



The Impact of Educational Interventions on Pregnant Women's Knowledge of the Childbirth Planning and Complication Prevention Program

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ABSTRACT

Introduction: Indonesia is one of the developing countries with a high maternal mortality rate (MMR). To address this issue, the government has introduced the Childbirth Planning and Complication Prevention (P4K) program, which includes the use of P4K stickers in healthcare facilities to enhance pregnant women's awareness and enable early identification of potential pregnancy complications.

Objective: This study aimed to examine the effect of education on knowledge about the P4K program among pregnant women.

Method: This study employed a pre-experimental design, involving a population of all pregnant women within the service area of the Limboro Health Center, Polman Regency. A total sample of 35 pregnant women was selected using simple random sampling. Data were analyzed using the Wilcoxon test.

Result: The results showed a statistically significant effect of education on knowledge about the P4K program, with a p-value of 0.00. It is concluded that education positively influences awareness and understanding of the P4K program.

Conclusion: These findings highlight the importance of strengthening educational interventions to improve the implementation of the P4K program, ultimately contributing to the reduction of maternal and infant mortality in the health center's working area.

Keywords: childbirth planning, complication, education, knowledge

Introduction

Health development aims to enhance awareness, willingness, and the ability of individuals to lead healthy lives to achieve the highest level of public health. The Healthy Indonesia Program (2015–2019) prioritizes health development through the establishment of a healthy paradigm, strengthening health services, and implementing national health insurance (Health Ministry, 2018).

Indonesia remains one of the developing countries with a high maternal mortality rate (MMR). The government addresses this issue through the Childbirth Planning and Complication Prevention (P4K) initiative. The program aims to encourage active participation from husbands, families, and communities in planning safe deliveries, preparing for pregnancy complications, and using postpartum family planning. Midwives at the village level facilitate the implementation of P4K to enhance the coverage and quality of maternal health services. A key component of P4K is the use of stickers to register and monitor pregnant women, ensuring safe pregnancies, deliveries, and postpartum periods, reducing the risk of maternal and neonatal fatalities (Werdiyanti, 2017).

The primary causes of maternal mortality in Indonesia include hemorrhage (25%), eclampsia (24%), and infection (11%). Contributing factors are often linked to "the three delays": delays in decision-making, delays in reaching healthcare facilities, and delays in receiving appropriate care upon arrival. These delays are exacerbated by risky maternal conditions such as early pregnancy (under 20 years), late pregnancy (over 35 years), having more than three children, and short intervals between births (less than two years) (Health Ministry, 2015).

To ensure the effective implementation of P4K, community involvement, including the participation of husbands, families, midwives, and nurses, is crucial for monitoring pregnant women using stickers promptly and accurately. Establishing an "alert village" system by and for the community is vital to ensuring effective monitoring (Werdiyanti, 2017). However, various factors influence the adoption of P4K, including cultural beliefs, geographic barriers, and family support. For instance, misconceptions among pregnant women, such as viewing pregnancy and childbirth as routine and not requiring medical evaluation, often result in high-risk pregnancies (Werdiyanti, 2017).

The introduction of P4K stickers in all healthcare facilities is expected to raise awareness among pregnant women, allowing for the early identification of potential pregnancy complications. This aligns with the objectives of antenatal care services, which focus on preventing obstetric complications and ensuring timely and appropriate treatment, as documented on P4K stickers (Saifuddin, 2012).

Knowledge significantly influences behavior, and health education is a proven strategy to enhance awareness. According to Triwibowo et al. (2018), health education aims to improve individuals' and communities' knowledge, attitudes, and skills to achieve optimal health.

Despite various efforts to improve maternal and child health (MCH) services, including the P4K sticker program, there remains a need to strengthen community involvement in maternal and neonatal care. Low maternal knowledge, persistent gender inequities, and insufficient husband support continue to hinder progress. Husband support, defined as providing encouragement, motivation, and assistance to meet the needs of others, plays a

critical role in addressing delays in recognizing danger signs and making timely decisions (Depkes RI, 2013).

Objective

This study aimed to examine the effect of education on knowledge about the P4K program among pregnant women.

Method

This study utilized an analytical observational methodology with a cross-sectional design. The target population comprised all pregnant women residing in the service area of Puskesmas Limboro. Conducted between August and September 2023, the study included a total sample of 35 pregnant women who were present within the Limboro Health Center's working area in Polman Regency during the study period. Participants were selected using simple random sampling, resulting in a final sample of 35 individuals.

The independent variable in this study was pregnancy education, while the dependent variable was knowledge about the Childbirth Planning and Complication Prevention (P4K) program. Data collection was conducted using a structured questionnaire, and statistical analysis was performed using the Wilcoxon test to assess the impact of the intervention.

