

Factors Influencing the Use of Postpartum Family Planning Services at Kayamanya Community Health Center, Poso City District

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Abstract

Postpartum family planning is a national health priority, but its coverage remains suboptimal. This study analyzed factors influencing its utilization at Kayamanya Community Health Center, Poso Regency. This research adopted a quantitative approach using an analytical survey within a cross-sectional framework. The study involved 168 mothers during the postpartum period, who were recruited through accidental sampling. Data analysis was conducted in three stages: univariate analysis to describe the study variables, Chi-square testing to assess bivariate relationships, and binary logistic regression to determine the most influential factors. The results showed that 68.5% of the respondents used contraceptive services after delivery. In the bivariate analysis, maternal knowledge, husband's support, communication with health workers, and access to health facilities were significantly associated with contraceptive use after childbirth, with p-values of <0.001, <0.001, <0.001, and 0.023, respectively. In contrast, educational level (p = 0.261) and acceptor satisfaction (p = 0.309) did not show significant associations. Further analysis using binary logistic regression identified communication with health workers as the strongest factor related to post-delivery contraceptive utilization (AOR = 7.133; 95% CI: 2.574–19.767). Maternal knowledge (AOR = 4.695; 95% CI: 2.018–10.925) and husband's support (AOR = 4.173; 95% CI: 1.794–9.707) also remained significant in the final model. However, access to health facilities was no longer significant after adjustment for other variables (p = 0.783). Postpartum family planning utilization was mainly influenced by maternal knowledge, husband's support, and health worker communication. Efforts to increase coverage should strengthen education, counselling quality, and husband involvement.

Keywords: Birth, Family Planning, Postpartum, Service Utilization.

Introduction

The World Health Organization (WHO) defines family planning as a measure that enables married couples to prevent unintended pregnancies, manage birth intervals, plan the appropriate time for pregnancy, and decide the number of children they wish to have in order to support women's reproductive health (1). Family planning programs play a strategic role in reducing the risk of high-risk pregnancies, obstetric complications, and maternal mortality. The high unmet need for contraception indicates that many women remain at risk of unplanned pregnancy, particularly during the postpartum period when fertility may return before regular menstruation resumes (2). Maternal mortality remains an important indicator of global and national health development, and the Sustainable Development Goals (SDGs) target a

reduction in maternal mortality to fewer than seventy deaths per 100,000 live births by 2030. In the Association of Southeast Asian Nations (ASEAN) region and Indonesia, maternal mortality remains relatively high despite a gradual long-term decline. National data also show fluctuations in maternal deaths in recent years, indicating the need for stronger and more sustainable efforts to reduce maternal mortality (3). The trend of maternal deaths in Indonesia from 2018 to 2023 increased from 4,251 in 2019 to 4,627 in 2020, reaching the highest peak of 7,189 cases in 2021. It then declined sharply to 3,572 cases in 2022 before rising again to 4,482 cases in 2023 (4). Postpartum family planning is an evidence-based intervention that can prevent unintended repeat pregnancies and reduce health risks for mothers

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and infants. Postpartum contraception is provided after delivery and during the postpartum period to ensure safer birth spacing and support maternal recovery (5). Long-acting postpartum contraceptive methods are considered effective in reducing unplanned pregnancies and lowering the risk of complications in subsequent pregnancies (6). However, despite the availability of national policies, postpartum family planning coverage in several regions has not reached the target of

seventy percent. In Central Sulawesi Province and Poso Regency, postpartum family planning utilization remains relatively low and varies across regencies/cities. The high Total Fertility Rate in Poso Regency also reflects the suboptimal utilization of family planning services, including postpartum family planning (7). The reasons for not using family planning after childbirth in Central Sulawesi Province are shown in Figure 1.

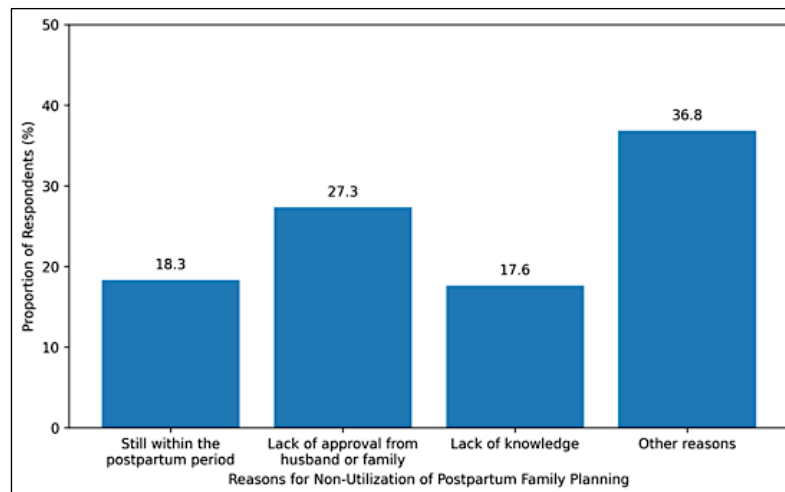


Figure 1: Proportion of Reasons for not Using Family Planning After Childbirth in 2023 in Central Sulawesi Province (4)

