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# Preconception Health Behavior Patterns and Their Relationship with Women's Reproductive Health in the Cibatu District, Purwakarta

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Preconception, reproductive health, women of childbearing age

**ABSTRACT**
Good preconception health behaviors are an important step in preparing for a healthy pregnancy and optimizing a woman's reproductive health. However, many women of childbearing age have not implemented adequate preconception behavior patterns. The objective of this research is to identify the pattern of preconception health behavior among women of childbearing age and the relationship between these behaviors and reproductive health status in *Kecamatan* Cibatu, Purwakarta. This study used quantitative research with a cross-sectional design. A sample of 100 women of childbearing age (20–35 years) was selected using purposive sampling techniques. Data were collected through questionnaires on preconception behaviors (nutritional intake, physical activity, health checks, and lifestyle), as well as reproductive health records. Data analysis employed the Pearson correlation test and logistic regression. Results show that most respondents (60%) had moderate, 25% had good, and 15% had poor preconception behavior. There was a significant positive association between preconception health behaviors and reproductive health status ($p = 0.002$, $r = 0.421$). Good preconception health behavior patterns are closely related to women's reproductive health.



## INTRODUCTION

Reproductive health is a critical component of public health, particularly for women of childbearing age (*WCA*). The preconception period—defined as the time before pregnancy—is considered a decisive phase in preparing a woman's physical, psychological, and social readiness for a healthy pregnancy. During this stage, adopting preventive health behaviors such as routine medical checkups, balanced nutritional intake, avoidance of harmful substances (alcohol, cigarettes, and drugs), and deliberate pregnancy planning play a pivotal role in reducing maternal and neonatal risks. Ensuring optimal preconception health contributes not only to safer pregnancies but also to healthier birth outcomes and an improved quality of life for both mother and child (Kumalasari et al., 2020; Leight et al., 2023; Melani & Barokah, 2020).

In the Indonesian context, awareness and practice of preconception health remain relatively low compared to other countries. Many women of childbearing age still underestimate the importance of maintaining health before conception, often seeking medical attention only after pregnancy is confirmed. This lack of early preparation has direct implications for maternal and child health, contributing to an increased risk of pregnancy complications, high-risk deliveries, and

even maternal and infant mortality. According to the Ministry of Health, Indonesia continues to record high maternal mortality rates, with contributing factors such as anemia, poor nutritional status, and limited access to preconception health services (Pradono et al., 2020; Sari, Andarini, & Rokhmah, 2019; Sari, Wulandari, & Laksmi, 2020).

The persistence of these challenges highlights the urgent need for comprehensive preconception health interventions in Indonesia. Despite various maternal health programs, most initiatives focus primarily on antenatal and postnatal care, leaving the preconception phase inadequately addressed (Benedetto et al., 2024; Busnelli et al., 2022; Ernawati et al., 2023; Khekade et al., 2023). This gap suggests that maternal and infant health outcomes cannot be sustainably improved without strengthening preconception health education and services. Evidence from global studies demonstrates that early interventions targeting women before pregnancy significantly reduce complications, improve maternal outcomes, and contribute to lowering infant mortality rates.

Several barriers impede the implementation of effective preconception health programs. These include limited knowledge among women, sociocultural perceptions that downplay the importance of preconception readiness, economic constraints, and uneven distribution of healthcare facilities, especially in rural areas. Furthermore, the lack of tailored health promotion strategies makes it difficult to reach women of reproductive age with appropriate information and support. Addressing these barriers requires collaboration between healthcare providers, policymakers, and community stakeholders to design and implement culturally relevant and accessible preconception health interventions.

Existing literature underscores the promise of preconception education in improving maternal knowledge and potentially enhancing pregnancy outcomes, but notable gaps persist in the Indonesian setting. For example, Priani, Afiyanti, and Kurniawati (2019) implemented a quasi-experimental pre-post design with a control group in West Java, finding that preconception education significantly increased knowledge regarding physical health ($p < 0.001$), nutrition ($p < 0.001$), and lifestyle ($p < 0.001$) among unmarried women preparing for pregnancy. While impactful, this study was limited to knowledge gains and did not examine whether these translated into behavioral changes or improved pregnancy planning. Similarly, Suto et al. (2025), in a systematic review of global preconception behavior change interventions, reported that strategies such as individual education, group sessions, online education, and information campaigns generally improved behavioral change, knowledge, and some health outcomes—but highlighted that the evidence lacked breadth in addressing mental and social health domains and rarely targeted Indonesian women specifically.

Given these conditions, this study emphasizes the importance of analyzing preconception health behaviors among women of childbearing age in Indonesia. By exploring their level of knowledge, attitudes, and practices, this research aims to identify gaps that hinder optimal preconception care. This study seeks to provide evidence-based recommendations for the design of effective, culturally tailored preconception health interventions in Indonesia. Its significance lies in informing national health policy and programming to support healthier pregnancies and reduce maternal and neonatal risks by fostering both understanding and actionable behavior before conception. The findings are expected to provide valuable insights for policymakers and health practitioners in formulating evidence-based strategies that can improve women's health prior to pregnancy. Ultimately, the study seeks to contribute to the reduction of maternal and infant morbidity and mortality while fostering healthier generations in the long term.

