and search engines (Google Scholar). The critical appraisal in this study uses the Joanna Briggs Institute to measure the quality of each article reviewed. The researchers synthesized 12 articles that reviewed the reproductive-age woman's perspective on the utilization of PCC according to the criteria. There are 5 articles from developing countries and 7 articles from developed countries. Four themes found in the study such as the utilization of PCC, the barriers, the source of PCC, and the role of health care provider. Optimizing the preconception will have an impact on the health of the next period, starting on pregnancy to the puerperium. Therefore, a strategy is needed to increase the utilization of preconception care in women's reproductive age. In the implementation, it is necessary to collaborate with various disciplines in interprofessional collaboration (IPC), male participation in PCC and increasing the competency of health workers.*

**Keywords:** *perspective, utilization, preconception care, women's reproductive age*

## **1. Introduction**

The number of women's reproductive age in the world is as much as a quarter of the world's population (26%) [1]. Based on problems in the world, pregnancy in 40% of women is unwanted pregnancies [2]. Women with severe malnutrition and iron deficiency anemia increase risk of maternal death by 20% [3]. 58,000 newborns die of tetanus neonatorum [4] and women under the age of 20 have a 50% risk of perinatal deaths. 10% of premature births and low birth weight infants are caused by mothers with untreated gonococcal infections [3]. Women who experience violence have impacts related to physical, psychological and reproductive health which will increase the risk of prematurity and low birth weight infants [5] and History Smoking habits during pregnancy have an impact on infant mortality due to preterm and sudden infant death syndrome [3].

Complications in pregnancy and childbirth cause the death of mother and baby. In 2017, around 75% of toddler deaths occur in the first year of life [6]. In the same year, 810 women died which could have been prevented due to pregnancy and childbirth problems. As many as 94% of all maternal deaths occur in developing countries [7]. Complications that result in death can be prevented by good pregnancy planning through preconception care (PCC). [8]. Preconception Care can be a preconception health care strategy for women of childbearing age. The aim is to promote reproductive health, early detection and management in women of reproductive age and reduce the risks that affect subsequent pregnancies [9]. Preconception health is the starting point for the development of maternal and child health that can be prepared earlier, even before a woman is pregnant and becomes a mother [8].

The concept of preconception care in developed countries has been developed for 20 years through but many preconception health problems remain unresolved. These problems include

preterm labor, unintended pregnancy, genetic diseases, and unsafe abortion. In addition, the incidence of preterm labor in developed countries is 5-7%, the possibility in developing countries is higher [10].

The process towards preconception care offers an assessment of risk factors and interventions that can benefit women or couples even before pregnancy [11]. In developing countries, the PCC program has not been optimally empowered or even implemented. The country does not provide certainty that pregnancy and childbirth are in good condition. [12].

Based on research from [13], it was found that the use of preconception services is still low by women of childbearing age. The low utilization of PCC lacks evaluation from related parties. Many factors play a role in the low utilization of PCC in Fertile-Age Women. According to [14], supporting factors in the use of PCC in women of childbearing age are family support and information sources. By looking at these problems, this scoping reviews the perspective of women's reproductive age about the utilization of preconception care (PCC).

## 2. Methodology

The scoping review aims to determine differences in some research literature that can be seen and made conclusions. This review should not judge the quality of the articles founded. The framework in this review is explained by [15]. It describes five stages in scoping review. These steps will be explained below.

### 2.1. Stage 1: Identifying of the Review Question

In [15] start with general questions and then become specific. The review question is How are perspective of women's reproductive age about the utilization of preconception care?

### 2.2. Stage 2: Identifying of Relevant Studies

More general research questions are complemented by extensive keyword searches so that you will get a complete article [2]. This review uses 5 databases such as PubMed, Wiley, EBSCO, ScienceDirect and ProQuest. The five databases are used to search for keywords with a combination of keyword search terms that are specifically developed, through the Boolean operator AND, OR, and NOT to facilitate searching (see Table 1). Non-English articles were released and the search year was restricted from January 2009 until December 2019. Totally, 396 titles and abstracts are filtered using convenience tool to find duplicates and not relevant articles. The result was 72 full text articles reviewed.

