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Determinants of Reusing Implant Contraception Through The Safari KB Program in Surakarta

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ABSTRACT

Purpose This research analyzes the characteristics and determinants of repeat users of Implan contraception in Surakarta. **Method** This is a quantitative-research using a cross-sectional survey approach with 117 purposively selected samples. Data was collected using a questionnaire that has been tested for validity and reliability using the Cronbach's Alpha formula, with a reference value of ≥ 0.07. The data was analyzed through univariate and bivariate analyses using the chi-square test and multivariate analysis with logistic regression. The analysis was developed through a three-stage *backward conditional* modeling process. The first stage involved screening variables that met the criteria for inclusion in multivariate analysis. The second stage analyzed variables that were significantly related to the *dependent* variable. In the third stage, the variables contributing the most to the dependent variable were determined. **Results:** In the first stage of modeling analysis, it was found that the education level variable could not be included in the multivariable analysis. In the second stage, six variables were analyzed, and only three variables showed a strong and significant relationship, which were employment status with an Odds Ratio (OR) of 3.05, parity with an OR of 4.62, and the age of the last child with an OR of 2. In the third stage, by examining the magnitude of the Odds Ratio, it was determined that the parity variable with an OR of 4.62 was the strongest variable related to the dependent variable. **Conclusion**; The characteristics of repeated Implan method users are working mothers, having children aged at least three years, having at least two children, being married for more than 10 years, and having both male and female children.

Keywords: Modeling, repeat use of implant, Safari KB

1. INTRODUCTION

Family planning is an effort towards marriage maturity and birth spacing to achieve a small, happy, and prosperous family [1]. Contraceptive methods, as part of family planning, should be chosen carefully by couples. The selection of contraceptive methods is influenced by health factors, affordability, ease of access, as well as cultural norms [2]., [3]., [4]. Several research outcomes indicate that women considering contraceptive use need to consider several important factors: it should not disrupt their health, be easily accessible, affordable, not interfere with coitus, and be easy to use. Additionally, the purpose of using a contraceptive device or method also plays a significant role in a woman's choice of contraceptive method [5]., [6]

Birth spacing is achieved by using contraceptives that are easily accessible and affordable. Access can be through the nearest healthcare services such as midwives, private clinics, public health centers, hospitals (for long-acting contraceptive methods). To facilitate the public, the government has launched the SAFARI KB program. This program provides various free services, including the provision and removal of contraceptives. Additionally, there is education provided on reproductive health [7]

The data provided by BPS through the website https://jateng.bps.go.id/ shows that contraceptive use in Central Java has declined since the pandemic. In 2019, there were 4.884.608 family planning acceptors, and in 2020,

this number decreased to 4.757.722. Furthermore, in 2021, it decreased again to 4,508,188. In Surakarta, there was also a decline. In 2019, there were 106,707 acceptors, which decreased to 43,260 in 2020, and in 2021, it slightly increased to 43,467 [8].

The use of contraception is an appropriate strategy to control the continuously increasing population growth from year to year. The use of Long-Acting Contraceptive Methods (LACM) is more effective in preventing pregnancy compared to non-LACM methods [9] (Teal and Edelman, 2021)[11] LACM includes IUD, male and female sterilization (MOW and MOP), and implants, which are expected to be preferred by the community. Implants have been mentioned in some previous research as being more effective in preventing pregnancy. [12]., [11]. However, based on the report on the implementation of the national family planning program in the city of Surakarta in 2022, it was stated that the achievement of Long-Acting Contraceptive Methods (LACM) was only 29.08%. The low usage of LACM from previous research during the COVID-19 pandemic is influenced by several factors such as a lack of public understanding about contraception, low purchasing power, limited access to services, and the support of husbands for contraceptive use [13] The impact of the COVID-19 pandemic has also been a hindrance for women of childbearing age to access contraception. The decrease in contraceptive use during COVID-19 also depends on the chosen contraceptive method [13]. In contrast, research in the United States, specifically New York, has reported an increase in the use of long-acting contraceptive methods from 14% to 18% [14]

