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Preconception midwifery care for women of reproductive age

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Abstract

Background: Preconception care is an essential strategy to improve women's health status before pregnancy to prevent maternal and neonatal complications.

Purpose: to describe the implementation of midwifery care during the preconception period among women of reproductive age.

Method: This research used a case study design with a continuity-of-care approach, involving four clients (Ms. F, Ms. I, Ms. M, and Ms. L) selected through purposive sampling.

Results: Variations in preconception health status, ranging from optimal conditions to the presence of risk factors such as hypertension, obesity, and chronic energy deficiency. The care provided included health screening, education, lifestyle modification, blood pressure control, stress management, nutritional improvement, supplementation, and immunization. Evaluation indicated improvements in knowledge and positive behavioral changes toward healthier lifestyles, although some risk factors still required ongoing monitoring.

Conclusion: In conclusion, comprehensive, continuous preconception midwifery care plays an important role in improving women's physical, psychological, and social readiness before pregnancy.

Suggestion: Strengthening preconception services through screening and early detection of risk factors is necessary to achieve healthy and high-quality pregnancies.

Keywords: Midwifery Care; Preconception; Women of Reproductive Age.

INTRODUCTION

Preconception care is a crucial component of reproductive health services, focusing on preparation before pregnancy. During this phase, a woman's physical, psychological, and social health needs to be optimized to support a healthy pregnancy and minimize the risk of future complications (Khekade, Potdukhe, Taksande, Wanjari, & Yelne, 2023). Interventions during the preconception period are strategic because various risk factors, such as anemia, chronic energy deficiency, hypertension, and low knowledge about reproductive health, often emerge before pregnancy (Lassi, Kedzior, Tariq, Jadoon, Das, & Bhutta, 2020).

Efforts to improve health during the preconception period not only impact the mother but also contribute

to the health of the fetus and unborn baby. Optimal preconception care includes health status assessment, education, and promotive and preventive interventions, such as balanced nutrition, chronic disease management, immunization, and the adoption of a healthy lifestyle. Thus, preconception care plays a crucial role in reducing the risk of pregnancy complications, such as preeclampsia, preterm labor, and low birth weight (Benedetto, Borella, Divakar, O'Riordan, Mazzoli, Hanson, 2024; Kartchner, Dunn, Taylor, Ali, Manning, Dajani, & Magann, 2025).

Maternal and infant health issues remain a priority at both the global and national levels. The relatively high maternal and infant mortality rates indicate that

health interventions are not yet fully optimized, particularly in the pre-pregnancy phase. Many women of childbearing age do not fully utilize preconception health services and tend to only access them after pregnancy. This situation leads to delays in the detection and treatment of preventable risk factors (Mallongi & Sulaiman, 2023).

At the regional level, including in the Alai Community Health Center in Padang City, similar problems are still encountered. Women of childbearing age still have limited knowledge about the importance of pregnancy preparation, particularly regarding health monitoring, nutritional needs, and understanding the fertile period. This lack of information potentially increases the risk of problems during pregnancy. Based on observations during field practice, many expectant mothers still do not receive comprehensive preconception education, necessitating efforts to improve more targeted and sustainable services.

Based on this description, comprehensive preconception midwifery care is crucial as a first step in improving maternal and infant health. This study aims to describe the implementation of preconception midwifery care in the Alai Community Health Center in Padang City as part of efforts to improve the quality of maternal health services.

RESEARCH METHOD

This study employed a case study design with a continuity of care approach during the preconception period. The population comprised all women of childbearing age or prospective brides within the Alai Community Health Center working area in Padang City in 2025. The sample consisted of four clients: Ms. F, Ms. I, Ms. M, and Ms. L. They were selected using purposive sampling based on the criteria of women of childbearing age preparing for pregnancy and willing to participate in the study. The research method employed a descriptive approach, implementing comprehensive midwifery care management, encompassing assessment, diagnosis, planning, implementation, and evaluation. Care was provided continuously through direct visits to health facilities and home visits to monitor the progress of clients' conditions and the effectiveness of interventions.