The use of contraceptive services after childbirth can be affected by various related factors, such as maternal knowledge, educational background, support from the husband, communication with health workers, access to health facilities, and satisfaction among acceptors. Conceptually, these factors can be understood through a health service utilization framework, where education and knowledge act as predisposing factors, husband's support and communication function as reinforcing factors, accessibility represents an enabling factor, and acceptor satisfaction reflects the perceived quality of services. Mothers with better knowledge are expected to have a clearer understanding of the benefits, timing, and available methods of postpartum contraception. Meanwhile, husband's support and effective communication with health workers are expected to strengthen decision-making and increase confidence in using postpartum family planning services. Several studies have reported that good communication with health workers and support

from the family are important factors in improving contraceptive use after childbirth (8–10).

In addition to individual and family factors, the success of postpartum family planning services is also influenced by the health care system and regional policy support. The involvement of health workers, family planning cadres, and community activity groups is an important part of strengthening community-based family planning programs. Postpartum family planning services integrated with community health centers and family planning counseling centers are intended to bring services closer to the community and improve access for postpartum mothers (11). Accessibility to health facilities is also an important enabling factor because the availability of nearby services, transportation, and adequate facilities can support mothers in utilizing family planning services (12). The percentage of postpartum family planning utilization by regency/city in Central Sulawesi Province is presented in Figure 2.

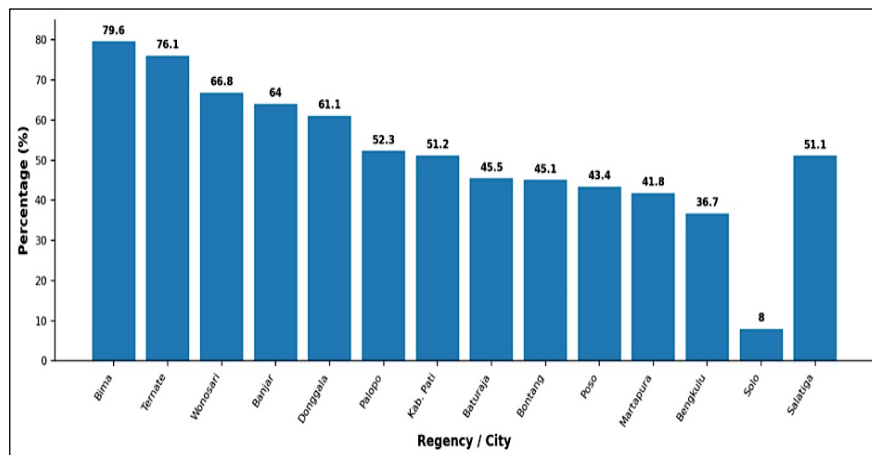


Figure 2: Percentage of Postpartum Family Planning by Regency/City in 2023 in Central Sulawesi Province (4)

Maternal satisfaction and knowledge also contribute to postpartum family planning decision-making. Quality services, appropriate counseling, and patient-centered communication can increase acceptor satisfaction and encourage continued use of family planning services (11, 13). Maternal

knowledge and education level are also associated with contraceptive decision-making, as mothers with better understanding are more likely to recognize the importance of postpartum contraception and choose methods that are appropriate to their condition (14, 15).