**Table 1. Searching Terms**

Population	Exposure	Outcomes
"Woman of reproductive age" OR mother*	"Preconception Care" OR "Reproductive life planning"	Perspective OR Utilization OR Practice

### 2.3. Stage 3: Study Selection

Articles screening to ensure relevance using inclusion and exclusion criteria [2]. Based on [15], inclusion criteria were developed systematically in accordance with the review questions. Inclusion criteria are used in the selection of articles such as human subjects, English, original research, articles which discussed the Perspective of women's reproductive age about the utilization of preconception care. Whereas, editorial or opinion articles, articles not full text available, letters as well as book reviews, articles which explored experiences of the health care provider are in the exclusion criteria. After determining the literature according to inclusion and exclusion criteria, 12 articles were found that were relevant to the inclusion criteria (see Figure 1).

The next process is to do a critical appraisal of 12 articles that use the framework of Joanna Briggs Institute (2017). In critical appraisal, the highest score was 94 in Shadab’s study, 2017; while the lowest value is 66 in Asresu’s study, 2019; and the average value is 77.9.

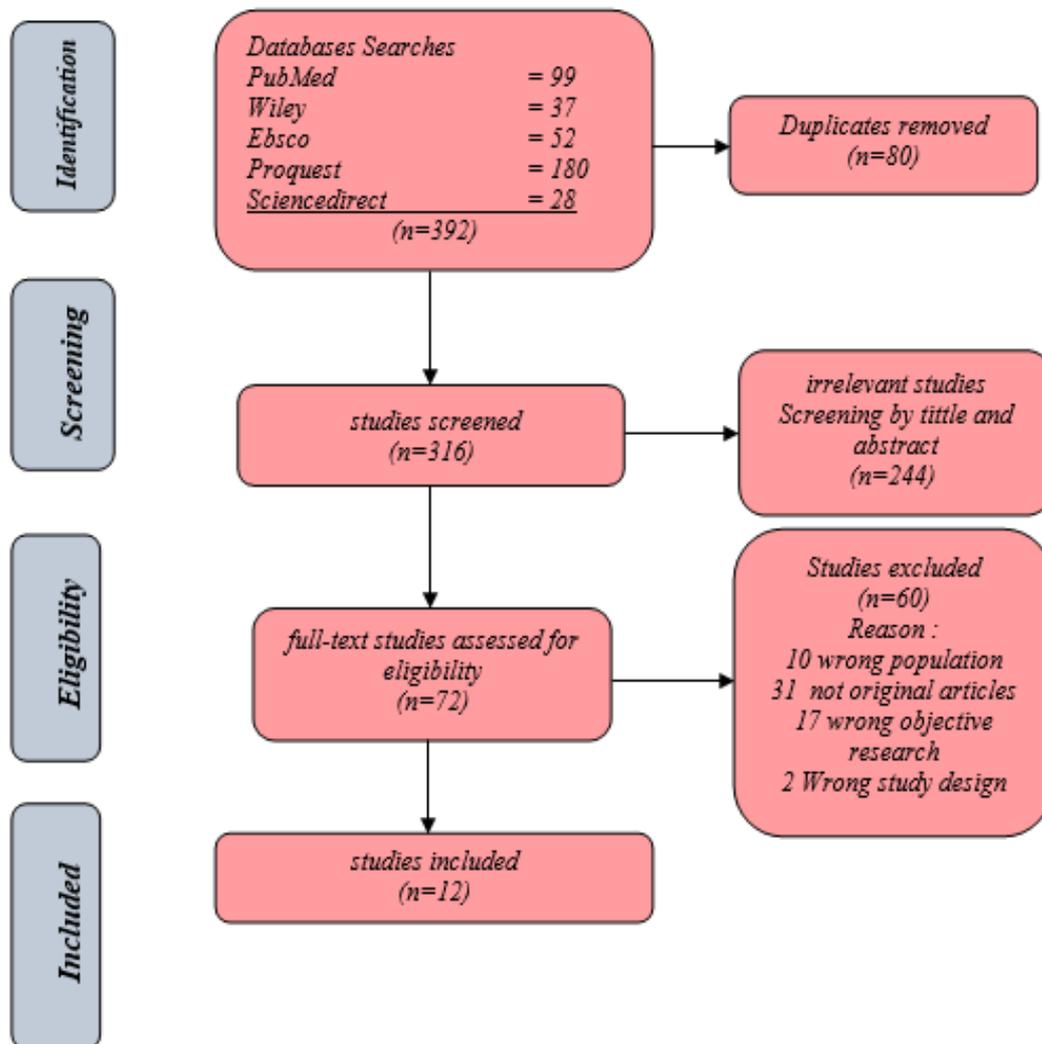


Figure 1. Prisma Flowchart

#### 2.4. Stage 4: Charting the Data

The author collects and sorts key information from selected articles such as the author, year, country, aim of study, sample, study design, and results [2] (see Table 2).

Table 2. Charting Data

No	Author/Year /Country	Study Design/ Sample /Aim of Study	Result
1.	Asresu/2019/ East Ethiopia	Quantitative (Cross-Sectional Study) / 564 postpartum / Knowing the prevalence of PCC utilization in mothers and influencing factors	The most commonly used component of PCC is micronutrient supplementation (iron and folic acid) (86.3%) and the least used is psychological consultation (5.9%). While the factors that influence the use of PCC in women are knowledge, past pregnancy history,

			health problems, and husband's support.
