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Determinants of Contraceptive Implant Use: A Cross-Sectional Study at Pematang Panggang IV Community Health Center in 2025

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Abstrak

Metode Kontrasepsi Jangka Panjang (MKJP), khususnya kontrasepsi implan, merupakan metode yang efektif dalam mencegah kehamilan yang tidak diinginkan. Namun, pemanfaatannya masih relatif rendah dibandingkan metode kontrasepsi jangka pendek, terutama di tingkat pelayanan kesehatan primer. Faktor sosial demografi diduga berperan dalam memengaruhi pemilihan kontrasepsi implan. Penelitian ini bertujuan untuk menganalisis hubungan usia, status pekerjaan, dan tingkat pendidikan dengan penggunaan kontrasepsi implan pada pasangan usia subur di wilayah kerja Puskesmas Pematang Panggang IV, Kecamatan Mesuji Raya. Penelitian ini menggunakan desain survei analitik dengan pendekatan potong lintang (cross-sectional) yang dilaksanakan pada bulan Juni 2025. Populasi penelitian adalah seluruh akseptor keluarga berencana aktif yang terdaftar di Puskesmas Pematang Panggang IV. Teknik pengambilan sampel menggunakan total sampling dengan jumlah sampel sebanyak 74 responden. Data dikumpulkan melalui kuesioner terstruktur dan data rekam medis. Analisis bivariat dilakukan menggunakan uji chi-square dengan perhitungan odds ratio (OR) dan interval kepercayaan 95% (95% CI). Hasil penelitian menunjukkan bahwa usia, status pekerjaan, dan tingkat pendidikan berhubungan secara signifikan dengan penggunaan kontrasepsi implan. Responden usia muda lebih berpeluang menggunakan kontrasepsi implan dibandingkan usia tua (OR = 5,20; p = 0,009). Responden yang bekerja memiliki peluang lebih besar menggunakan kontrasepsi implan dibandingkan yang tidak bekerja (OR = 6,27; p = 0,004). Selain itu, responden dengan pendidikan tinggi lebih berpeluang menggunakan kontrasepsi implan dibandingkan responden berpendidikan rendah (OR = 1,41; p = 0,032). Penelitian ini menyimpulkan bahwa usia, pekerjaan, dan pendidikan berperan penting dalam penggunaan kontrasepsi implan, sehingga diperlukan penguatan konseling dan intervensi KB yang terarah untuk meningkatkan pemanfaatannya di layanan kesehatan primer.

Kata kunci: kontrasepsi implan, MKJP, usia, pekerjaan, pendidikan

Abstract

Long-Term Contraceptive Methods (LMPs), particularly implants, are effective in preventing unwanted pregnancies. However, their utilization remains relatively low compared to short-term contraceptive methods, especially at the primary health care level. Sociodemographic factors are suspected to play a role in influencing the choice of implant contraception. This study aims to analyze the relationship between age, employment status, and education level with the use of implant contraception among fertile-age couples in the Pematang Panggang IV Community Health Center, Mesuji Raya District. This study used an analytical survey design with a cross-sectional approach conducted in June 2025. The study population was all active family planning acceptors registered at the Pematang Panggang IV Community Health Center. The sampling technique used total sampling with a sample size of 74 respondents. Data were collected through structured questionnaires and medical record data. Bivariate analysis was performed using the chi-square test with odds ratio (OR) calculations and 95% confidence intervals (95% CI). The results showed that age, employment status, and education level were significantly associated with the use of implant contraception. Younger respondents were more likely to use contraceptive implants than older respondents (OR = 5.20; p = 0.009). Employed respondents were more likely to use contraceptive implants than unemployed respondents (OR = 6.27; p = 0.004). Furthermore, respondents with higher education were more likely to use contraceptive implants than respondents with lower education (OR = 1.41; p = 0.032). This study concludes that age, occupation, and education play an important role in the use of contraceptive implants, so that targeted family planning counseling and interventions are needed to increase their use in primary health care.

Key words: *contraceptive implant, MKJP, age, occupation, education*

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INTRODUCTION

Long-Term Contraceptive Methods (LMPs) play a strategic role in supporting the success of the Family Planning (FP) program, a government effort to control population growth and improve maternal and family health (Gayatri, 2020; Harzif et al., 2019). Contraceptive services are not limited to medical procedures but also include information, communication, and education (IEC), counseling, health examinations to assess contraceptive eligibility, insertion and removal of contraceptive devices, and management of side effects and complications (Nurjaeni et al., 2021). The primary goal of LMPs is to prevent unwanted pregnancies and support healthy, targeted, and sustainable family planning through the selection of appropriate contraceptive methods, including LMPs such as intrauterine devices (IUDs), implants, and permanent contraceptive methods (tubectomy and vasectomy) (Setyorini, Lieskusumastuti, & Hanifah, 2022).

