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Key Factors Behind Contraceptive Use in Indonesian Women of Reproductive Age: Findings from the 2023 Health Survey

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ABSTRACT

Background: Population control through family planning (KB) programs is crucial for improving the community's quality of life and promoting women's reproductive health. Studies on contraceptive use in Indonesia indicate that short-term methods, particularly injectables, are the most commonly chosen by users. This preference is influenced by various factors such as age, education level, employment status, and place of residence.
Objective: Therefore, this study aims to analyze the factors associated with contraceptive use among women of reproductive age in Indonesia.
Method: This study employed a quantitative descriptive method with a cross-sectional design to analyze data from the 2023 Indonesian Health Survey (SKI), focusing on the reproductive health component. The sample consisted of 70,649 women of reproductive age. Data analysis was performed using bivariate analysis, specifically the Chi-square test, to examine the relationship between independent variables and contraceptive use. Statistical analysis was conducted using SPSS version 26.0, with a significance level of $p < 0.05$ considered statistically significant.
Results: This study's results show that all variables that affect the use of contraceptives in women of childbearing age have a significant relationship with outcomes: age (p-value = 0.000), education (p-value = 0.000), occupation (p-value = 0.000), and residence (p-value = 0.000).
Conclusion: All studied factors showed a significant association with contraceptive choice among women of reproductive age in Indonesia. Enhancing accessible and educational family planning services, particularly for low-income, rural, and adolescent populations, is essential to increase awareness and promote reproductive health.

Keywords: ***Age, Contraception, Education, Occupation, Residence, Woman of childbearing age***

INTRODUCTION

Population control through family planning (KB) programs significantly improves the community's quality of life and women's reproductive health. However, until now, the use of contraceptives in Indonesia still shows considerable variation based on age, education level, employment status, and place of residence.

In a study on contraceptive use prevalence in Indonesia, the study discovered that short-term contraceptive methods, particularly injections, continue to be the preferred choice among users. This information comes from a spatial analysis conducted in a previous study; 48.51% of married women chose injectable contraceptive methods, followed by contraceptive pills at 20.71%, while long-term methods (implants/IUDs) only reached less than 13%.[1]

The preference for 3-month injectable contraceptives is suspected because this method is considered more practical, does not require daily use, and the side effects are considered more tolerable by most users[2] In addition, the level of public trust in health workers, especially midwives and field workers, also influences the decision to choose contraception.[3]

Various factors, including age, education level, employment status, and place of residence, influence contraceptive use. Research shows that women of childbearing age in the age range of 20–35 years are the most contraceptive users. This high rate of contraceptive use is related to that age group's biological and psychological readiness to manage pregnancy spacing and family planning[4] In contrast, in adolescents aged 15–19 years, contraceptive use is still low, which increases the risk of unplanned pregnancy and adversely affects maternal and infant health[5]

In addition to the age factor, the level of education also affects the choice of contraceptive method. Women with higher levels of education tend better to understand the importance of pregnancy and reproductive health arrangements.[6] Good knowledge can increase awareness and participation in family planning programs, as well as assist individuals in choosing the appropriate contraceptive method.[7]

Employment status also influences contraceptive choices. Women who are not working tend to opt for 3-month injectable contraception because it is more accessible and does not require daily use, while working women, especially in the formal sector, prefer long-term contraceptive methods such as IUDs and implants that are more practical for their lifestyle.[8]

Residence is also a determining factor in the selection of contraception. Women living in urban areas have better access to modern health facilities and contraceptive services than women living in rural areas.[9,10] On the other hand, rural women often face barriers such as limited access, low levels of education, and strong conservative cultural influences in contraceptive use.[11]

In recent years, studies in Indonesia have confirmed that although long-acting contraceptive methods (LACMs) offer greater effectiveness and less frequent user effort, uptake remains low compared to short-term hormonal methods such as injectables and pills. For example, a study using data from the Performance Monitoring and Accountability (PMA) 2020 found that injectable methods—particularly 3-monthly injectables—remain the preferred method among married women, while long-term methods like IUDs or implants remain underutilized.[12–14] Moreover, geographical residence (urban vs. rural) markedly influences modern contraceptive use; a western region study showed modern contraceptive prevalence is significantly higher in urban areas than in rural ones, attributable to differences in health facility access, socioeconomic status, and educational attainment.[15]

Many existing studies focus separately on one or two factors (e.g., age and education, residence, or wealth), but do not examine the interactions among these factors (e.g., how age and education jointly with place of residence influence preference for specific contraceptive methods). There is a gap in understanding how combined sociodemographic and geographic variables correlate with both prevalence *and method-type selection* (short-term vs long-term).

