Maternal Knowledge of the "Birth Planning and Complication Prevention Program" as a Determinant of Postpartum Contraceptive Decision-Making

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ABSTRACT
Rapid population growth remains a major demographic challenge in Indonesia, driven by limited reproductive health knowledge and persistent cultural norms. To support population regulation and improve maternal health, the government promotes the Family Planning Program, making it essential to understand factors that shape women's decisions regarding postpartum contraception. This study aimed to examine the relationship between maternal knowledge of the Birth Planning and Complication Prevention Program and decision-making about postpartum contraceptive use in the working area of the Tarus Community Health Center in Kupang District, East Nusa Tenggara. An analytic survey with a cross-sectional approach was conducted among thirty pregnant women attending five community health posts, using a structured questionnaire and applying descriptive statistics and the Chi-Square test for analysis. The findings indicate that most respondents demonstrated good knowledge of the Birth Planning and Complication Prevention Program and that the majority decided to use postpartum contraception. A statistically significant association was identified between maternal knowledge of the program and postpartum contraceptive decision-making. These results suggest that stronger understanding of birth planning and complication prevention encourages informed choices regarding postpartum contraception, underscoring the importance of enhanced educational efforts for pregnant women.
Keywords: maternal knowledge; birth planning; complication prevention; decision-making; postpartum contraception

INTRODUCTION
Population growth remains one of the most persistent demographic challenges in Indonesia, where rapid increases in population size are strongly influenced by limited reproductive health knowledge and deeply rooted cultural norms. The phenomenon of population explosion has contributed to a high rate of population growth, reflecting gaps in community awareness, restricted access to reliable reproductive health information, and cultural practices that discourage informed decision-making. In response to these longstanding issues, the Indonesian government has implemented the Family Planning Program as a national strategy to regulate fertility and promote healthier reproductive outcomes. Despite these efforts, Indonesia continues to experience a substantial burden of unintended pregnancies. As a developing nation within Southeast Asia, the country faces a relatively high proportion of pregnancies that are not desired. In 2018, approximately eighty-four percent of births were desired at the time, eight percent were desired later, and seven percent were not desired. Among women with four or more children, twenty-six percent of births were not desired, while only nine percent were desired. Fourteen provinces reported rates of unintended pregnancy above the national average, including West Java, which reached 10.9 percent [1].

Beyond its role in population regulation, the Family Planning Program contributes to achieving universal access to reproductive health services as mandated in the Sustainable Development Goals, particularly indicator 3.7, which emphasizes universal access to sexual and reproductive health services, information, education, and the integration of reproductive health into national strategies and programs [2]. National development targets for 2015–2019 included increasing the contraceptive prevalence rate to sixty-six percent and raising the proportion of active users of long-term contraceptive methods to 23.5 percent. However, data from the 2018 National Basic Health Survey indicated that approximately 27.1 percent of postpartum women were not using postpartum contraception [3]. These figures highlight persistent gaps in postpartum contraceptive uptake, suggesting that knowledge, cultural norms, and decision-making dynamics within families may play a significant role.

A preliminary study conducted at the Tarus Community Health Center further illustrated these challenges. Among 190 postpartum women in Penfui Timur Village, only five women used postpartum contraception, representing merely 2.6 percent. Research conducted by Serly in 2023 also demonstrated that women's participation in family planning decisions remains low due to patriarchal social structures in which men predominantly control decision-making processes [4]. These findings underscore the importance of examining factors that influence postpartum contraceptive use, particularly maternal knowledge of the Birth Planning and Complication Prevention Program, which aims to strengthen preparedness for childbirth and reduce complications.

Based on the demographic challenges, low postpartum contraceptive uptake, and sociocultural barriers identified in previous studies, this research was conducted to analyze the relationship between maternal knowledge of the Birth Planning and Complication Prevention Program and decision-making regarding postpartum contraceptive use in the working area of the Tarus Community Health Center in Kupang, East Nusa Tenggara.