Globally, contraceptive use shows significant variation across regions (United Nations, 2019). In East and Southeast Asia, the IUD is the most widely used method (18.6%), while in Europe and North America, the pill (17.8%) and condoms (14.6%) are more prevalent. In Central and South Asia, female sterilization accounts for the highest proportion (21.8%), while in North Africa and West Asia, the pill (10.5%) and IUD (9.5%) are the primary methods. In Indonesia, data from the National Population and Family Planning Agency (BKKBN) shows that in 2020, the active participation rate of fertile couples (PUS) in family planning programs reached 67.6%. However, the majority of acceptors still use short-term methods, particularly injectables (72.9%) and pills (19.4%), while the use of long-term contraceptive methods (MKJP) is relatively low (Kemenkes RI, 2021).

The low utilization of long-term contraceptive methods (MKJP) is a significant concern, given that this method has been shown to be more effective, efficient, and sustainable in preventing pregnancy than non-MKJP methods (Harzif et al., 2019; Sari et al., 2024). The Ministry of Health (2021) emphasized that effective family planning services can contribute significantly to reducing maternal mortality by reducing the number of pregnancies and preventing high-risk pregnancies. In fact, it is estimated that up to one-third of maternal deaths can be prevented through the selection and use of appropriate contraceptive methods, particularly long-term contraceptive methods (MKJP) (WHO, 2018).

Local data also shows a similar pattern. According to the Palembang City Statistics Agency (BPS) in Figures 2024, the number of couples (PUS) was recorded at 113,016, with 111,171 couples (98.37%) actively participating in family planning. However, only 17,408 acceptors (15.66%) used long-term contraceptive methods, while 93,763 acceptors (84.34%) still used non-MKJP methods. This indicates that despite high family planning coverage, adoption of long-term contraceptive methods remains low and not in line with national policy recommendations (Damayanti et al., 2019).

A similar situation was observed in the Pematang Panggang IV Community Health Center (Puskesmas Pematang Panggang IV) in Mesuji Raya District. Medical record data from 2024 showed that out of 3,134 fertile couples, 810 were active family planning participants. The majority of acceptors used injectable methods (551) and pills (152), while the use of long-term contraceptive methods (MWJP) remained very limited, with 3 using IUDs and 62 using implants. This data demonstrates a gap between the high number of couples (PUS) and the low utilization of MKJP at the primary care level (Handayani et al., 2022).

The low adoption of MKJP is influenced not only by service availability but also by various behavioral and sociodemographic factors (Damayanti, Nisa, & Ariawan, 2019). Based on the Health Belief Model (HBM) and Andersen's Behavioral Model of Health Services Use, individual decisions regarding the use of health services, including contraception, are influenced by predisposing factors (age, education, parity, knowledge), enabling factors (access to services, availability of health workers, information), and need factors (perceived pregnancy risks and benefits of long-term contraceptive methods) (Mahendra et al., 2019). Perceptions of side effects, partner support, social norms, and the quality of family planning counseling also play a significant role in determining contraceptive method choice (Titaley et al., 2017).

Although various studies have addressed contraceptive use in general, studies specifically

analyzing the factors influencing long-term contraceptive use at the primary healthcare level, particularly in the Pematang Panggang IV Community Health Center (Puskesmas Pematang Panggang IV), are still limited (Veri et al., 2023). It is unclear how sociodemographic characteristics and behavioral factors relate to the low adoption of long-term contraceptive methods in the region. This constitutes a research gap that underpins the importance of this study.

Based on this description, the research question is: What factors influence the use of Long-Term Contraceptive Methods (LMPs) among fertile couples in the Pematang Panggang IV Community Health Center, Mesuji Raya District, in 2025?

This research is expected to provide scientific contributions in the form of empirical evidence regarding the determinants of LMP use at the primary care level, as well as serve as a basis for developing intervention strategies, improving the quality of family planning counseling, and formulating local data-based policies to increase the sustainable use of LMPs.