Previous studies frequently used data from older surveys such as IDHS 2017 or other regional datasets. There is limited literature that utilizes the most recent *Survei Kesehatan Indonesia* (SKI) 2023 to examine contraceptive use across all provinces, particularly with respect to how various sociodemographic factors combine to influence both short-term and long-term contraceptive method choices.

Therefore, this study aims to fill this research gap by analyzing the factors associated with contraceptive use among women of reproductive age in Indonesia using SKI 2023 data. The novelty of this research lies in its use of up-to-date national data and a holistic examination of demographic, socioeconomic, and geographic factors influencing contraceptive behavior, providing evidence to support more targeted and equitable family planning interventions.

METHODS

This study employed a quantitative descriptive approach with a cross-sectional design. It utilized data from the 2023 Indonesian Health Survey (Survei Kesehatan Indonesia/SKI), specifically focusing on the reproductive health component. This research was conducted in Indonesia using secondary data from the 2023 Indonesian Health Survey (SKI).

This study analyzed the factors influencing the use of contraceptives among women of childbearing age in Indonesia. It was based on secondary data analysis from the national survey dataset.

This study's population consisted of 428,266 women of childbearing age (15–49 years) across Indonesia. A sample of 70,649 women of childbearing age was included in the analysis.

The independent variables in this study were age, education level, employment status, and place of residence**,** while the dependent variable was contraceptive use**.**

Data analysis was performed using bivariate analysis, specifically the Chi-square test, to examine the relationship between independent variables and contraceptive use. Statistical analysis was conducted using SPSS version 26.0, with a significance level of $p < 0.05$ considered statistically significant.

This study utilized secondary data from a national survey. The original data collectors obtained informed consent, and the data were anonymized before analysis. The study adheres to all ethical standards related to using human participants.

RESULT

Table 1 presents the characteristics of the study participants, comprising a total of 70,649 respondents. The majority of participants were aged 20–35 years (67.41%), had completed senior high school education (38.01%), and were unemployed (56.88%). Regarding place of residence, participants were almost evenly distributed between urban (51.75%) and rural (48.25%) areas. These results indicate that the sample reflects a diverse population in terms of age, educational attainment, employment status, and residential location.

Table 1. Characteristics of the Respondents

Characteristics	f	%
Age		
15-19 Years old	603	0.85
20-35 Years old	47,624	67.41
36-49 Years old	22422	31.74
Level of education		
Never went to school	1,597	2.26
Not finishing elementary school	2,850	4.03
Elementary school	11,196	15.85
Junior high school	14,251	20.17
Senior high school	26,857	38.01
Diploma	6,191	8.76
Undergraduate	7,707	10.91
Employment status		
Not working	40,188	56.88
School	425	0.60
Civil servants	3,408	4.82
Private employees	5,609	7.94
Self employed	5,708	8.08
Farmer	5,300	7.50
Fisherman	85	0.12
Laborer/driver	1,022	1.45
others	8,904	12.60
Residence		
Urban	36,564	51.75
Rural	34,085	48.25
Total	70,649	100.00