## METHOD

This study uses an analytical quantitative design with a cross-sectional approach to determine the relationship between preconception health behavioral patterns and women's reproductive health. Data on preconception behavior and reproductive health status were collected simultaneously at one point in time. The population consisted of all women of childbearing age (*WUS*) aged 20–35 years who live in *Kecamatan* Cibatu, Purwakarta. The independent variables were preconception health behavior patterns, including nutritional intake, physical activity, health checkups, stress management, and lifestyle. The dependent variable was reproductive health status, which included history of menstrual cycles, reproductive infections, and reproductive health checkups. Univariate analysis was used to describe the frequency distribution of respondent characteristics and preconception behavioral scores. Bivariate analysis employed Pearson's correlation test to examine the relationship between preconception behavior and reproductive health. Multivariate analysis used logistic regression to control for confounding variables. The significance level was set at $p < 0.05$.

## RESULTS AND DISCUSSIONS

The results of this study involving 100 women of childbearing age (20–35 years) in Cibatu District indicate that preconception health behaviors are strongly associated with reproductive health status. Most respondents were aged 26–30 years (48%), had a high school education (62%), and were housewives (55%), with the majority having been married for more than two years (68%). Behavioral assessments showed that only 25% of women practiced good preconception health behaviors, while the majority (60%) fell into the medium category, and 15% were categorized as poor. This distribution suggests that awareness and implementation of preconception health practices in the community remain suboptimal, despite their recognized importance for maternal and reproductive outcomes.

The reproductive health outcomes observed further highlight this trend. Approximately 70% of respondents reported regular menstrual cycles, indicating relatively stable reproductive health, while 30% experienced significant complaints such as severe dysmenorrhea and recurrent vaginal discharge. The Pearson correlation analysis revealed a moderate positive association between preconception health behaviors and reproductive health status ($r = 0.421$; $p = 0.002$). This finding demonstrates that women who actively engage in positive preconception behaviors—including balanced nutrition, folic acid supplementation, routine medical checkups, and avoidance of harmful habits—are more likely to achieve better reproductive health outcomes. These results support previous studies emphasizing the role of preventive behaviors in reducing the risk of infertility, pregnancy complications, and maternal morbidity (Dean et al., 2014; Stephenson et al., 2018).

**Table 1. The Relationship of Preconception Behavior Patterns with Reproductive Health Status**

| Preconception Behavior Patterns | Good Reproductive Health | Poor Reproductive Health | Total |
|---|---|---|---|
| Good | 23 | 2 | 25 |
| Moderate | 38 | 22 | 60 |
| Poor | 9 | 6 | 15 |

Table 1 illustrates this relationship more concretely. Among women with good preconception behaviors, 92% reported good reproductive health, compared to 63% in the medium group and only 60% in the poor behavior group. This gradient pattern reinforces the idea that even incremental improvements in health behavior can lead to better reproductive outcomes. Similar findings have been documented by Mason et al. (2014), who found that preconception counseling and nutritional interventions significantly lowered the incidence of reproductive health complaints among women of reproductive age. In the context of this study, the influence of education level, access to accurate health information, and family support emerged as critical determinants shaping women's health behavior. Women with higher education levels and stronger family support networks were more likely to adopt proactive preconception health practices, aligning with evidence from global maternal health literature.

However, several limitations must be acknowledged. The use of a cross-sectional design restricts the ability to infer causality between behavior and reproductive health outcomes, as both may be influenced by unmeasured confounding factors such as socioeconomic status or access to healthcare services. Furthermore, reliance on self-reported questionnaires raises the risk of reporting bias, as respondents may overstate healthy behaviors or underreport risky practices due to social desirability. Previous research has highlighted the need for longitudinal studies to establish causality and assess the long-term effects of preconception interventions on pregnancy and neonatal outcomes (Johnson et al., 2013; Barker et al., 2018). Addressing these methodological limitations in future research would strengthen the evidence base and provide more definitive conclusions.

The implications of this study are highly relevant for public health practice. Strengthening preconception education through local health centers (puskesmas) and community health posts (posyandu) could raise awareness and improve women's readiness for pregnancy. Tailored interventions that incorporate culturally sensitive education, nutritional counseling, and family involvement are likely to be more effective in shaping positive behaviors. In addition, empowering healthcare providers with training on preconception counseling could ensure that information is consistently and accurately delivered. By institutionalizing preconception health education within community health programs, policymakers and practitioners can contribute to reducing maternal and infant morbidity while promoting healthier pregnancies and families in Indonesia.

## CONCLUSION

This study shows that preconception health behavior patterns are positively and significantly related to the reproductive health of women of childbearing age in *Kecamatan* Cibatu, Purwakarta. Women with good preconception behaviors—such as maintaining nutritional intake, attending regular health checkups, and adopting a healthy lifestyle—have better reproductive health status, including regular menstrual cycles and fewer reproductive complaints. These results confirm the importance of preconception behavioral education and interventions to improve reproductive health and prevent disorders that can affect pregnancy readiness.

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