Result

Univariate analysis

Table 1. Univariate analysis

Variable	f	%
Age Category		
< 20 years	1	2.9
20 - 35 years	27	77.1
> 35 years	7	20.0
Getting Information		
Yes	20	57.1
Never	15	42.9
Edukasi		
Yes	17	48.6
No	18	51.4
Knowledge pretest		
Good	16	45.7
Not Good	19	54.3
Knowledge posttest		
Good	32	91.4
Not Good	3	8.6

Based on Table 1, the study results show that the majority of respondents were in the age group of 20–35 years, accounting for 27 individuals (77.1%). Most respondents reported receiving information about the topic, with 20 individuals (57.1%) indicating "Yes." Regarding education levels, the majority of pregnant women were found to have no formal education,

totaling 18 individuals (51.4%). Prior to the educational intervention, most pregnant women demonstrated insufficient knowledge, with 19 individuals (54.3%) categorized as having low levels of understanding. However, after receiving education, there was a significant improvement in knowledge, with 32 individuals (91.4%) demonstrating good knowledge, indicating a substantial positive impact of the educational intervention.

Bivariate analysis

Table 2. Bivariate analysis

Time	Education	Knowledge				p-value
		Good		Not Good		
		f	%	f	%	
Pre-test	Ya	15	42.9	2	5.7	0.564
	Tidak	1	2.8	17	48.5	
Post-test	Ya	16	45.7	1	2.8	0.000
	Tidak	16	45.7	2	5.7	

Based on the results of the Wilcoxon test, a p-value of 0.564 was obtained, indicating no significant effect of maternal knowledge about the Childbirth Planning and Complication Prevention Program (P4K) before receiving education. In contrast, the Wilcoxon test results after the educational intervention yielded a p-value of 0.000, demonstrating a significant positive effect on maternal knowledge about the P4K program following the education provided.

Discussion

The Childbirth Planning and Complication Prevention Program (P4K) aims to reduce maternal mortality through systematic tracking, documentation, and sticking of every pregnant woman. This program represents a "breakthrough effort" to reduce maternal and neonatal mortality by enhancing service quality and accessibility while mobilizing community resources, particularly in preparing for and addressing maternal and neonatal health challenges.

The findings of this study, analyzed using the Wilcoxon test (p-value = 0.000), indicate a significant improvement in maternal knowledge about P4K following educational interventions. This highlights the importance of education in bridging knowledge gaps, as it fosters better understanding and acceptance of health innovations. Higher levels of education facilitate easier adaptation to new ideas, though cultural, social, and economic factors significantly influence knowledge acquisition. Lack of understanding, such as the importance of preparing potential blood donors for childbirth, remains a barrier in some communities, often compounded by misconceptions that complications like hemorrhage are rare.

This study aligns with prior research, such as Kamidah (2018), which emphasizes challenges in funding maternal care and the declining use of tabulin following the cessation of jampersal. These findings underscore the necessity for sustainable funding mechanisms, such as BPJS, to ensure continuous preparation for maternal care. Monika and Septiawan (2019) also found that knowledge, facility availability, husband support, midwife roles, and

perceptions significantly influence P4K outcomes, demonstrating that knowledge directly and indirectly affects program success.

The role of midwives is critical in promoting P4K. Research by Sukesu (2018) and Mujianti (2018) supports the positive impact of midwives in increasing maternal knowledge and fostering program participation through counseling and education. Statistical tests from these studies show significant relationships between midwife involvement and P4K implementation (p-value = 0.036). Midwives are instrumental in inspiring, educating, and providing comprehensive care, thereby improving program outcomes and encouraging proactive maternal health planning.

Further corroboration comes from Sarli and Ifayanti's study, which identified maternal knowledge, family support, and midwife roles as key factors influencing P4K implementation. The multivariate analysis found significant associations, particularly between midwife involvement and maternal knowledge (p-value = 0.038). This supports the premise that knowledge acquisition is a dynamic process, requiring effective stimuli such as health education and counseling to encourage acceptance and implementation of health innovations.

In conclusion, this study emphasizes the importance of educational interventions and the pivotal role of midwives in enhancing maternal knowledge and participation in the P4K program. Strengthening these aspects through sustained efforts and community engagement is essential for achieving the program's objectives of reducing maternal and neonatal mortality.

Conclusion

The study's findings indicate that, out of 35 respondents, the majority of pregnant women who did not receive education—18 individuals, or 51.4%—had the lowest level of education. Additionally, 19 individuals (54.3%) demonstrated inadequate knowledge about pregnancy before receiving education. The results of the Wilcoxon test, which yielded a p-value of 0.000, show a significant impact of education on maternal knowledge regarding the Childbirth Planning and Complication Prevention Program (P4K). These findings suggest that education plays a crucial role in enhancing maternal knowledge about P4K. It is hoped that the results of this study will be used to improve educational efforts and strengthen the implementation of the P4K program, ultimately contributing to the reduction of maternal and infant mortality in the community health center's service area.

Conflict of interest

The researchers stated that there is no conflict of interest related to the implementation and publication of the results of this research. The entire research process, from planning, data collection, analysis, to report preparation, was carried out independently without any influence or pressure from any third party. A commitment to research ethics is upheld throughout the research process, ensuring transparency, accuracy and honesty in reporting results. Respondents' participation was voluntary with informed consent, and their confidentiality and privacy were maintained in accordance with applicable research ethics standards. With this statement, researchers hope that the research results can be trusted and used as a valid reference for the development of science and health practices related to ethnomedicine and reproductive health.

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Authors' contribution

Each author makes an equal contribution to all parts of the research. All authors have reviewed and approved the final draft critically and are responsible for the index and similarity of the manuscript.

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