Data collection adhered to ethical research principles, including providing informed consent to respondents and ensuring the confidentiality of data

and client identities. The tools used in this study included basic health examination kits and assessment instruments to support data collection and monitoring of clients' conditions during the preconception period. The instruments used included a data assessment sheet to obtain subjective and objective information, as well as a SOAP (Subjective, Objective, Assessment, Planning) documentation format for systematically recording care outcomes. Materials used in this study included educational media in the form of leaflets or posters, which were utilized to provide communication, information, and education (IEC) during preconception care.

Subjective and objective data were collected through history taking, physical examination, and supporting tests. The assessment includes medical history, nutritional status, vital signs, and identification of risk factors during the preconception period. The Obstetric Diagnosis stage, in which the data obtained is analyzed to establish an obstetric diagnosis based on the client's condition and problems during the preconception period. The Care Planning stage, in which a care plan is developed based on the client's needs, encompassing promotive, preventive, and educational efforts, such as nutritional counseling, immunizations, and preparation for a healthy pregnancy. The Care Planning stage, in which care is provided directly to the client in the form of a health examination, education on reproductive health and a healthy lifestyle, immunizations, and guidance on fertility monitoring. The Evaluation stage, in which the client's response after care is assessed, includes the level of understanding, behavioral changes, and compliance with recommendations. The Documentation stage, in which the entire process and outcomes of care are systematically documented using the SOAP (Subjective, Objective, Assessment, Planning) format at each visit. Care is provided continuously through multiple visits, both at the health care facility and at home, within a predetermined time period.

RESEARCH RESULTS

Preconception midwifery care for Ms. F indicates that the client came to the Alai City Health Center in Padang to prepare for marriage and plan a pregnancy, but had never received a comprehensive preconception examination or education. The results of the initial assessment found that the client's

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general condition was in good condition with compensatory awareness. However, several health risk factors were found, namely blood pressure of 140/101 mmHg which was included in the hypertension category and nutritional status with a body mass index (BMI) of 41.85 kg/m² which was classified as severe obesity. Apart from that, clients also experience irregular menstrual cycles and disturbed sleep patterns.

Preconception midwifery care for Ms. F is focused on efforts to control risk factors through balanced nutritional counseling, education on menstrual cycle monitoring, improving lifestyle, and managing stress and sleep patterns. Clients are also given education regarding preparation for a healthy pregnancy, including the importance of immunizations, routine health checks, as well as physical and psychological readiness before pregnancy.

At the follow-up visit, the evaluation results showed positive behavioral changes. Clients begin to adopt a balanced nutritional diet, do light physical activity, record menstrual cycles, and reduce salt consumption. However, the results of the examination showed that blood pressure was still in the high category, requiring continuous monitoring and intervention. Other problems that were still found at the second visit were disturbances in sleep patterns and stress management. Therefore, further education is provided regarding the importance of adequate rest, managing sleep patterns, and stress management techniques. Overall, Ms. F shows good understanding of the material provided, characterized by the ability to repeat information and a willingness to apply recommendations.

Preconception midwifery care for Ms. I indicates that the client visited for a health check and preparation for pregnancy after planning the wedding, with the aim of finding out her health condition before becoming pregnant. From the results of the assessment, the client's general condition was in good condition with compensatory awareness and no health complaints were found. Regular menstrual cycle, and no history of chronic disease. However, the examination results showed diastolic blood pressure approaching the high limit and nutritional status with a body mass index (BMI) of 25.3 kg/m² which was included in the mild overweight category.

The midwifery care provided is focused on promotive and preventive efforts through

preconception health education, delivery of examination results, and counseling related to weight control, healthy eating patterns, and physical activity. Apart from that, clients are also given Tetanus Toxoid (TT) immunization as part of pregnancy preparation. On the return visit, the evaluation results showed that the client's general condition remained good without complaints, but blood pressure still needed to be monitored regularly. Clients show positive behavioral changes, such as starting to improve their diet and paying more attention to the type of food they consume. Apart from that, clients also receive further education regarding preparation for a healthy pregnancy, including physical, psychological and social aspects.

The evaluation of care outcomes indicated an increase in the client's knowledge and awareness of the importance of preconception health, as well as behavioral changes toward a healthier lifestyle. However, ongoing monitoring and care are still needed to optimize her health before pregnancy.

Ms. M's preconception midwifery care demonstrated that the client attended a visit to prepare for marriage and pregnancy, with the goal of obtaining preconception health information and services. Based on the assessment, the client was in good general condition, with a composmentis awareness and no health complaints. Vital signs were within normal limits, and nutritional status was normal, with no anemia detected. Her menstrual cycle was regular, and supporting examination results indicated optimal health for pregnancy.