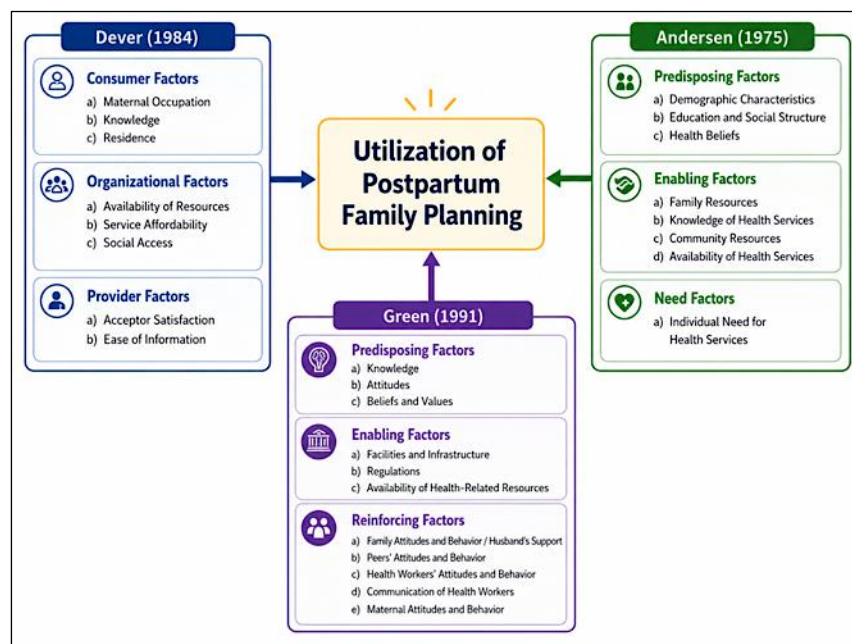


Figure 3: Theoretical Framework (16-18)

The theoretical framework of this study is presented in Figure 3. Based on the theoretical perspectives of Dever, Andersen, and Green, the utilization of postpartum family planning services is influenced by consumer-related factors, predisposing factors, enabling factors, reinforcing factors, provider factors, and need factors. In this study, these concepts were adapted to explain how maternal knowledge, education, husband's support, communication with health workers,

accessibility of health facilities, and acceptor satisfaction may influence postpartum family planning utilization. Therefore, improving counseling quality, health education, husband involvement, communication with health workers, and service accessibility is essential to increase postpartum family planning coverage. Considering these issues, this study aimed to examine the factors associated with the use of contraceptive

services after childbirth at Kayamanya Community Health Center, Poso City District, Poso Regency.

Methodology

Study Design and Place

This study used a quantitative method with an analytical survey approach and a cross-sectional design. This design was selected because the study aimed to examine the relationship between independent variables, namely education level, knowledge, communication with health workers, husband's support, accessibility of health facilities, and acceptor satisfaction, and the dependent variable, namely the utilization of postpartum

family planning services, at one point in time. The study was conducted at Kayamanya Community Health Center, Poso City District, Poso Regency, Central Sulawesi, Indonesia, from September to October 2025. The research site was selected because postpartum family planning coverage in this area had not yet reached the national target. Kayamanya Community Health Center was selected because postpartum family planning coverage in its working area had not yet reached the national target. The site is located at 1.664013° S latitude and 121.107796° E longitude, as shown in Figure 4, and represents an urban health center area requiring program strengthening.

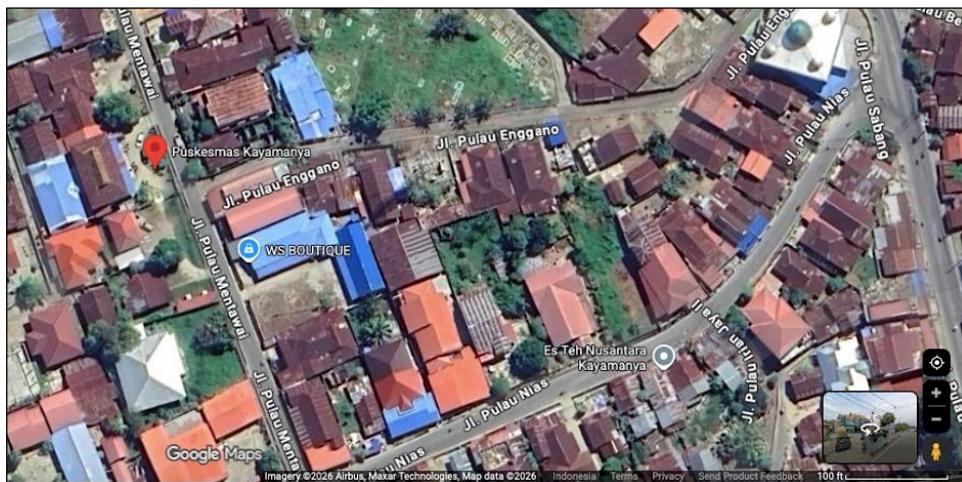


Figure 4: Kayamanya Community Health Center, Poso City

Population and Sample

The population in this study consisted of all mothers who had given birth and were domiciled in the working area of Kayamanya Community