RESEARCH METHODS

This study is an analytical survey study with a cross-sectional design conducted at the Pematang Panggang IV Community Health Center, Mesuji Raya District, in June 2025. This design was chosen to analyze the relationship between socio-demographic and behavioral factors with the use of Long-Term Contraceptive Methods (LTMs) in fertile age couples (PUS) in one observation period.

Population and Sample

The population in this study was all fertile-age couples (PUS) actively participating in family planning (KB) registered in the Pematang Panggang IV Community Health Center (Puskesmas) working area in 2025. Based on Puskesmas data, the number of active PUS couples participating in family planning was 74.

The study sample was determined by total sampling, namely all active PUS couples participating in family planning who met the inclusion and exclusion criteria, resulting in a sample size of 74 respondents.

Inclusion and Exclusion Criteria

The inclusion criteria for this study included:

1. Couples of childbearing age (15–49 years old).
2. Registered as active family planning participants at the Pematang Panggang IV Community Health Center.
3. Using modern contraceptive methods (MKJP or non-MKJP).
4. Willingness to participate in the study.

Exclusion criteria included:

1. Couples who were absent or could not be contacted during data collection.
2. Incomplete medical records.
3. Respondents who refused to provide informed consent.

Data Sources and Data Collection Methods

The data used in this study comprise both primary and secondary data.

1. Primary data were obtained through a structured questionnaire completed by respondents.
2. Secondary data were obtained from medical records and family planning reports from the Pematang Panggang IV Community Health Center.

The research instrument, the questionnaire, was tested for validity and reliability before being used in data collection..

Data Analysis

Data analysis was conducted univariately to describe the frequency distribution of each variable, and bivariately to analyze the relationship between the independent variables and the use of long-term contraceptive methods (MWJP). The statistical test used was the chi-square test, with a significance level of $\alpha = 0.05$.

Bias Control

To control for selection bias, this study used a total sampling technique of all active family

planning participants (PUS). Information bias was minimized by using the same structured questionnaire for all respondents and by collecting secondary data from official sources at the Community Health Center.

Research Ethics

This study has obtained ethical approval from the authorized ethics committee. All respondents were given an explanation of the research objectives and procedures and signed an informed consent form. The confidentiality of respondents' identities is guaranteed and the data is only used for research purposes.