Many women struggle with deciding on the type of contraception to use. This is not only due to the limited methods available but also due to a lack of knowledge about the requirements and safety of these contraceptive methods. Various factors that need to be considered include health status, side effects, and the consequences of failure or unintended pregnancy [1]. No contraceptive method is safe and effective for all acceptors, as each has individual suitability and compatibility. The safety of the method, efficacy, return of fertility are not the only considerations influencing contraceptive choice, but ease of use, convenience, the impact on sexual relationships, as well as spousal support and religious beliefs also play a role in contraceptive selection. [15] A research on contraceptive use conducted by Agustini in Puger Jember in 2015 found that contraceptive use is related to age, the number of living children, maternal education, the location of family planning services, and the cost of contraception, but it is not related to the desired number of children or family income [7]., [16].

The diversity of factors related to contraceptive use poses a challenge for healthcare professionals in increasing the utilization of Long-Acting Reversible Contraceptive Methods (MKJP). Subsequently, the Surakarta Population Control and Family Planning Agency has made efforts to implement the SAFARI KB program. This program facilitates the free installation of MKJP contraceptives. [Source: https://dp3ap2kb.surakarta.go.id/safari-kb-bantu-kontrol-angka-kelahiran/]

The Anisa Husada Clinic and Aisyiyah Medical Center are selected clinics that provide SAFARI KB services with long-term contraceptive methods such as IUD and Implan for free. Based on interviews with the owners of both clinics, it is explained that Implan acceptors are increasing, and there are even acceptors who use the same contraceptive method, Implan, for two consecutive periods. They do not want to switch to other contraceptive methods. Therefore, the researcher is interested in further analyzing the determinants of consecutive Implan contraceptive use at the Anisa Husada Clinic in Surakarta and the AMC Surakarta..

Research on contraceptive use has been conducted extensively in several countries, including Indonesia. However, as far as the researcher's investigation from articles in reputable journals goes, there has been no analysis of the determining factors for acceptors who repeatedly use Implan contraception in two consecutive periods. Previous research has mostly clinically analyzed the side effects of contraceptive use and examined the demographic characteristics of modern contraceptive users such as IUDs, Pills, MOP, MOW, Condoms, and Implan. They did not specifically address the determinants of acceptors repeatedly using the same method. Therefore, this research aims to analyze the determinants of Long-Term Contraceptive reusers, especially Implan, in two consecutive periods in Surakarta through the Safari KB program in Surakarta.

2. METHOD

This research is an analytical survey with a cross-sectional data collection approach. Data collection was conducted using an instrument that had been validated using the Pearson product-moment correlation test. Each item's score was correlated with the total score. An item was considered valid if the calculated r value was greater than the r-table value or if its significance was less than 0.05. Reliability testing was performed using the Cronbach's Alpha formula, with a reference value of ≥ 0.07. Secondary data for this research was obtained from the Surakarta city P2KB office and several selected clinics.

The sample consists of acceptors registered in the SAFARI Family Planning Program. In the first stage of sample selection, the total number of Implan contraception acceptors in the MKJP Safari KB program was 586 individuals. In the second stage, from the MKJP users, we selected 128 acceptors who use Implan contraception. In the third stage, based on inclusion criteria, 117 acceptors were chosen as the selected sample who would be provided with questionnaires to be filled out. The research was conducted at a clinic in collaboration with the Surakarta city government from August 2022 to June 2023, during SAFARI Family Planning Program activities. Data collection took place during SAFARI Family Planning Program activities.

Univariate analysis was conducted to describe each variable individually, involving a total of eight variables. Bivariate analysis was performed to test the hypothesis of the association between independent variables and dependent variables, as well as to screen variables that met the criteria for entry into multivariate analysis. Multivariate analysis, using the backward conditional method in three stages, was chosen to determine the strongest variables related to the reuse of Implan contraception. In the first stage, variables significantly associated with the dependent variable were selected. In the second stage, specifically the variables that were significantly associated with the dependent variable were further analyzed to identify which variables remained significantly associated and had the highest level of significance. In the third stage, the analysis focused on the strongest variables related to the reuse of Implan contraception by examining the odds ratio values.This research has obtained ethical clearance from LPPM Universitas Aisyiyah Surakarta with Number number. 076/V/AUEC/2023