The sample size was calculated using the Slovin formula with a margin of error of 5%, as follows below Equation [1]:

$$\begin{aligned} n &= \frac{N}{1+N.(e)^2} & [1] \\ n &= \frac{290}{1+290.(0.05)^2} \\ n &= 168 \end{aligned}$$

Based on this calculation, the required sample size was 168 respondents. The sampling technique used was non-probability sampling with an accidental sampling method. This method was used because probability sampling was not feasible due to the limited availability of postpartum mothers at the health service point during the data collection period, variations in mothers' attendance schedules, and the limited time frame of the study. Therefore, respondents

Health Center, Poso City District, Poso Regency, from January to December 2024, with a total population of 290 mothers.

were selected based on their availability, eligibility, and willingness to participate during the study period. The inclusion criteria were mothers who had given birth, lived in the working area of Kayamanya Community Health Center, were willing to participate, and were able to communicate during the interview. Mothers who were seriously ill, unable to complete the interview, or refused to provide informed consent were excluded from the study. Since accidental

sampling was used, the findings of this study should be generalized with caution and are more applicable to postpartum mothers with similar characteristics and health service contexts.

Data Collection

Data were collected using primary and secondary data sources. Primary data were obtained through direct interviews with respondents using a structured questionnaire developed according to the research variables. Secondary data were obtained from the Poso District Health Office Profile, annual health reports, DPPKB reports, public health sector reports, and relevant scientific literature. Before data collection, respondents were given an explanation regarding the objectives, benefits, procedures, confidentiality, and voluntary nature of the study. Respondents who agreed to participate were asked to provide informed consent before the interview. Data collection was conducted by maintaining respondents' privacy and ensuring that all information obtained was used only for research purposes.

Research Instruments

The research instrument used in this study was a structured questionnaire administered through direct interviews. The questionnaire consisted of respondent identity data, including name, age, telephone number, education level, and distance from home to the health facility, as well as questions related to the utilization of postpartum family planning services. The research variables measured in the questionnaire included education level, knowledge, communication with health workers, husband's support, accessibility of health facilities, and patient satisfaction. To obtain these data, the researcher acted as an interviewer using the prepared questionnaire. The questionnaire was prepared using instruments and indicators from previous studies, with adjustments made to fit the context of contraceptive services after

childbirth at Kayamanya Community Health Center. Knowledge was measured using a questionnaire derived from a previously published instrument (19). Communication was assessed through indicators employed in earlier research (20), while husband's support was evaluated using items adopted from a validated questionnaire (21). Accessibility of health facilities was measured using indicators reported in prior studies (22). Patient satisfaction was assessed using a questionnaire developed and validated in previous research (23).

The questionnaire used nominal and Likert scales according to the operational definition of each variable. The knowledge variable measured respondents' understanding of the benefits, timing, and contraceptive options of postpartum family planning. Husband's support measured emotional, informational, instrumental, and decision-making support related to postpartum contraception. Communication with health workers measured the clarity, completeness, openness, and interpersonal quality of counseling. Accessibility of health facilities measured distance, transportation, travel time, and ease of reaching health services. Patient satisfaction measured respondents' perceptions of service quality, comfort, information received, and overall satisfaction with postpartum family planning services. Instrument validity was assessed through content validation by experts in public health and family planning services to ensure that each item was relevant to the study objectives. A pilot test was also conducted on respondents with similar characteristics outside the main study sample to evaluate item clarity and respondent understanding. Reliability testing was performed using Cronbach's alpha. The questionnaire was considered reliable if the Cronbach's alpha value was ≥ 0.70 . The reliability test results are presented in Table 1.

Table 1: Reliability Test Results of the Research Instrument

Variable	Cronbach's Alpha	Interpretation
Knowledge	0.812	Reliable
Communication with health workers	0.864	Reliable
Husband's support	0.879	Reliable
Accessibility of health facilities	0.781	Reliable
Patient satisfaction	0.835	Reliable

Based on the reliability test results, all variables had Cronbach's alpha values greater than 0.70,

indicating that the questionnaire had good internal consistency. Therefore, the instrument was

considered reliable and appropriate for measuring the factors influencing the utilization of postpartum family planning services at Kayamanya Community Health Center.

Data Analysis

Data analysis was performed in several steps, starting with editing, coding, data entry, data cleaning, and tabulation. Univariate analysis was applied to present the frequency and percentage distribution of each variable. The Chi-square test was then used in the bivariate analysis to assess the association between each independent variable and contraceptive use after childbirth, using a 5% significance level. Variables with *p*-values below 0.05 in the bivariate analysis, as well as variables considered important based on theory, were included in the multivariate model. Binary logistic regression was applied to determine the most influential factors related to contraceptive utilization during the postpartum period. The regression results were reported using odds ratios (OR), adjusted odds ratios (AOR), 95% confidence intervals (CI), and *p*-values. Possible confounding variables, including age, educational background, employment status, and other respondent characteristics, were also considered to provide a more accurate interpretation of the

relationship between the main independent variables and postpartum contraceptive use.