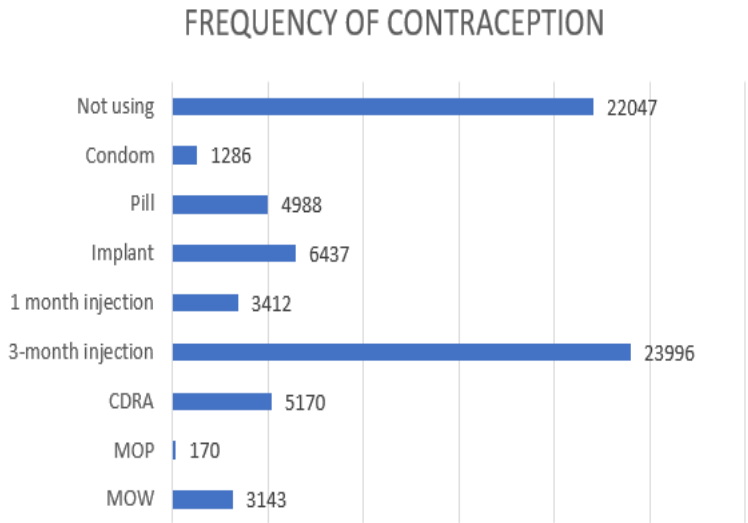

Diagram 1. Frequency distribution characteristic of the use of contraceptives

The analysis results indicated that a significant proportion of women of reproductive age preferred short-term contraceptive methods, particularly the 3-month injectable, with a total of 23,996 respondents (33.97%).

Table 2. Age Relationship with Contraceptive Use

		Contraceptives											
		MOW	MOP	CDRA	Injected 3 months	Injected 1 month	Implant	Pill	Condom	Using KB	Not Using Family Planning	Total	P-Value
AGE	15-19 years old	0	2	24	244	21	70	35	0	396	207	603	0,000
	20-35 years old	908	104	3518	17168	2484	4482	3184	882	32.730	14.894	47624	
	36-49 years old	2235	64	1628	6584	907	1885	1769	404	15.476	6.946	22422	
Total		3143	170	5170	23996	3412	6437	4988	1286	48.602	22.047	70649	

Based on Table 2, the result of this study shows that the most use of contraceptives in women of childbearing age is 3-month injections with an age range of 20-35 years, while the least use of contraceptive devices is MOW and condoms with an age range of users of 15-19 years.

The results of the statistical test yielded a P-value of 0.000. This indicates that, at a significance level of 5%, there is a significant relationship between age and the use of contraceptives among women of childbearing age in Indonesia.

Table 3. The Relationship of Education to the Use of Contraceptives

		Contraceptives										
		MOW	MOP	CDRA	Injected 3 months	Injected 1 month	Implant	Pill	Condom	Not Using	Total	P-Value
Education	Never went to school	53	3	37	524	40	151	95	12	682	1597	0,000
	Not finished elementary school	88	14	102	1155	107	302	199	22	861	2850	
	Finishing Elementary School	444	22	439	4856	393	1183	927	83	2849	11196	
	Completion of Junior High School	548	37	755	5878	667	1369	1204	145	3648	14251	
	High School Graduation	1265	57	2061	8553	1553	2397	1859	524	8588	26857	
	End D1/D2/D3	328	18	710	1471	312	488	325	200	2339	6191	
	End of PT	417	19	1066	1559	340	547	379	300	3080	7707	
Total		3143	170	5170	23996	3412	6437	4988	1286	22047	70649	

From Table 3, the results show that some women of childbearing age who graduate from high school prefer to use any contraceptive device. In contrast, the least used contraceptive is MOP, with a level of education that has never been in school.

The statistical test results revealed a P-value of 0.000. This result indicates that, at a significance level of 5%, there is a

significant relationship between education and the use of contraceptives among women of childbearing age in Indonesia.

Table 4. The relationship between employment status and contraceptive use

		Contraceptives										
		MOW	MOP	CDRA	Injected 3 months	Injected 1 month	Implant	Pill	Condom	Not Using	Total	P-Value
Employment Status	Not working	1653	91	2605	15019	2080	3541	3167	636	11396	40188	0.000
	School	10	5	32	149	20	38	16	10	145	425	
	Civil Servant/TNI/ POLRI/SOEs	284	14	442	671	171	286	160	112	1268	3408	
	Private employees	240	16	775	1405	276	362	273	195	2067	5609	
	Self-employed	328	15	547	1709	276	438	376	141	1878	5708	
	Farmer	259	14	161	1742	110	725	262	42	1985	5300	
	Fisherman	1	1	3	18	2	4	3	0	53	85	
	Labourer/driver/RT worker	62	2	71	272	40	91	63	23	298	1022	
	Other	306	12	534	2911	437	952	668	127	2957	8904	
Total		3143	170	5170	23996	3412	6437	4988	1286	22047	70649	

In Table 4, the study found that the employment status of women of childbearing age who did not work most chose to use injectable contraceptives for 3 months, while the use of contraceptives that was least chosen was condoms with the employment status of women of childbearing age who have a profession as fishermen.