2.	Ayalew/2017 /Ethiopia Barat	Quantitative (Cross-Sectional Study)/422 women of reproductive age/ Assess women's knowledge and related factors in preconception care (PCC)	Women's knowledge about PCC is still low (31.8%) due to relatively little media coverage. Age, education, and history of contraceptive use are factors that influence knowledge about PCC
3.	Beckmann/2014/Australia	Quantitative (Case-Control Study)/224 pregnant women /Comparing preconception health in women planning their pregnancy with PCC exposure to those not exposed	Women who are exposed to PCC are healthier in pregnancy than women who are not exposed. The use of PCC in pregnant women is folic acid, influenza vaccination and hepatitis B, specialist consultations with the aim of optimizing health conditions. In women who are exposed to PCC there is a decrease in the incidence of large of gestational (LGA), gestational diabetes, and fetal anomalies.
4.	Bortolus/2017/ Italia	Qualitative with explorative methods/14 women of reproductive age, 12 health care provider (5 doctors, 3 nurses, and 4 midwives) / Find out the attitudes and behavior of women's reproductive age and health professionals regarding PCC	Many obstacles related to the use of PCC, one of which is the lack of awareness about preconception health. Women's attitudes and behaviors related to preconception health are still minimal. The main source of information is from obstetricians.
5.	Charaf /2015/ Australia	Quantitative (Cross-Sectional Study)/412 Pregnant women / Knowing the factors associated with the use of CAM (Complementary and Alternative Medicine) in women's reproductive age	Herbal / complementary and alternative medicines (not including multivitamins) are used during preconception by women. But stopped when pregnancy occurs. There is no difference (age, education, and income) between herbal users and non-users.
6.	Bayrami /2016/Iran	Quantitative (Explorative Study) with a holistic method phenomenological approach / 27 women and 13 midwives/ Exploring the perceptions and experiences of women and midwives towards gaps in PCC.	<ol style="list-style-type: none"> <li>1. Men and Adolescent are not the target of PCC</li> <li>2. PCC does not have clear rules</li> <li>3. Inadequate PCC strategy</li> <li>4. The competencies of health care providers are still low</li> </ol>