3. RESULTS AND DISCUSSION

3.1 RESULTS

3.1.1 Univariate Analysis Results

Table 1 of the univariate analysis results indicates that the majority of respondents are users of the new Implan contraception method, with 52 respondents (44.4%), while 65 respondents (55.06%) have reused it. Among the respondents, 70 (59.8%) are of childbearing age, and 47 (40.2%) are not. In terms of employment status, the survey results show that 57 respondents (48.7%) are employed and earn a salary, while 60 (51.3%) are homemakers. Based on their educational status, 101 respondents (86.3%) have lower education levels, while 16 respondents (13.7%) have higher education degrees. Furthermore, 66 respondents (56.4%) have a youngest child under the age of four, while 51 respondents (43.6%) have a youngest child over three years old. In terms of parity, there are 85 respondents (72.6%) with fewer than three children and 32 respondents (27.4%) with more than two children.

The characteristics of women as respondents in this research, based on the duration of marriage, are categorized into two groups: those married for up to 10 years, comprising 51 respondents (43.6%), and those married for more than 10 years, comprising 66 respondents (56.4%). In the analysis of the gender of previously born children, 63 respondents (53.8%) had both male and female children, while 54 respondents (46.2%) had children of only one gender, either male or female.

Table 1. Characteristics of Reimplan Contraseptive In Anisa Husada and AMC Clinik in Surakarta

No.	Characteristics	n = 117	%
1	**Repeat implant Contraceptive Use**		
	Yes repeat implant	65	55.6
	Not Repeat implant	52	44.4
2	**Respondens Age (RA)**		
	Fertile age (20-35)	70	59.8
	Infertile Age (<20 & >35)	47	40.2
3	**Employment Status (ES)**		
	Employed	57	48.7
	Unemployed	60	51.3
4	**Level of Education (L E)**		
	SD	4	3.4
	SMP	30	25.6
	SMA	67	57.3
	PT	16	13.7
	Tinggi (PT)	16	13.7
5	**Age of Last Children (ALC)**		
	Under 4 Years Old	66	56.4
	Above 3 Years Old	51	43.6
6	**Parity (P)**		
	1	85	72.6
	≥2	32	27.4
7	**Long married (LM)**		
	≤ 10 years	51	43.6
	>10 years	66	56.4
8	**Child's Gender**		
	Have Male and female genders	63	53.8
	One Gender	54	46.2

Source: Primer Data, 2023

Table 1 presents the results of univariate analysis with 117 participants in this research. Out of the respondents, 65 individuals (55.6%) opted to reuse Implan contraception. Additionally, 70 respondents (59.8%) were of childbearing age. Among the 117 respondents, 57 (48.7%) worked outside the home to earn a salary. Based on their educational level, 101 (86.3%) had lower education levels, which included elementary, junior high, and high school. Regarding the age of the youngest child, 66 respondents (56.4%) had a youngest child who was three years old or younger. When considering the number of children, 85 respondents (72.6%) had a maximum of two children. Examining the mothers' characteristics in terms of the duration of marriage, it was found that 51 (43.6%) had been married for 1-10 years. Lastly, in the analysis of the gender of previously born children, 63 respondents (53.8%) had a complete combination of both male and female children.

3.1.2 Bivariate Analisys Results

Bivariate analysis was conducted with the aim of determining the relationship between each independent variable and the dependent variable (the decision to reuse IMPLAN contraception). The analysis results showed that out of seven independent variables, only five variables were significantly associated with the dependent variable, with very significant p-values of 0.000, 0.001, and 0.002. However, two variables did not show significant results. These two variables were the mother's level of education, with a p-value of 0.253, and the duration of marriage, with a p-value of 0.080.

The variables that were initially analyzed using bivariate analysis were subsequently subjected to multivariate analysis to determine which variables were most strongly associated with the decision to reuse the Implan contraceptive method. The requirement for multivariate analysis is that in the bivariate analysis results, the p-value should be less than 0.25. Since the p-value for the education variable is 0.253, this variable cannot be included in the multivariate analysis. Therefore, only 6 variables will be analyzed in the multivariate analysis.