Results and Discussion

Poso Regency is one of the regencies in Central Sulawesi Province with a wide geographical area and varied regional characteristics. The total area of Poso Regency is approximately 8,712.25 km², accounting for 12.81% of the total area of Central Sulawesi Province. The region consists of 19 sub-districts, with Central Lore District as the largest sub-district. Geographically, Poso Regency is bordered by Tomini Bay and North Sulawesi Province to the north, South Sulawesi Province to the south, and Tojo Una-Una Regency and North Morowali Regency to the east. The region is dominated by mountainous and hilly areas, with many areas located more than 500 meters above sea level.

The availability of health facilities in Poso Regency reflects the local government's effort to provide health services across urban, rural, remote, and very remote areas. Kayamanya Community Health Center is classified as an urban health center located in Poso City District, with a working area of 11.29 km² covering seven urban villages. A summary of the regional conditions, population, and health facilities in Poso Regency is presented in Table 2.

Table 2: Summary of Regional Conditions, Population, and Health Facilities in Poso Regency from 2023 to 2024 (7)

Description	Information
Area of Poso Regency	8,712.25 km ²
Number of sub-districts	19 sub-districts
Largest sub-district	Central Lore, 976.37 km ²
Total population	248,345–251,473 people
Average population density	35 people per km ²
Most populous district	South Poso City, 24,674 people
Number of community health centers	24 accredited units
Health center criteria	Urban 3; Rural 10; Remote 5; Very remote 6
Kayamanya Community Health Center	Urban health center in Poso City District
Working area of Kayamanya Health Center	11.29 km ² , consisting of 7 urban villages

A total of 168 postpartum mothers participated in this study. Based on age, most respondents were 26–35 years old, accounting for 86 respondents (51.2%), followed by respondents aged 17–25 years, with 56 respondents (33.3%). The majority of respondents were housewives, with 143 respondents (85.1%). Regarding educational background, most respondents had completed

senior high school or vocational education with 100 respondents (59.5%), followed by respondents who had graduated from junior high school or equivalent, with 30 respondents (17.9%). Most respondents were Muslim, with 166 respondents (98.8%). The characteristics of respondents are presented in Table 3.

Table 3: Characteristics of Respondents at Kayamanya Community Health Center, Poso City District, 2025

Characteristics	Category	n	Percentage (%)
Age	17–25 years	56	33.3
	26–35 years	86	51.2
	36–45 years	25	14.9
	46–55 years	1	0.6
Occupation	Housewife	143	85.1
	Self-employed	3	1.8
	Honorary employee	8	4.8
	Health worker	1	0.6
	Civil servant	8	4.8
	Private employee	4	2.4
	Trader	1	0.6
Education	Did not attend school/did not finish elementary school	2	1.2
	Graduated from elementary school	8	4.8
	Graduated from junior high school or equivalent	30	17.9
	Graduated from senior high school/vocational school	100	59.5
	Diploma/Bachelor/Master/Doctoral degree	28	16.7
Religion	Islam	166	98.8
	Protestant Christian	2	1.2
Total		168	100.0

Note: Percentages were calculated based on the total number of respondents, n = 168.

The distribution of research variables showed that 115 respondents (68.5%) utilized postpartum family planning services within 42 days after delivery, while 53 respondents (31.5%) did not utilize postpartum family planning services within the same period. Most respondents had sufficient knowledge, with 116 respondents (69.0%), sufficient husband's support, with 99 respondents

(58.9%), and sufficient communication with health workers, with 137 respondents (81.5%). In addition, most respondents reported sufficient acceptor satisfaction, with 164 respondents (97.6%), and most had near access to health facilities, with 151 respondents (89.9%). The distribution of research variables is shown in Table 4.

Table 4: Distribution of Research Variables Among Respondents at Kayamanya Community Health Center, 2025

Variable	Category	n	Percentage (%)
Postpartum family planning utilization	Used postpartum contraception ≤42 days	115	68.5
	Did not use postpartum contraception ≤42 days	53	31.5
Knowledge level	Sufficient	116	69.0
	Insufficient	52	31.0
Husband's support	Sufficient	99	58.9
	Insufficient	69	41.1
Communication level	Sufficient	137	81.5
	Insufficient	31	18.5
Acceptor satisfaction	Sufficient	164	97.6
	Insufficient	4	2.4
Accessibility of health facilities	Near	151	89.9
	Far	17	10.1

Note: n= Number of Participants. Postpartum family planning utilization was defined as contraceptive use within 42 days after delivery.