7.	Goossens/2018/ Belgia	Quantitative (Cross-Sectional Study)/ 517 postpartum women/ Exploring preconception lifestyle changes and related factors in pregnancy planning.	Mostly, (83%) planning a pregnancy report $\geq 1$ lifestyle changes in preparing for their pregnancy. Pregnancy preparation is carried out by nulliparous and women with a history of abortion. While women with economic difficulties and low levels of education do not plan for pregnancy.
8.	Harelick/2011/ US	Quantitative (Cross-Sectional Study)/340 reproductive-age women/ Knowing the relationship between knowledge of risk factors for PCC, as well as current health status and behavior among women's reproductive age who are taking PCC	Even though knowledge about risk factors during the preconception is high, risk behaviors are still carried out such as smoking and consumption of vitamins, except immunization and supplement consumption. Pregnancy planning for women is a recommendation from health workers.
9.	Kassa/2019/ Africa	Quantitative (Cross-Sectional Study) / 370 postpartum women / assessing the level of knowledge and attitudes about preconception care (PCC)	Some women have a good level of knowledge and attitude about PCC. Women who have private mobile phones have a positive attitude towards PCC. The main source of information obtained from health institutions and friends.
10.	Poels/2017/ Dutch	Qualitative with phenomenological methods and thematic analysis approaches/5 FGD (29 women and 5 men) / Assessing the partner's perspective on providing PCC.	<ol style="list-style-type: none"> <li>1. Couples of reproductive age have not been exposed to PCC</li> <li>2. The internet is the main source in finding information about PCC</li> <li>3. Men should be more involved in the PCC process</li> <li>4. Couples do not want to share pregnancy planning even with a health provider</li> </ol>
11.	M. Poels/2017/ Dutch	Quantitative (Cross-Sectional Study)/283 reproductive-age women / Knowing the relationship between active pregnancy preparation by women with lifestyle changes during the preconception period.	Most women obtain preconception information independently (60%) and few consult with health professionals (25%). Women who plan their pregnancy will reduce a bad lifestyle such as a healthy diet, smoking cessation, and consumption of folic acid.
12.	Shadab/2017/ Iran	Quantitative (Cross-Sectional Study) / 702 reproductive-age women / to determine the relationship between the prevalence of preconceptional care with female fertility and the	<ol style="list-style-type: none"> <li>1. There is a significant relationship between education level, income, desired pregnancy, number of pregnancies, and previous individual deliveries with preconception care</li> <li>2. The main reason for the lack of examination for preconception</li> </ol>

		causes of the lack of preconception examination in women	care is unplanned pregnancy.
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### 3. Results and Analysis

Twelve studies are included in this review: three qualitative studies, and nine quantitative studies. 9 studies focused on the fertile-age women’s perspective, 2 described fertile-age women’s perspective and the health provider perspective, and one described a couple of reproductive age. The source of 6 articles is from PubMed, 4 articles from EBSCO, 2 articles from Wiley, and 1 article from ScienceDirect. The research setting from developing countries is Ethiopia (2 articles), Africa (2 articles), and Iran (2 articles). While from developed countries, there are Australia (2 articles), US (1 article), Dutch (2 articles), Italia (1 article), and Belgia (1 article). The division of these types of countries based on the data from WHO [3] (see Figure 2). Selected articles contained 3 articles using qualitative designs and 9 articles using quantitative designs (see Figure 3). The majority of research on scoping review is carried out in developed countries. It is possible because the PCC program in developed countries has been run so it needs evaluation in the implementation of PCC. While, the design study used is the heterogeneous research design. It can produce main data with strong supporting data so that it can explain the purpose of this review.