The final results of the multivariate analysis, conducted in three sequential steps, revealed that one variable was not significantly associated with the dependent variable. This variable was the respondent's age, with a p-value of less than 0.05. Only three variables were found to be related. These variables are employment status, the number of children, and the age of the youngest child. The meaning of the multivariate analysis in this research is that women who work, women with a maximum of two children, and women who still have children under the age of three are more likely to use the Implan contraceptive method again.

Table 2. Bivariate Analysis of Characteristics of the Decision to Reuse IMPLAN Contraception

No	Variable	Reusing Implan	New Implan	P value (CI 95%)	OR
1	Respondens Age (RA)				
	a. Childbearing age	23	47	0.002	3.292
	b. At-risk age	18	29	(1.523-9.119)	
2	Employment Status (ES)			0.000	4.024
	a. Employed	35	22	(1.855-8.729)	
	b. Homemaker	17	43		
3	Level of Education (L E)				
	a. Elementary School (SD)	2	2	0.253	0.522
	b. Junior High School (SMP)	14	16	(0.169-1.612)	
	c. Senior High School (SMA)	30	37		
	Higher Education (PT)	5	11		
4	Age of Last Children (ALC)				
	a. Less than three years	37	14	0.000	8.986
	b. More than three years	15	51	(3,870-20.864)	
5	Parity (P)				
	a. One/Two children	29	56	0.000	4.935
	b. More than two children	23	9	(2.023-12.036)	
6	Long married (LM)				
	a. Less than 10 years	13	33	0.080	1.948
	b. More than 10 years	34	32	(0.920-4.125)	
7	Child's Gender				
	a. Having children of one gender	15	39	0.001	3.700
	b. Having both male and female children	37	28	(1.699-8.060	

Table 2. Presents the results of bivariate analysis as a variable screening stage that meets the criteria for entry into multivariate analysis. The analysis results indicate that the level of education and the duration of marriage are not significantly associated, with a p-value of 0.253 and an Odds Ratio of 0.522 for education, and a p-value of 0.080 and an Odds Ratio of 1.948 for the duration of marriage. The criteria for multivariate analysis require a p-value < 0.25, which means that the level of education cannot be included in the multivariate analysis. Thus, five variables that are significantly associated are age, employment status, age of the youngest child, parity, and gender

of previously born children.

3.1.3 Multivariate Analysis Results

Table 3. Multivariate Analysis of Characteristics and Determinants of the Decision to Reuse IMPLAN Contraception

No	Variable	P value (CI 95%)	B (beta)/ OR	P value (CI 95%)	B (beta)/ OR	P value (CI 95%)	B (beta)/ OR
		Step 1		**Step 2**		**Step 3**	
1	Parity a. One/two children b. More than two children	0.007 (0.073-0.654)	-1.520 **4.566**	0.007 (0.075-0.660)	-1.505 **4.545**	0.005 (0.073-0.635)	-1.534 **4.629**
2	Employment Status (ES) a. Employed b. Homemaker	0.027 (0.131-0.886)	-1.078 **2.94**	0.028 (0.132-0.891)	-1.072 **2.923**	0.021 (0.127-0.842)	-1.119/ **3.05**
3	Age of Last Children (ALC) a. Less than three years b. More than three years	0.003 (0.87-0.603)	-1.472 **3.344**	0.003 (0.88-0.606)	-1.466 **4. 32**	0.001 (0.078-0.511)	-1.610 **2.00**
4	Respondens Age (RA) a. Childbearing age b. At-risk age	0.128 (0.152-1.268)	-0.822/ **2.277**	0.133 (0.80-1.255)	-.745 **2.10**		
5	Child's Gender a. One gender of children b. Having both male and female children	0.141 (0.187-1.268)	-0.719 0.487 **2.053**	0.150 (0.195-1.268)	-.693 **2.0**		
6	Long married (LM) a. Less than 10 years b. More than 10 years	0.716 (0.430-3.419)	0.192 **1.212**				

Based on the variable screening test results, the level of education was not included in the multivariate analysis. Therefore, only six variables were analyzed. The Backward method was used, where in the first step, all variables were included in the logistic regression analysis as the initial model. These variables were the mother's age, employment status, parity, age of the youngest child, gender of previously born children, and duration of marriage. The analysis results indicate that the duration of marriage was removed from the system due to its very low level of significance.