The midwifery care provided focused on promotive efforts through preconception health education, including tetanus toxoid (TT) immunization, self-care, and efforts to address minor complaints such as menstrual pain. Additionally, the client was provided with education on personal hygiene and reproductive health as part of preparing for a healthy pregnancy. At the follow-up visit, the evaluation indicated that the client had no complaints and had implemented most of the education provided. Her health remained within normal limits, with stable vital signs. The client also demonstrated a good understanding of the educational materials, including those related to balanced nutrition and pregnancy preparation.

The results of the care indicated that the client was in good health and had no risk factors during the

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preconception period. The midwifery care provided played a role in maintaining her health and enhancing her physical, mental, and behavioral readiness before pregnancy.

Preconception midwifery care for Ms. L indicated that the client visited to assess her health in preparation for pregnancy. The assessment revealed that the client was in good general condition with a composmentis awareness, but several health risk factors were identified. The examination revealed a blood pressure of 140/93 mmHg, categorized as hypertension, and a nutritional status of 17.33 kg/m² and a mid-upper arm circumference indicating Chronic Energy Deficiency (CED).

The midwifery care provided focused on promotive and preventive efforts through the delivery of examination results, the administration of Tetanus Toxoid (TT) immunization, and education related to blood pressure control and nutritional improvement. The education provided included establishing a balanced nutritional diet, increasing energy and protein intake, limiting salt consumption, and adopting a healthy lifestyle. At the follow-up visit, the evaluation showed that the client's general condition remained good, but her blood pressure remained within the hypertension category, requiring ongoing monitoring. The client demonstrated an increased understanding of her health condition and the importance of adopting a healthy lifestyle. Furthermore, the client received further education regarding preparing for a healthy pregnancy, including physical, psychological, and social aspects.

The evaluation revealed an increase in the client's knowledge and awareness of the importance of preconception health. However, her hypertension and nutritional status, which remained at risk, indicated that ongoing care was necessary to achieve optimal health before pregnancy.

DISCUSSION

Midwifery care for four clients showed that preconception health conditions varied, ranging from no risk factors to multiple risk factors that could potentially impact the pregnancy. Ms. F and Ms. L were found to have significant risk factors, namely hypertension and nutritional status issues (obesity in Ms. F and Chronic Energy Deficiency/CED in Ms. L). Meanwhile, Ms. I was at a mild risk of being overweight, and Ms. M was in optimal health with no

risk factors. This variation confirms that the preconception period is a crucial period for conducting comprehensive health screening to identify risk factors early as a basis for appropriate management (Agusta & Astuti, 2025).

Preconception health screening is an essential component of reproductive health services because it allows for early detection of medical conditions, nutritional status, and other risk factors that could impact pregnancy (Hristova-Atanasova, Micallef, Stivala, Iskrov, & Gyokova, 2025). Examinations such as blood pressure measurements, nutritional status assessments, hemoglobin tests, and screening for infectious and chronic diseases provide an initial picture of a woman's readiness for pregnancy. The Indonesian Ministry of Health and the WHO confirm that interventions carried out before pregnancy are more effective in reducing maternal and infant morbidity and mortality than interventions carried out after pregnancy (World Health Organization, 2014; Ministry of Health of the Republic of Indonesia, 2021). This aligns with the findings of this study, where identifying hypertension, obesity, and chronic energy deficiency syndrome (CED) during the preconception stage allows for earlier intervention before these conditions impact the pregnancy.

The hypertension found in Ms. F and Ms. L is a major risk factor that needs to be controlled preconceptionally. This condition can persist throughout pregnancy and increase the risk of preeclampsia, fetal growth restriction, and preterm delivery. Pathophysiologically, uncontrolled blood pressure can disrupt uteroplacental perfusion, thereby impacting the supply of oxygen and nutrients to the fetus. Therefore, management focuses on lifestyle modifications, such as a low-salt diet, increased physical activity, and regular blood pressure monitoring. This approach is in accordance with recommendations for hypertension management during the preconception period which prioritize non-pharmacological interventions as the initial step (Beech & Mangos, 2021; Luger & Kight, 2022).