Scoping review studies consist of various types of literature that are further reviewed with a certain scope as a literature mapping technique that is relevant in certain fields [4]. Based on the 12 synthesized articles, there are 4 theme mappings such as the utilization PCC, the barriers, Source of PCC, and Role of health care provider.

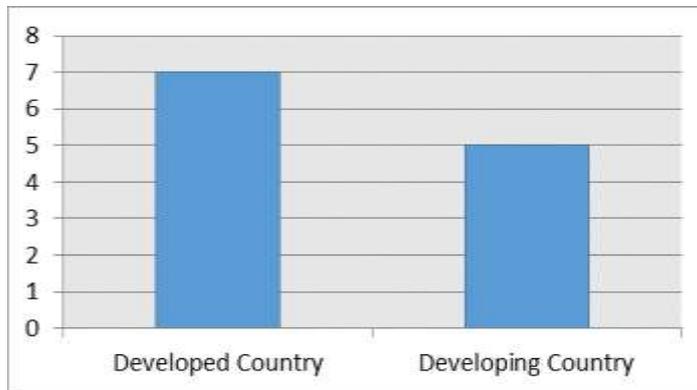


Figure 2. Characteristics of articles based on type of country

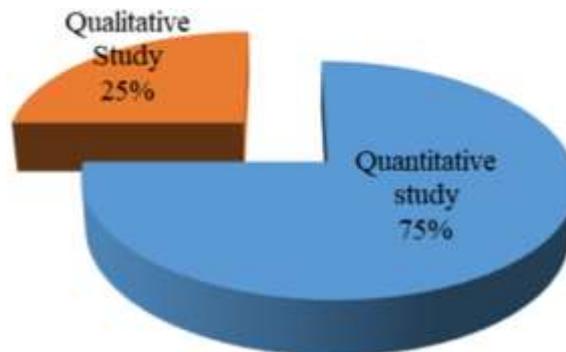


Figure 3. Characteristics of articles based on research methods

## 4. Discussion

### 4.1. Utilization of PCC in Women of Reproductive Age

The PCC package that is often used by women is the consumption of supplementation (iron and folic acid) [13] [18]-[20]. Whereas, the most rarely used is psychological health [13]. Nulliparous women (who have never given birth) who take supplementation know that before pregnancy they must consume folic acid, but they do not understand the benefit, dosage, and time [19], [21]. The most important factor of the lack of use of folic acid before pregnancy is due to the lack of pregnancy planning and awareness of the need for folic acid [22]-[23]. Some women even use herbal medicines other than multivitamins that doctors did not prescribe during the preconception [24].

Preconception services cause women planning a pregnancy to change their lifestyle, such as reducing risky foods, losing weight, stopping smoking, and reducing alcohol consumption [20]-[21]. This is supported by other studies that the most important recommendation on PCC is weight status because it can have a great influence on mothers and newborns [21], [25]. Women who change their preconception lifestyle are a higher education, nulliparous, adequate financial, and have a history of previous miscarriages [20]-[21], [26]. And in some cases, women tend not to want genetic screening [25].

### 4.2. The Barriers of Women's Reproductive Age in the Use of PCC

Women's awareness that PCC are very important is still minimal. So, we need a special strategy in increasing women's awareness about PCC. Women who are aware of PCC will benefit from PCC [13], [20]. However, only a few women go to a general practitioner (General Practice) or Obstetrician-Gynecologist to get PCC in planning their pregnancy [21], [27]. So, the main reasons for the lack of utilization of PCC are due to an unplanned pregnancy and lack of awareness to visit the clinic before pregnancy [13], [20], [22].

The second obstacle is the lack of knowledge about PCC. The existence of a woman's awareness but not accompanied by good knowledge makes her awareness have no results and vice versa. Because these two things are related to each other. Knowledge about preconception care has a significant relationship with PCC utilization. Internal factors such as age, education, and history of contraceptive use are factors that influence knowledge about PCC [13], [28]. Low knowledge is likely due to low coverage [28].