In the second stage, only five variables were further analyzed to assess the significance of each variable. The results showed that two variables were not significant: the mother's age and the child's gender. Moving forward, in the third model of multivariate logistic regression analysis, three variables were analyzed, namely: Employment Status, Parity, and the age of the youngest child. The age variable is not significantly associated with the decision to reuse Implan contraception, with a p-value of 0.089. However, the odds ratio is quite high at 2.29, meaning that women of childbearing age are 2.29 times more likely to decide to use Implan contraception again compared to those at risk. Employment status is related to the decision to reuse Implan contraception, with a p-value of 0.021 and an odds ratio of 3.05. This means that working women are 3.05 times more likely to reuse Implan contraception compared to stay-at-home mothers who do not work. The analysis of the parity variable also shows a significant association with the decision to reuse Implan contraception, with a p-value of 0.005 and an odds ratio of 4.629. This indicates that women who have only one or two children are more likely to reuse Implan contraception compared to those with more than two children. Furthermore, the analysis of the variable of the age of the youngest child reveals a significant relationship with a p-value of 0.001 and an odds ratio of 2.0. This means that women whose youngest child is under three years old are twice as likely to reuse Implan contraception compared to those whose youngest child is over three years old.

3.2 DISCUSSION

3.2.1 Age of Acceptors

Age in this research is categorized into three groups: women of childbearing age (20-35 years), those at risk under 20 years old, and those over 35 years old. For the results of multivariate analysis, it indicates that the age variable in the first, second, and third models is not significantly associated with the decision to continue using Implan contraception. However, in the third model, the odds ratio is quite high, which means that women of childbearing age (20-35 years) are 2.29 times more likely to continue using Implan contraception. This research outcome differs from a research by Laksono in 2022, which found that younger women still desire to have more children, so they tend to be reluctant to use contraception [17]. This research also differs from previous research conducted by Ahmed Zohirul Islam in Bangladesh, where age was significantly associated with contraceptive use. However, he explained that the majority of contraceptive users were those who were still of childbearing age [18]., [19].,[20].

For women who have already had children and are still fertile, in several studies, they tend to prefer using contraception. This choice is made to maintain birth spacing. On the other hand, women aged over 34 years are often not interested in using contraception because they are approaching menopause and engage in sexual intercourse less frequently. In line with Wado Y.D in Ethiopia, it is explained that adolescent women and those aged between 40-49 tend to be unwilling to use long-term contraception [21]. However, other research explains that even at the age of over 40, with a low pregnancy risk and lower fertility, it is still necessary to use contraception if one does not wish to become pregnant again. Women under the age of 55 can still use Implan contraception [22]. Previous research in the UK has shown that women over 40 still use contraceptives like IUDs, and in the United States, Canada, and the UK, women of a certain age still commonly use oral contraceptives and condoms [22]

3.2.2 Employment Status

Employment status, as indicated by the multivariate analysis in both the first, second, and third models, demonstrates a significant relationship with the decision to continue using Implan contraception, with p-values less than 0.05. The odds ratio values in the first through third models consistently remain quite high, at 2.94, 2.92, and 3.05. The significance of the numbers in the third model, as an example, is that working women are 3.05 times more likely to decide to use Implan contraception. This research aligns with several previous researchers concerning the variable of employment status and contraceptive use. They found that working women tend to have a higher likelihood of using contraception compared to women who are solely homemakers [18]., [23].,[24].,(Laksono, Rohmah and Megatsari, 2022)., (Lachiewicz, Hailstorks and Kancherla, 2023).

Referring to the outcomes of previous research, the use of contraception empowers women to achieve high levels of success, ensuring that their careers are not hindered, and it enables them to limit themselves to having no more than one child or to prevent the occurrence of subsequent pregnancies, allowing them ample time to work effectively [26]. Working women require sufficient time for their jobs and career success, so they make an effort to use contraceptive methods. Moreover, working women earn an income, which makes them feel capable of accessing contraceptive devices or long-term contraceptive methods, which are indeed more expensive.