RESULTS AND DISCUSSION

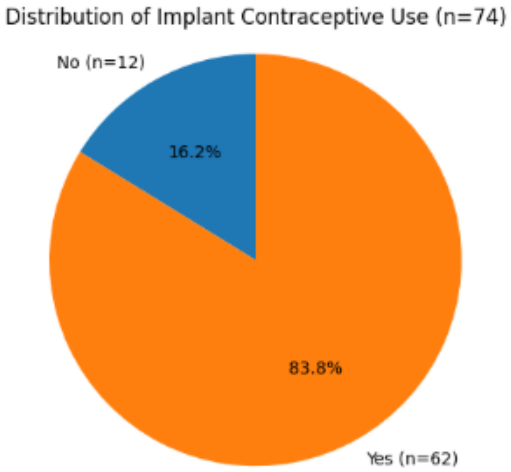

Figure 1. Frequency distribution diagram of contraceptive implant use

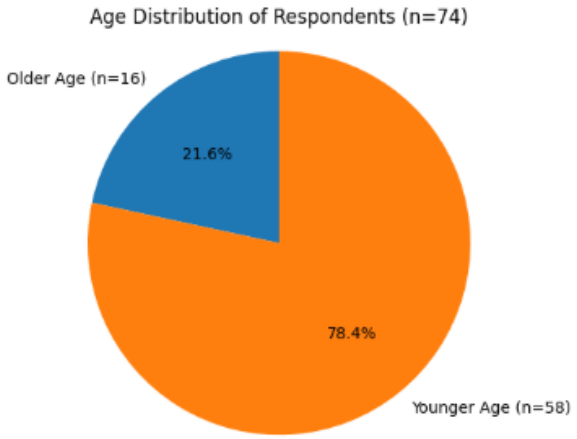

Figure 2. Frequency Distribution Diagram of Age

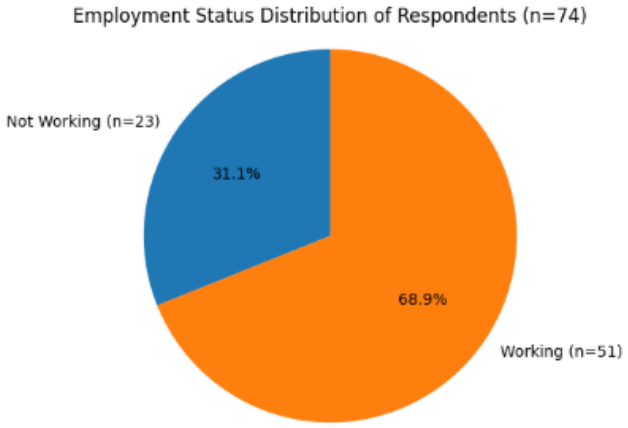

Figure 3. Frequency Distribution Diagram of Work

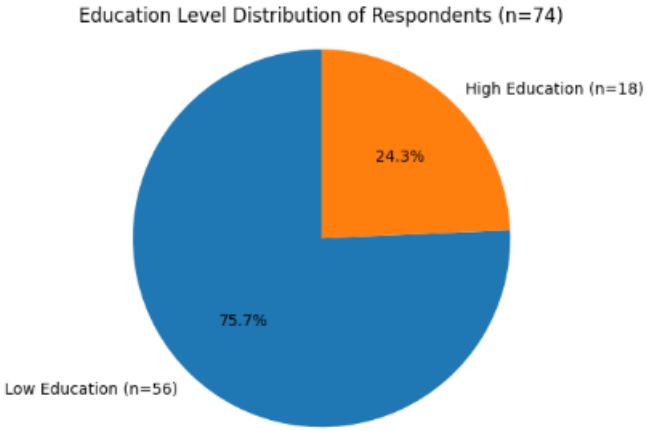

Figure 4. Frequency Distribution Diagram of Education

Table 1. Relationship between Age and Contraceptive Implants

Age	*Contraceptive Implants*				Total		*OR*	*p Value*
	No		Yes					
	n	%	n	%	n	%		
Old	6	37.5	6	10.3	12	16.2	5,200	0,009
Young	10	62.5	52	89.7	62	83.8		
Total	16	100	58	100	74	100		

The analysis results were obtained from 74 respondents, there were 12 mothers with old age, where 6 respondents (37.5%) did not use contraceptive implants and 6 respondents (10.3%) used them. Meanwhile, from 62 mothers with young age, 10 respondents (62.5%) did not use contraceptive implants, and 52 respondents (89.7%) used contraceptive implants. The results of the statistical test obtained a p Value = 0.009, so it can be concluded that there is a statistically

significant relationship between age and the use of contraceptive implants. From the analysis results also obtained an OR value = 5.200, meaning that respondents with young age have a 5.200 times chance of choosing contraceptive implants compared to respondents with old age.

These findings align with the theory that age is an intrinsic factor influencing decision-making in choosing a contraceptive method. The age range of 20–35 is considered a safe reproductive age because reproductive function and hormonal systems are at optimal levels.

Maternal age is also important in determining pregnancy risk, as being too young (<20 years) or too old (>35 years) can increase the risk of complications during pregnancy and childbirth (Arvicha & Kasmiati, 2023). The results of this study are consistent with several previous studies, including those by Sugiana, E., Hamid, S. A., & Sari, E. P. (2021) who found a p-value of 0.028, indicating a significant association between age and contraceptive implant use at the Gumawang Community Health Center, East OKU Regency, South Sumatra. Anita, A. B., Aisyah, S., & Anggraini, A. (2024) obtained a p-value of 0.001, proving a significant relationship between age and the use of implant contraception at the Peninjauan Community Health Center in 2023. Anggraini, M., Priyatno, A. D., & Zaman, C. A. (2024) reported p = 0.000, indicating a significant relationship between age and the choice of implant contraception in women of childbearing age at the Pembina Community Health Center in Palembang City in 2024. The researcher's assumption in this study is that young mothers tend to be reluctant to use implant contraception because they still want to have more children, while older or adult mothers prefer implants because they are effective, practical and long-term.