METHODS
The study was conducted in July 2024 within the working area of the Tarus Community Health Center, located in Kupang District, East Nusa Tenggara Province. This region consists of several community health posts that serve pregnant women during routine maternal health monitoring. The research employed an analytic survey design with a cross-sectional approach, allowing the investigators to examine the relationship between maternal knowledge and decision-making at a single point in time [5]. The study population comprised all pregnant women who visited five community health posts during the period of data collection, totaling thirty individuals. Because the population size was relatively small and accessible, the sampling technique used was total population recruitment, meaning that all eligible pregnant women were included as study participants. This approach ensured complete coverage of the target group and minimized selection bias.

The independent variable in this study was maternal knowledge of the Birth Planning and Complication Prevention Program, while the dependent variable was decision-making regarding postpartum contraceptive use. Data were collected using a structured questionnaire consisting of twenty items that had undergone prior validity and reliability testing. The questionnaire applied the Guttman scale, with response options scored

as one for correct answers and zero for incorrect answers. Maternal knowledge was categorized into three levels: good knowledge (76–100 percent), moderate knowledge (56–75 percent), and poor knowledge (less than 56 percent). Decision-making regarding postpartum contraception was assessed through direct questions about the participant's intention and choice of contraceptive method after childbirth. Data analysis consisted of two stages. Descriptive analysis was performed to present frequency distributions for all variables, providing an overview of participant characteristics and knowledge levels. Inferential analysis was conducted using the Chi-Square test to determine the statistical relationship between maternal knowledge of the Birth Planning and Complication Prevention Program and postpartum contraceptive decision-making.

RESULTS

Table 1 shows that most pregnant women were between 25 and 35 years old (16 respondents; 53.3%), had completed senior high school (16 respondents; 53.3%), and were predominantly unemployed (28 respondents; 93.3%). Most participants had more than two children (21 respondents; 70.0%), were in the second trimester of pregnancy (13 respondents; 43.3%), and lived in households with more than two family members (19 respondents; 63.3%).

Table 2 indicates that most pregnant women demonstrated good knowledge of the Birth Planning and Complication Prevention Program, with 19 respondents (63.3%) categorized in the highest knowledge level. Table 3 shows that the majority of pregnant women decided to use postpartum contraception, totaling 18 respondents (60.0%).

Table 4 illustrates the distribution of postpartum contraceptive decision-making across two levels of maternal knowledge regarding the Birth Planning and Complication Prevention Program. Among mothers with good knowledge, a substantial majority; 16 women (84.21%) chose to use postpartum contraception, while only 3 women (15.79%) did not. Conversely, among mothers with moderate knowledge, only 2 women (18.18%) adopted postpartum contraception, whereas 9 women (81.82%) refrained from using it.

This descriptive pattern shows a clear contrast: mothers with good knowledge overwhelmingly opted for postpartum contraception, while those with moderate knowledge predominantly chose not to use it. The distribution suggests that knowledge level strongly influences contraceptive behavior after childbirth.

Analytically, the data reveal a statistically significant relationship between maternal knowledge of the Birth Planning and Complication Prevention Program and postpartum contraceptive decision-making, as indicated by the p-value of 0.021. A p-value represents the probability that the observed association' or a more extreme one could occur purely by chance if no true relationship exists between the variables. In this study, p = 0.021, which is below the conventional threshold of 0.05; indicates that the likelihood of the observed association occurring by chance is only 2.1%; therefore, the relationship between maternal knowledge and postpartum contraceptive decision-making is statistically significant. This means the difference in contraceptive behavior between mothers with good and moderate knowledge is unlikely to be random, and maternal knowledge can be considered a meaningful predictor of postpartum contraceptive use.

The magnitude of the difference between groups is substantial: 1) mothers with good knowledge were more than four times as likely to use postpartum contraception compared to those with moderate knowledge; 2) mothers with moderate knowledge were over five times more likely to avoid postpartum contraception.

Overall, Table 4 provides compelling evidence that maternal knowledge of the Birth Planning and Complication Prevention Program is a critical determinant of postpartum contraceptive decision-making. The statistically significant p-value strengthens this conclusion, highlighting the need for enhanced counseling, continuous education, and community-based dissemination of birth planning information to improve postpartum contraceptive uptake.