Bivariate analysis showed that education level was not significantly related to contraceptive use after childbirth ($p = 0.261$). Acceptor satisfaction also had no significant association with contraceptive practice during the postpartum period ($p = 0.309$).

However, maternal knowledge, support from the husband, communication with health workers, and access to health facilities were significantly associated with contraceptive utilization after delivery.

Respondents with sufficient knowledge were more likely to utilize postpartum family planning services than respondents with insufficient knowledge (81.9% vs. 38.5%; $p < 0.001$). Respondents with sufficient husband's support also showed higher utilization than those with insufficient husband's support (83.8% vs. 46.4%; $p < 0.001$). In addition, respondents with sufficient communication with health workers had higher

utilization than those with insufficient communication (76.6% vs. 32.3%; $p < 0.001$). Accessibility of health facilities was also significantly related to utilization, where respondents living near health facilities utilized postpartum family planning services more frequently than those living far from health facilities (71.5% vs. 41.2%; $p = 0.023$). The results of the bivariate analysis are presented in Table 5.

Table 5: Bivariate Analysis of Factors Associated with Postpartum Family Planning Utilization

Variable	Category	Utilized n (%)	Not utilized n (%)	Total n (%)	p-value
Education level	≥ Senior high school	91 (71.1)	37 (28.9)	128 (100.0)	0.261
	< Senior high school	24 (60.0)	16 (40.0)	40 (100.0)	
Knowledge level	Sufficient	95 (81.9)	21 (18.1)	116 (100.0)	<0.001
	Insufficient	20 (38.5)	32 (61.5)	52 (100.0)	
Husband's support	Sufficient	83 (83.8)	16 (16.2)	99 (100.0)	<0.001
	Insufficient	32 (46.4)	37 (53.6)	69 (100.0)	
Communication level	Sufficient	105 (76.6)	32 (23.4)	137 (100.0)	<0.001
	Insufficient	10 (32.3)	21 (67.7)	31 (100.0)	
Acceptor satisfaction	Sufficient	111 (67.7)	53 (32.3)	164 (100.0)	0.309
	Insufficient	4 (100.0)	0 (0.0)	4 (100.0)	
Accessibility of health facilities	Near	108 (71.5)	43 (28.5)	151 (100.0)	0.023
	Far	7 (41.2)	10 (58.8)	17 (100.0)	
Total		115 (68.5)	53 (31.5)	168 (100.0)	

Note: n= Number of Participants. Statistical analysis was performed using the Chi-square test; $p < 0.05$ was considered statistically significant.

Based on the binary logistic regression model, communication with health workers, maternal knowledge, and support from the husband remained statistically significant factors related to contraceptive use after childbirth. The strongest association was observed in communication with health workers, with an AOR of 7.133 (95% CI: 2.574–19.767; $p < 0.001$). This finding shows that mothers who had adequate communication with health workers had 7.1 times higher odds of using contraception during the post-delivery period compared with those who had inadequate communication, after adjustment for other variables. Maternal knowledge was also significant, with an AOR of 4.695 (95% CI: 2.018–10.925; $p < 0.001$), indicating that mothers with

sufficient knowledge were 4.7 times more likely to use contraception after delivery. Support from the husband was another significant factor, with an AOR of 4.173 (95% CI: 1.794–9.707; $p = 0.001$), suggesting that women who received adequate support from their husbands had 4.2 times higher odds of using contraception in the postpartum period. In contrast, access to health facilities was not statistically significant in the multivariate model (AOR = 0.838; 95% CI: 0.239–2.946; $p = 0.783$). Overall, communication with health workers appeared to be the most influential factor, followed by maternal knowledge and husband's support. The complete multivariate analysis is shown in Table 6.

Table 6: Multivariate Analysis of Factors Influencing Postpartum Family Planning Utilization

Variable	B	SE	Wald	df	p-value	AOR	95% CI Lower	95% CI Upper
Knowledge level	1.546	0.431	12.880	1	<0.001	4.695	2.018	10.925
Husband's support	1.429	0.431	11.002	1	0.001	4.173	1.794	9.707
Accessibility of health facilities	-0.176	0.641	0.076	1	0.783	0.838	0.239	2.946
Communication	1.965	0.520	14.270	1	<0.001	7.133	2.574	19.767

Constant	-2.430	0.359	45.874	1	<0.001	0.088
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Note: AOR = adjusted odds ratio; CI = confidence interval; SE = standard error. Binary logistic regression was used to identify dominant factors associated with postpartum family planning utilization.