3.2.3 Parity

Parity is defined as the number of children born and still alive up to the point of this research. Parity is categorized into one/two children and more than two children. In this research, the majority of respondents have one or two children (72.6%), and out of the 72.6% who continued to use Implan contraception, 34.1% did so. Implan is an effective method of contraception; however, not all women decide to use this contraceptive method. The results of the multivariable analysis using logistic regression in all three analytical models, namely models one, two, and three, indicate that parity is associated with the decision to continue using Implan contraception, with consecutive p-values of 0.007, 0.007, and 0.005, and an odds ratio of 4.6 in the third model. This means that women with one or two children are 4.6 times more likely to decide to continue using Implan compared to those with more than two children. This can be explained by the fact that women who have more than two children are approaching menopause in terms of age, reducing their likelihood of having more children. The fertility level of women decreases with increasing age [27]. These outcomes contrast with a research by Luput in 2021, which found that parity is not statistically related to the decision to continue using Implan contraception. However, Luput explains that multiparous women still use contraceptive methods because they no longer believe in the slogan "more children, more blessings. [28].

3.2.4 The Age of the Youngest Child

In this research, the age of the youngest child was categorized into two groups: less than or equal to three years and more than three years. The multivariable analysis revealed a significant association between the age of the youngest child and the decision to use Implan contraception, with p-values of 0.003, 0.003, and 0.001 in the first, second, and third models, respectively. The odds ratio in the third model is 2, indicating that women with a youngest child aged less than three years are twice as likely to continue using Implan compared to those with a youngest child aged more than three years.

The youngest child who is still a toddler requires continued care from their parents to ensure the child's well-being. This can be analogized by the notion that there should be a sufficient time gap between the birth of one child and the next, allowing the mother to provide optimal care, and enabling the child to grow strong and self-reliant. Previous research has demonstrated that a birth interval of less than two years significantly increases the risk of infant mortality by twofold [29]. Additionally, other studies have indicated that a birth interval of less than two years is associated with an increased risk of delivering a low birth weight baby [30] Based on the phenomena elucidated through the aforementioned research outcomes, it can be inferred that contraceptive use contributes to the prevention of maternal and child mortality [31].

4. CONCLUSION

Based on the research outcomes, it can be concluded that the characteristics of Implan contraceptive users are predominantly women of childbearing age (20-35 years old), primarily homemakers, with an educational level of high school or below. In terms of the age of their youngest child, most of them have children aged three years or younger, with a maximum of two children, and a majority have been married for more than 10 years. The gender of the children previously born to them is mostly a mix of both boys and girls. The results of multivariable analysis using three analytical models indicate that only four variables are strongly and significantly associated with the decision to continue using Implan contraception. These variables are the woman's age, employment status, parity, and the age of the youngest child. Women of childbearing age have an odds ratio (OR) of 2.29, employed women have an OR of 3.05, multiparous women have an OR of 4.62, and women with children under the age of three have an OR of 2 in deciding to continue using Implan contraception. As a recommendation, education on the use of long-term contraceptive methods like Implan should be conducted more intensively, targeting women of childbearing age, working women, multiparous women, and those with children under three years of age.

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REFERENCES

[1] UNDANG UNDANG REPUBLIK INDONESIA, "Undang-Undang Republik Indonesia Nomor 10 Tahun 1992 Tentang Perkembangan Kependudukan Dan Pembangunan Keluarga Sejahtera," *Presiden Republik Indonesia*, pp. 1–42, 1992.

[2] L. Claringbold, L. Sanci, and M. Temple-smith, "AJGP-06-2019-Research-Claringbold-Factors-Women-WEB," vol. 48, no. 6, pp. 389–394, 2019.

[3] A. Namasivayam, P. J. Schluter, S. Namutamba, and S. Lovell, "Understanding the contextual and cultural influences on women's modern contraceptive use in East Uganda: A qualitative study," *PLOS Global Public Health*, vol. 2, no. 8, p. e0000545, 2022, doi: 10.1371/journal.pgph.0000545.

[4] H. T. Saleem, J. G. Rosen, C. Quinn, A. Duggaraju, and C. E. Kennedy, "Contraception values and preferences of people living with HIV: A systematic review," *Contraception*, vol. 111, pp. 48–60, 2022, doi: 10.1016/j.contraception.2021.10.014.