Table 1. Distribution of demographic characteristics of pregnant women

Demographic variable	Frequency	Percentage
Age		
< 25 years	6	20.0
25–35 years	16	53.3
> 35 years	8	26.7
Education		
Primary school	7	23.3
Junior high school	2	6.7
Senior high school	16	53.3
Higher education	5	16.7
Occupation		
Employed	2	6.7
Unemployed	28	93.3
Parity		
1–2 children	9	30.0
> 2 children	21	70.0
Pregnancy status		
First trimester	10	33.3
Second trimester	13	43.3
Third trimester	7	23.3
Family size		
> 2 members	19	63.3
< 2 members	11	36.7

Table 2. Distribution of maternal knowledge of the birth planning and complication prevention program

Knowledge	Frequency	Percentage
Good	19	63.3
Moderate	11	36.7

Table 3. Distribution of postpartum contraceptive decision-making

Decision-making	Frequency	Percentage
Using contraception	18	60.0
Not using contraception	12	40.0

Table 4. Relationship between maternal knowledge of the Birth Planning and Complication Prevention Program and postpartum contraceptive decision-making

Knowledge	Contraceptive decision-making		p-value
	Using: f (%)	Not using: f (%)	
Good	16 (84.21)	3 (15,79	0.021
Moderate	2 (18.18)	9 (81.82)	

DISCUSSION

The findings of this study indicate that most pregnant women possessed a strong level of knowledge regarding the Birth Planning and Complication Prevention Program. This result aligns with the study conducted by Kurniawati and Aeny [2020], who reported that the majority of pregnant women demonstrated good comprehension of the Birth Planning and Complication Prevention Program. According to information obtained from village midwives and community health volunteers, counseling related to the Birth Planning and Complication Prevention Program is routinely provided during the first antenatal care visit at community health centers or community health posts. The information delivered typically includes estimated date of delivery, designated birth attendants, preferred place of delivery, labor companions, transportation arrangements for childbirth, identification of potential blood donors, and planning for postpartum contraceptive use. Continuous exposure to such information from village midwives contributes substantially to pregnant women's understanding and awareness of birth planning and complication prevention. This finding is further supported by Ruhanah and Lathifah [2024], who demonstrated a significant relationship between contraceptive counseling during pregnancy and postpartum contraceptive uptake [6]. Pregnant women who receive consistent information regarding the Birth Planning and Complication Prevention Program are more likely to make informed decisions about postpartum contraceptive use.

The study also found that most pregnant women decided to use postpartum contraception. This decision was influenced by maternal age and educational attainment, as the majority of participants were between 25 and 35 years old and had completed senior high school. Wulandari, Martha, and Kristianto [2022] reported that maternal age is associated with the use of long-term contraceptive methods among postpartum women [7]. The age range of 20 to 35 years is considered an optimal period for spacing pregnancies, as it represents a biologically favorable window for conception and childbirth. Consequently, women within this age group are often encouraged to adopt postpartum contraception immediately after their first delivery. Maternal education also plays a crucial role in shaping contraceptive decision-making. This study's findings are consistent with those of Asih, Andriyani, and Anoluthfa [2023], who found that educational attainment significantly influences postpartum contraceptive use [8]. Similarly, Fitriana, Liliana, and Wulandari [2022] reported that education is associated with contraceptive choice among women attending the Banjar II Community Health Center in Buleleng, Bali [9]. Utami et al. [2020] also noted that postpartum contraceptive use is influenced by maternal education [10]. Higher educational attainment enhances women's ability to understand reproductive health information, evaluate contraceptive options, and make informed decisions regarding postpartum contraception. Effective counseling and continuous education about family planning and contraceptive methods strengthen women's comprehension of the benefits of postpartum contraception, enabling them to regulate pregnancy spacing and safeguard reproductive health. Sitorus and Siahaan [2018] further emphasized that counseling during pregnancy improves maternal knowledge and interest in using contraception after childbirth to achieve optimal pregnancy spacing [11]. Additional evidence shows that effective counseling and adequate access to health information increase contraceptive continuation and reinforce women's decision-making capacity in selecting appropriate contraceptive methods [12].