The findings of this study indicate that the utilization of postpartum family planning services at Kayamanya Community Health Center was relatively high, with most respondents using contraception within 42 days after delivery. This result suggests that postpartum mothers in the study area have begun to recognize the importance of contraception after childbirth as part of efforts to prevent unintended pregnancies and maintain appropriate birth spacing. The relatively high utilization may also reflect the role of primary health care services in reaching postpartum mothers through antenatal care, postnatal care, counseling, and continuous contact with health workers. Previous research has also shown that the use of health services can increase when mothers have adequate access to information, counseling, and service support from health facilities (11).

Maternal knowledge was identified as an important factor influencing contraceptive use during the postpartum period. Mothers with sufficient knowledge were more likely to use postpartum family planning because they had a better understanding of the benefits of contraception, the risk of closely spaced pregnancies, and contraceptive options that can be used after childbirth. This finding supports the concept that knowledge acts as a predisposing factor in health behavior because it can influence maternal awareness, attitudes, and decision-making. The role of health literacy is also important in this context, as mothers with better ability to receive, understand, and apply health information tend to be more confident in choosing postpartum contraception. Previous studies have indicated that better knowledge is associated with increased use of postpartum family planning services (24).

Spousal support was found to have a significant relationship with the uptake of contraception after childbirth. This finding shows that postpartum contraceptive decisions are not only influenced by maternal readiness, but also by family and household dynamics. Emotional support, informational support, approval, and involvement from husbands can increase mothers' confidence and reduce hesitation in using contraception after

childbirth. In many sociocultural settings, reproductive decisions are often made jointly within the family, making husband involvement an important reinforcing factor. Therefore, family planning counseling should not only target mothers, but also involve husbands to strengthen shared understanding and support for postpartum contraceptive use. Similar findings have been reported in previous studies, where husband's support was associated with a higher likelihood of becoming a postpartum family planning acceptor (22, 25, 26).

Communication with health workers was identified as the most dominant factor influencing postpartum family planning utilization. Good communication allows mothers to receive clear, complete, and understandable information regarding the benefits, timing, side effects, and available contraceptive methods. Two-way, empathetic, and client-centered communication can also increase trust, reduce fear or misconceptions, and support mothers in making informed decisions. In this study, communication had the highest odds ratio, indicating that respondents with sufficient communication had a much greater likelihood of using postpartum family planning services. However, this result should be interpreted with caution because the confidence interval was relatively wide, which may indicate variability in the sample or possible instability in the model. Even so, the finding remains important because previous studies have also shown that effective counseling and good interpersonal communication can improve maternal trust, knowledge, and involvement in postpartum family planning use (27, 28).

Accessibility of health facilities showed a significant relationship in the bivariate analysis but was not significant in the multivariate analysis. This suggests that although geographic access, distance, transportation, and service availability may influence postpartum family planning utilization, these factors were not the main determinants after controlling for knowledge, husband's support, and communication. One possible explanation is that most respondents already had relatively good access to health facilities, as the majority lived near the service

location. Therefore, accessibility may not have created enough variation to strongly differentiate users and non-users in the final model. This finding differs from several previous studies, which reported that physical access, transportation, and availability of facilities were important factors in health service utilization (23, 29, 30). In the context of Kayamanya Community Health Center, interpersonal and informational factors appeared to have a stronger influence than geographic access alone.

Acceptor satisfaction did not show a significant association with the utilization of postpartum family planning. This result should be interpreted carefully because almost all respondents reported sufficient satisfaction, while only a very small number were categorized as having insufficient satisfaction. This uneven distribution may limit the ability of the analysis to detect a meaningful relationship between satisfaction and service utilization. In addition, satisfaction may be influenced by subjective perceptions, expectations, previous service experiences, communication quality, waiting time, privacy, and comfort during service delivery. Therefore, the measurement of satisfaction in this study may not fully capture all dimensions of service quality. Previous studies have suggested that service quality, counseling, and satisfaction can influence the continuity and success of family planning use, but stronger measurement tools may be needed to assess this relationship more accurately (31).