Internal factors can affect the use of PCC services, so special efforts are needed in dealing with internal factors, especially women's psychological factors. Appropriate points out that there is a relationship between the education, income, desired pregnancy, number of pregnancies, and previous individual deliveries with preconception care. An increase in the level of education of women causes greater awareness about the importance of health services [13], [29], [22].

The next obstacle is partner support. Only a few (28.3%) women have partner support to utilize PCC and discuss pregnancy planning with partners [13]. The statement was added from other studies that the absence of men in PCC affects the lack of male participation in pregnancy planning [22], [27].

Basically, even though knowledge and awareness are high on PCC, if access to these services is less than optimal, it will also make utilization low. Lack of women's access to PCC and the high cost of PCC services on health workers have an impact on the low utilization of PCC services [13], [19].

Every pregnancy should have good planning, namely by carrying out a process of preconception care with trained health workers. Barriers to the utilization of PCC are poor pregnancy planning, lack of perceived risk, and low awareness about PCC [26]. Pregnancy planning must be done by motivating women to collect preconception health information [20].

### **4.3. Sources of Information About PCC**

In this digital era, media is the main thing that needs to be realized as a tool to facilitate business, especially health. Any information can be easily accessed practically and easily. Some women use the internet to find information about conception health. The internet is the second most widely used source for access to information about preconception health [26]. But according to other research, the Internet is the main source in finding information about PCC [30].

Low sources of information in developing countries result in low knowledge [28]. The barriers of utilization in PCC are due to the lack of promotion of preconception care by the mass media, and the low service from health workers due to the large number of patients [31].

Some women assume that the main source of reference information about preconception health is OB-GYN, followed by general practitioners. The role of midwives and nurses is lacking [21]. PCC consultation with health workers increases the likelihood that women will change their lifestyles positively before pregnancy [20].

### **4.4. The Role of Health Care in PCC According to Women of Reproductive Age**

Health workers are a leading professional in health issues, especially reproductive health. The optimal role of health workers can foster women's interest and awareness of a healthy reproductive life. Midwives are one of the health professionals who provide preconception services because they are given training in screening and preventive care related to pregnancy for women and couples. From a women's perspective, midwives are good health workers for preconception services. But, in reality, midwife's knowledge, attitudes and skills are still low [30].

Midwives as the front guard should conduct counseling about PCC according to the needs of each client, so there is a need for training in PCC counseling skills for health workers, especially midwives. Midwives are thought to only know how to fill out forms and are not responsible for the care they provide [27]. Many women who are dissatisfied with health care services are associated with poor performance and poor emotions. Next from the perception of women, they admit that midwives only provide folate supplementation without giving any explanation about the vitamin.

Based on several articles found, the low utilization of preconception services due to the quality of preconception care services is not optimal [13]. Often health workers do not offer spontaneously, but only when asked by patients, sometimes health workers have time constraints [21].

## **5. Conclusion**

Preconception care (PCC) is a strategy in providing biomedical, behavioral and social interventions before conception in reducing risk factors that result in maternal and child mortality. Based on the article found, preconception care services are widely used by women of childbearing age in Developed Countries. This is possible because of adequate internal factors of women supported by adequate preconception services. Very little research has been published on the use of preconception services in developing countries. The problem faced by several article reviews, namely the lack of use of PCC due to suboptimal services from midwives, husband support, inadequate access to services. Therefore, strategies are needed to increase the use of PCC in women of childbearing age such as male participation in PCC, increasing midwife competence, implementing interprofessional collaboration (screening not only physical but also psychological), and increasing PCC access.

Several of the limitations of this study is that many articles were not included due to some limitations in the use of accessible databases. This causes some articles that may be relevant not found. There have been many published researches on preconception care, those focusing on the

perspective of women's reproductive health is still limited. However, there are some strengths of this research, which include the preparation of scoping by using a framework based on theory and the quality assessment in each article reviewed.

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