Table 2. Relationship between Work and Contraceptive Implants

Work	*Contraceptive Implants*				Total		*OR*	*p Value*
	No		Yes					
	n	%	n	%	n	%		
Not Working	8	34,8	4	7,8	12	16,2	6,265	0,004
Working	15	65,2	47	92,2	62	83,8		
Total	23	100	51	100	74	100		

The analysis results were obtained from 74 respondents, there were 12 mothers who did not work, where 8 respondents (34.8%) did not use implant contraception and 4 respondents (7.8%) used it. Meanwhile, from 62 working mothers, 15 respondents (65.2%) did not use implant contraception and 47 respondents (92.2%) used implant contraception. The results of the statistical test obtained a p Value = 0.004, so it can be concluded that there is a statistically significant relationship between Work and Implant contraception. From the results of the analysis, an OR value of 6.267 was also obtained, meaning that respondents who work have a 6.267 times greater chance of using implant contraception compared to respondents who do not work.

These findings align with the theory that work serves not only as a source of income but also as a form of self-actualization, application of skills, and contribution to society. According to Faris, M.F. (2025), work is a set of skills and competencies that must be continuously developed, so that it is not merely a means of earning a living but also a form of self-actualization.

However, research by Kurniawan, D., & Pertiwi, F.D. (2021) in Katulampa Village, Bogor City in 2019 showed different results, with a Chi-Square test yielding a p-value of 1.000, indicating no significant relationship between employment and choice of implantable contraceptive method. The Odds Ratio (OR) of 0.657 indicates that unemployed respondents were 0.657 times more likely to choose non-implantable contraceptives than employed respondents. The researchers assume that employed mothers are more likely to choose implantable contraceptives due to their practicality and long-term effectiveness. Meanwhile, unemployed mothers generally prefer short-term contraceptive methods. However, some mothers who do not work still use implants, depending on family support and easy access to health services.

Table 3. Relationship between Work and Contraceptive Implants

Education Level	*Contraceptive Implants*				Total		*OR*	*p Value*
	No		Yes					
	n	%	n	%	n	%		
Low	12	21,4	0	0	12	16,2	1,409	0,032
High	44	78,6	18	100	62	83,8		
Total	56	100	18	100	74	100		

The results of the analysis were obtained from 74 respondents, there were 12 mothers with low education, where 12 respondents (21.4%) did not use implant contraception and 0 respondents (0.0%) used it. Meanwhile, from 62 mothers with higher education, 44 respondents (78.6%) did not use implant contraception and 18 respondents (100%) used implant contraception. The results of the statistical test obtained a p Value = 0.032, so it can be concluded that there is a statistically significant relationship between Occupation and Implant contraception. From the results of the analysis, an OR value of 1.409 was also obtained, meaning that respondents with higher education have a 1.409 times greater chance of using implant contraception compared to respondents with low education.

Education itself is everything taught by adults to individuals considered immature, including knowledge, culture, and values that are transformed into the next generation (Tubagus, M., Fathurohman, A., & Aslan, A. 2023).

The results of this study align with the findings of Kurniawan, D., & Pertiwi, F. D. (2021) in Katulampa Village, Bogor City in 2019. Chi-square analysis showed a p-value of 0.084, indicating a significant relationship between education and the choice of implantable contraceptive methods. The Odds Ratio (OR) value of 0.257 indicates that respondents with low education were 0.257 times more likely to choose non-implantable contraception than respondents with higher education. The researchers assume that mothers with higher education are more likely to choose implantable contraception because they have greater knowledge and awareness. The greater the understanding and awareness of the benefits, mechanisms of action, and side effects of long-term contraception (including implants), the more likely they are to choose this method. On the other hand, mothers with low education more often choose short-term or commonly used contraceptive methods, such as pills and injections, due to limited knowledge and still being influenced by certain myths or concerns.

CONCLUSION

This study demonstrates that age, employment status, and education level are significantly associated with the use of contraceptive implants among women of reproductive age. Statistical analysis showed that age was significantly related to implant use (p = 0.009), with younger women being 5.2 times more likely to use implant contraception compared to older women. Employment status also had a significant relationship with implant use (p = 0.004), indicating that working women had a 6.267 times higher likelihood of using implant contraception than non-working women. In addition, education level was significantly associated with implant contraceptive use (p = 0.032), where women with higher education had a 1.409 times greater chance of using implants compared to those with lower education levels.

These findings suggest that socio-demographic factors play an important role in contraceptive decision-making. Younger age, being employed, and having higher education tend to increase awareness, access, and acceptance of long-acting contraceptive methods such as implants. Therefore, strengthening family planning programs through targeted counseling, improved access to information, and tailored interventions especially for older, less educated, and non-working women is essential to increase the utilization of implant contraception. Such efforts are expected to contribute to more effective family planning services and improved maternal and reproductive health outcomes.

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