[5] S. Chowdhury and P. pratim Chakraborty, "Universal health coverage - There is more to it than meets the eye," *J Family Med Prim Care*, vol. 6, no. 2, pp. 169–170, 2017, doi: 10.4103/jfmpc.jfmpc.

[6] K. T. Gashaye *et al.*, "Reasons for modern contraceptives choice and long-acting reversible contraceptives early removal in Amhara Region, Northwest Ethiopia; qualitative approach," *BMC Women's Health*, vol. 23, no. 1, pp. 1–7, 2023, doi: 10.1186/s12905-023-02375-3.

[7] R. Agustini, D. M. Wati, and A. Ramani, "Kesesuaian Penggunaan Alat Kontrasepsi Berdasarkan Permintaan KB pada Pasangan Usia Subur (PUS) di Kecamatan Puger Kabupaten Jember," *e-Jurnal Pustaka Kesehatan*, vol. 3, no. 1, pp. 155–162, 2015.

[8] Badan Pusat Statistik, *Analisis Profil Penduduk Indonesia*. 2022.

[9] BKKBN, "Lakip Bkkbn 2018," *Bkkbn*, vol. 53, no. 9, pp. 1689–1699, 2018.

[10] S. Teal and A. Edelman, "Contraception Selection, Effectiveness, and Adverse Effects: A Review," *Jama*, vol. 326, no. 24, pp. 2507–2518, 2021, doi: 10.1001/jama.2021.21392.