Comprehensive education enhances pregnant women's knowledge and awareness, ultimately increasing postpartum contraceptive uptake. Nining [2022] demonstrated that counseling significantly influences contraceptive choice [13]. Therefore, midwives at community health centers are encouraged to strengthen service quality through educational activities on family planning and counseling on postpartum contraception. Higher educational attainment increases awareness of the right to access health services, thereby elevating expectations regarding the right to accept or refuse medical care. Individuals with higher education tend to make more informed decisions regarding postpartum contraceptive use. The assumption underlying this study is that formal education strongly influences knowledge acquisition; individuals with higher education generally possess greater knowledge, while those with lower education may have limited understanding, which affects their ability to interpret health information and impacts their reproductive health decisions.

The findings further reveal that pregnant women with good knowledge of the Birth Planning and Complication Prevention Program were more likely to decide to use postpartum contraception, whereas those with moderate knowledge tended to refrain from postpartum contraceptive use. This pattern suggests that higher levels of knowledge increase the likelihood of making appropriate reproductive health decisions after childbirth, including the adoption of postpartum contraception. Adequate knowledge enables women to understand the benefits of birth planning, preparedness for complications, and the importance of pregnancy spacing through postpartum contraception [14]. Statistical analysis confirmed a significant relationship between maternal knowledge of the Birth Planning and Complication Prevention Program and postpartum contraceptive decision-making. This result is consistent with the findings of Sinaga [2019], who reported that knowledge among third-trimester pregnant women was significantly associated with postpartum intrauterine device use [15]. Thus, the present study demonstrates that strong knowledge of the Birth Planning and Complication Prevention Program is a key determinant supporting postpartum contraceptive decision-making [16]. Pardosi et al. [2022] also found a significant relationship between knowledge and interest in selecting long-term postpartum contraceptive methods, with a p-value of 0.021, indicating that knowledge contributes to variations in interest in long-term contraceptive use [17]. Enok [2015] similarly reported a relationship between knowledge of contraceptive methods and maternal decisions regarding contraceptive use [18]. Sunesni, Milasari, and Susilawati [2023] found that postpartum maternal knowledge was associated with postpartum contraceptive choice in the working area of the Koto Panjang Ikur Koto Community Health Center in Padang City [19]. The present study confirms that knowledge strongly influences pregnant women's decisions to use postpartum contraception. Women with good knowledge tended to adopt postpartum contraception, whereas those with moderate knowledge tended not to use it. However, a small number of women with good knowledge still chose not to use postpartum contraception, suggesting that knowledge alone may not fully determine contraceptive behavior.

Beyond knowledge, postpartum contraceptive decision-making was also influenced by parity. The study found that most pregnant women had more than two children. Sari et al. [2020] reported that the number of children is significantly associated with maternal knowledge regarding postpartum contraceptive use [20]. Pardosi et al. [2022] also found a relationship between parity and the selection of long-term postpartum contraceptive methods, noting that women with more than one child tend to have greater experience with contraception and are therefore more likely to adopt postpartum contraceptive methods [17].

CONCLUSION

The study concludes that pregnant women with strong knowledge of the Birth Planning and Complication Prevention Program are substantially more likely to make informed decisions regarding the use of postpartum contraception. Maternal understanding of birth planning, preparedness for obstetric complications, and the importance of pregnancy spacing demonstrates a significant association with postpartum contraceptive decision-making. These findings reinforce the central premise that maternal knowledge of the Birth Planning and Complication Prevention Program serves as a key determinant in choosing appropriate reproductive health strategies after childbirth. Strengthening community-based education and expanding dissemination of information related to the Birth Planning and Complication Prevention Program are therefore essential to enhance pregnant women's decision-making capacity and promote wider adoption of postpartum contraception.

Ethical consideration, competing interest and source of funding

-Ethical approval for this study was obtained from the Health Research Ethics Committee of the Kupang Health Polytechnic of the Ministry of Health (Approval No. L.02.03/1/0162/2024).
-There is no conflict of interest related to this publication.
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