The issue of nutritional status is the main concern in this research. At Ms. L with KEK, intervention focuses on increasing body weight through improving nutritional intake. The care provided includes education on consuming foods high in energy and protein, increasing meal frequency, and choosing balanced nutritious foods. The theory states that

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gradual increase in body weight through adequate and quality calorie intake can improve the body's energy reserves and support pregnancy readiness. Nutritional interventions during the preconception period have been proven to be more effective in improving nutritional status than if carried out after pregnancy occurs (Saville, Dulal, Miller, Schoenaker, Chowdhury, Hazra, & Sethi, 2025).

In contrast, Ms. F and Ms. I have a BMI above normal, care is focused on weight loss through diet and physical activity. Diet education includes reducing excess calorie intake, limiting consumption of fat, sugar and salt, and increasing consumption of fiber from vegetables and fruit. In addition, regular light to moderate physical activity is recommended, such as walking or aerobic exercise. In theory, the combination of a balanced diet and physical exercise has been proven to be effective in losing weight, improving insulin sensitivity, and balancing reproductive hormones. A weight reduction of 5-10% in women with obesity is known to increase ovulatory function and the chance of pregnancy (Belan, Harnois-Leblanc, Laferrère, & Baillargeon, 2018; Malhotra, de Paredes, JSmith, Chemerinski, Doshi, & Morelli, 2025).

Apart from nutritional and physical aspects, preconception supplementation is also an important part of care. WHO recommends folic acid supplementation to prevent neural tube defects and iron to prevent anemia. Other micronutrients such as calcium, vitamin D, and iodine also play a role in supporting maternal health and fetal development. Providing supplements from the preconception period has been proven to be more effective in improving nutritional status than if given after pregnancy occurs (Parisi, Di Bartolo, Savasi, & Cetin, 2019; World Health Organization, 2023).

Preconception midwifery care also includes psychological and behavioral aspects. Education regarding stress management, sleep patterns, and mental readiness are important parts in increasing pregnancy readiness. Sleep disorders and stress, as found in Ms. F, can affect hormonal balance and reproductive health. Non-pharmacological interventions such as deep breathing relaxation techniques are also given as an effort to reduce stress. Research shows that deep breathing exercises done regularly can increase relaxation, reduce anxiety, and improve the body's physiological

balance, making it beneficial during the preconception period (Bentley, D'Andrea-Penna, Rakic, Arce, LaFaille, Berman, & Sprimont, 2023; Qardhawijayanti, Hulu, & Nuraskin, 2025).

Overall, the research results show that preconception midwifery care carried out through health screening, controlling risk factors, improving nutritional status, providing education, relaxation techniques, and supplementation has a positive impact on increasing pregnancy readiness. The continuity of care approach allows for continuous monitoring of the client's condition so that interventions can be tailored to each individual's needs. Thus, comprehensive preconception services are an important strategy in achieving a healthy, safe and quality pregnancy.

CONCLUSION

The preconception midwifery care provided to Ms. F, Ms. I, Ms. M, and Ms. L demonstrated that pre-pregnancy health screening can identify various conditions that affect pregnancy readiness, ranging from high-risk factors such as hypertension and nutritional disorders to conditions without risk. Comprehensive interventions, including health education, lifestyle improvements, blood pressure control, stress management through relaxation techniques, diet and physical activity management, improving nutritional status in cases of CED, and preconception supplementation, have been shown to increase clients' knowledge, awareness, and behavioral changes toward healthier outcomes. The continuous midwifery care approach allows for consistent monitoring of conditions so that interventions can be tailored to each client's individual needs. Therefore, preconception midwifery care plays a crucial role in optimizing the physical, psychological, and social well-being of expectant mothers in an effort to achieve a healthy, safe, and high-quality pregnancy.

SUGGESTION

Preconception care needs to be enhanced as a crucial part of reproductive health services for women of childbearing age through screening and early detection of risk factors before pregnancy. This effort can be achieved through routine health check-ups, nutritional assessments, and education related to healthy lifestyles, physical and psychological

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preparedness. Health workers are expected to be more active in providing communication, information, and education (IEC) so that women of childbearing age have the knowledge and awareness to optimally prepare for pregnancy. Planned and ongoing preconception services are expected to reduce the risk of complications and improve the health of mothers and babies.

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