[11] M. L. Rocca, A. R. Palumbo, F. Visconti, and C. Di Carlo, "Safety and benefits of contraceptives implants: A systematic review," *Pharmaceuticals*, vol. 14, no. 6, pp. 1–26, 2021, doi: 10.3390/ph14060548.
[12] L. E. Britton, A. Alspaugh, M. Z. Greene, and M. R. McLemore, "CE: An Evidence-Based Update on Contraception," *AJN, American Journal of Nursing*, vol. 120, no. 2, pp. 22–33, 2020, doi: 10.1097/01.naj.0000654304.29632.a7.
[13] A. Dasgupta, V. Kantorová, and P. Ueffing, "The impact of the COVID-19 crisis on meeting needs for family planning: A global scenario by contraceptive methods used," *Gates Open Research*, vol. 4, pp. 1–22, 2020, doi: 10.12688/gatesopenres.13148.2.
[14] M. L. Kavanaugh and E. Pliskin, "Use of contraception among reproductive-aged women in the United States, 2014 and 2016," *F and S Reports*, vol. 1, no. 2, pp. 83–93, 2020, doi: 10.1016/j.xfre.2020.06.006.
[15] A. Dasgupta, V. Kantorová, and P. Ueffing, "The impact of the COVID-19 crisis on meeting needs for family planning: a global scenario by contraceptive methods used [version 1; peer review: 3 approved with reservations]," *Gates Open Research*, vol. 4, no. July, pp. 1–21, 2020, doi: 10.12688/GATESOPENRES.13148.1.
[16] R. Azis, A. Mahmud, and S. S. Arsyad, "Options of Long-Term Contraceptive Methods in Married Women in South Sulawesi (Analysis of Idhs 2017)," *Jurnal Biometrika dan Kependudukan*, vol. 10, no. 2, p. 191, 2021, doi: 10.20473/jbk.v10i2.2021.191-201.
[17] A. D. Laksono, N. Rohmah, and H. Megatsari, "Barriers for multiparous women to using long-term contraceptive methods in Southeast Asia: case study in Philippines and Indonesia," *BMC Public Health*, vol. 22, no. 1, pp. 1–8, 2022, doi: 10.1186/s12889-022-13844-z.
[18] A. Islam, "Prevalence and Determinants of Contraceptive use among Employed and Unemployed Women in Bangladesh," *International Journal of MCH and AIDS (IJMA)*, vol. 5, no. 2, pp. 92–102, 2016, doi: 10.21106/ijma.83.
[19] Z. K. Edossa, T. F. Debela, and B. A. Mizana, "Women's Decision on Contraceptive Use in Ethiopia: Multinomial Analysis of Evidence From Ethiopian Demographic and Health Survey," *Health Services Research and Managerial Epidemiology*, vol. 7, p. 233339282092456, 2020, doi: 10.1177/2333392820924565.
[20] B. O. Ahinkorah *et al.*, "Factors associated with modern contraceptive use among women with no fertility intention in sub-Saharan Africa: evidence from cross-sectional surveys of 29 countries," *Contraception and Reproductive Medicine*, vol. 6, no. 1, pp. 1–13, 2021, doi: 10.1186/s40834-021-00165-6.
[21] Y. D. Wado, E. Gurmu, T. Tilahun, and M. Bangha, "Contextual influences on the choice of long-acting reversible and permanent contraception in Ethiopia: A multilevel analysis," *PLoS ONE*, vol. 14, no. 1, pp. 1–17, 2019, doi: 10.1371/journal.pone.0209602.
[22] R. H. Allen, C. A. Cwiak, and A. M. Kaunitz, "Contraception in women over 40 years of age," *CMAJ. Canadian Medical Association Journal*, vol. 185, no. 7, pp. 565–573, 2013, doi: 10.1503/cmaj.121280.
[23] L. McDougal *et al.*, "Planning for work: Exploring the relationship between contraceptive use and women's sector-specific employment in India," *PLoS ONE*, vol. 16, no. 3 March, pp. 1–16, 2021, doi: 10.1371/journal.pone.0248391.
[24] M. L. Harris, N. Egan, P. M. Forder, J. Coombe, and D. Loxton, "Contraceptive use among women through their later reproductive years: Findings from an Australian prospective cohort study," *PLoS ONE*, vol. 16, no. 8 August, pp. 1–19, 2021, doi: 10.1371/journal.pone.0255913.
[25] M. Lachiewicz, T. Hailstorks, and V. Kancherla, "Employment Status in the United States and Use of Long-Acting Reversible Contraception or Moderately Effective Contraception before and after the Affordable Care Act: National Survey of Family Growth 2006-2010 and 2015-2017," *Preventive Medicine Reports*, vol. 33, no. March, p. 102177, 2023, doi: 10.1016/j.pmedr.2023.102177.
[26] A. Sonfield, K. Hasstedt, M. L. Kavanaugh, and R. Anderson, "The Social and Economic Benefits of Women ' s Ability To Determine Whether and When to Have Children," *Guttmacher Institute*, no. March, p. 44, 2013.
[27] S. J. Chua *et al.*, "Age-related natural fertility outcomes in women over 35 years: A systematic review and individual participant data meta-analysis," *Human Reproduction*, vol. 35, no. 8, pp. 1808–1820, 2020, doi: 10.1093/humrep/deaa129.
[28] D. O. Laput, S. P. Manongga, E. P. Padeng, P. K. Senudin, and N. Nanur, "Factors predicting of the Implant Contraceptive Used as Family Planning Method among Mothers in Wae Mbeleng Public Health Center, Ruteng Sub District," *International Journal of Nursing and Health Services (IJNHS)*, vol. 3, no. 2, pp. 97–111, 2020.
[29] J. C. Fotso, J. Cleland, B. Mberu, M. Mutua, and P. Elungata, "Birth spacing and child mortality: An analysis of prospective data from the nairobi urban health and demographic surveillance system," *Journal of Biosocial Science*, vol. 45, no. 6, pp. 779–798, 2013, doi: 10.1017/S0021932012000570.
[30] J. Molitoris, K. Barclay, and M. Kolk, "When and Where Birth Spacing Matters for Child Survival: An International Comparison Using the DHS," *Demography*, vol. 56, no. 4, pp. 1349–1370, 2019, doi: 10.1007/s13524-019-00798-y.

[31] G. R. Khan, A. Baten, and Md. A. K. Azad, “Influence of contraceptive use and other socio-demographic factors on under-five child mortality in Bangladesh: semi-parametric and parametric approaches,” *Contraception and Reproductive Medicine*, vol. 8, no. 1, pp. 1–11, 2023, doi: 10.1186/s40834-023-00217-z.

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