The findings indicate that postpartum family planning utilization at Kayamanya Community Health Center was more strongly influenced by knowledge, husband's support, and communication with health workers than by demographic or structural factors alone. These results support the theoretical framework that postpartum family planning utilization is shaped by the interaction of predisposing factors, reinforcing factors, enabling factors, and service-related factors. The practical implication of this study is that postpartum family planning programs should prioritize improving maternal knowledge, strengthening husband involvement, and enhancing the communication and counseling skills of health workers. In addition, although accessibility was not significant in the multivariate model, maintaining service availability and ease of access remains important to ensure that postpartum

mothers can receive timely and appropriate contraception services. This study has several limitations, including the cross-sectional design, which prevents causal inference, the use of accidental sampling, which may reduce the generalizability of the findings, and the restriction of the study setting to a single community health center. Therefore, further studies with broader settings, stronger sampling methods, and more comprehensive measurement of satisfaction and sociocultural factors are recommended.

Conclusion

This study concluded that postpartum family planning utilization at Kayamanya Community Health Center was influenced by individual, social, and communication-related factors. Maternal knowledge, husband's support, and communication with health workers showed significant associations with the utilization of postpartum family planning. However, accessibility to health facilities was not significantly associated after adjustment for other variables. Communication with health workers was identified as the most dominant factor, indicating that clear, effective, and client-centered counseling plays an important role in supporting mothers' decisions to use postpartum contraception. These findings highlight the need to strengthen postpartum family planning education, improve the quality of counseling provided by health workers, and actively involve husbands in the counseling and decision-making process. Family planning program managers should also enhance the communication skills of health workers so that information about postpartum contraception can be delivered clearly, appropriately, and according to mothers' needs. Several limitations should be acknowledged in this study. First, the cross-sectional design does not allow for the determination of causal associations between the factors investigated and postpartum family planning utilization. Second, the use of accidental sampling may limit the generalizability of the study findings. Since the study was conducted in only one community health center, the results may not fully represent postpartum mothers in other areas with different geographic, sociocultural, and health service characteristics. Future studies are recommended to use stronger research designs, wider study areas, and probability sampling methods to improve the validity and

generalizability of the findings. Further research should also consider additional variables, such as socioeconomic status, parity, previous contraceptive experience, cultural norms, family decision-making patterns, and the quality of health service delivery, to provide a more comprehensive understanding of postpartum family planning utilization.

Abbreviations

AOR: Adjusted Odds Ratio, ASEAN: Association of Southeast Asian Nations, CI: Confidence Interval DPPKB: Population Control and Family Planning Office, KB: Family Planning, OR: Odds Ratio, PFP: Postpartum Family Planning, SDGs: Sustainable Development Goals, WHO: World Health Organization.

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Author Contributions

Noperti Toban: Conceptualization, Methodology, Investigation, Data Collection, Data Processing, Formal Analysis, Data Curation, Writing- Original Draft and Revision, Balqis: Supervision, Validation of the Methodology, Interpretation of the Findings, Scientific Review, Manuscript Review and Editing, Approval of the Final Manuscript, Muhammad Alwy Arifin: Supervision, Methodological Guidance, Validation of Data Analysis, Interpretation of The Results, Manuscript Review and Editing, Approval of the Final Manuscript, Indar: Supervision, Public Health Input, Evaluation of the Methodology, Interpretation of the Findings, Manuscript Revision, Approval of the Final Manuscript, Muhammad Syafar: Supervision, Scientific Input, Interpretation of the Findings, Critical Review of the Manuscript, Manuscript Review and Editing, Approval of the Final Manuscript. All authors have reviewed and approved the final version of the manuscript.

Conflict of Interest

The authors declare that there is no conflict of interest related to this study.

Data Availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request. However, the data are not publicly accessible due to privacy and confidentiality considerations involving the research participants.

Declaration of Artificial Intelligence (AI) Assistance

During the preparation of this manuscript, generative AI and AI-assisted technologies were used only to support language editing, grammar refinement, and manuscript formatting. All AI-assisted outputs were carefully reviewed, revised, and verified by the authors. The authors take full responsibility for the accuracy, validity, and integrity of the final manuscript.

Ethics Approval

This study was carried out in accordance with ethical principles in health research, including respect for respondents' autonomy, voluntary participation, confidentiality, and protection from potential harm. Ethical approval was granted by the Faculty of Public Health, Hasanuddin University, with approval number 1829/UN4.14.1/TP.01.02/2025. Prior to data collection, all respondents were informed about the purpose, benefits, procedures, and confidentiality of the study. They were also informed that their participation was voluntary and that they had the right to withdraw from the study at any stage without any consequences. Written informed consent was obtained from each respondent before the interview. Respondents' identities were protected by using codes instead of names, and all data were securely stored and used solely for research purposes.

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