Based on the statistical test results, a P-value of 0.000 was obtained, so it can be interpreted that at a significance level of 5%, there is a significant relationship between employment status and contraceptive use in women of childbearing age in Indonesia.

Table 5. The relationship between residence and contraceptive use

		Contraceptives										
		MOW	MOP	CDRA	Injected 3 months	Injected 1 month	Implant	Pill	Condom	Not Using	Total	P-Value
Residence	City	1966	94	3605	11279	1959	2561	2469	959	11672	36564	0,000
	Village	1177	76	1565	12717	1453	3876	2519	327	10375	34085	
Total		3143	170	5170	23996	3412	6437	4988	1286	22047	70649	

Based on Table 5, it is known that women of childbearing age who live in the village prefer to use injectable contraceptives for 3 months, and women of childbearing age who live in the village also choose to use MOP contraceptives at least.

Based on the statistical test results, a P-value of 0.000 was obtained, so it can be interpreted that at a significance level of 5%, there is a significant relationship between residence and contraceptive use in women of childbearing age in Indonesia.

DISCUSSION

1. Contraceptive Selection Patterns in Indonesia

Based on the results of the study, the most common contraceptive method used by women of childbearing age (WUS) in Indonesia is the 3-month injection, which was chosen by 23,996 respondents or about 40% of the total sample. These findings reflect that short-term contraception is still the dominant choice among women of productive age, likely due to its ease of use and effectiveness in preventing pregnancy.

This trend aligns with the literature suggesting several reasons behind the high preference for injectable methods. One of the main reasons is the high effectiveness of 3-month injections in preventing pregnancy. In addition, these contraceptives do not contain estrogen, making them relatively safer to use by women approaching menopause. The service factor also plays an important role. Many users are satisfied because they get friendly, informative, and professional service from health workers, especially midwives. In terms of comfort, this method is considered practical because it does not require daily use and does not cause pain during sexual intercourse. However, not a few users experience side effects, such as menstrual disorders in the form of amenorrhea, spotting, or irregular menstrual cycles. Other side effects that have also been reported include weight gain, dizziness, and headaches.[16]

Furthermore, the findings of a qualitative study reinforce the reasons for choosing this method. Many women of childbearing age say that they knew and decided to use injectable contraceptives thanks to recommendations from health workers such as midwives and field workers, especially during postpartum visits. Apart from its practicality (it is enough to be injected every three months), this method also provides a higher sense of privacy and is more tolerable than other methods that may cause discomfort. Some respondents even viewed injectable contraceptives as a temporary solution before switching to permanent contraceptive methods such as sterilization.[3]

The findings suggest that decisions in choosing contraceptive methods are strongly influenced by access to information, user convenience, and level of trust in healthcare providers. Therefore, a communicative, empathetic, and culturally value-sensitive approach to counseling is an important key to increasing the acceptance and sustainability of the use of injectable contraceptives in the community.[2]

Based on the results of the study, although the majority of women of childbearing age in Indonesia have used various contraception devices, there are still 22,047 respondents (31.2%) who do not use contraceptives at all, which is an important finding and requires serious attention. This figure indicates that almost one-third of WUS in Indonesia is still not reached by the Family Planning program, which can have an impact on the increasing number of unplanned pregnancies.

The low rate of contraceptive use among women of childbearing age is a complex issue and is influenced by a variety of multidimensional factors. One of the main factors is a lack of education about reproductive health, including an understanding of the benefits of contraception, how to use it correctly, and the choice of methods available. Women who have a better understanding of the types and benefits of contraception tend to be more active in choosing the appropriate method, and the level of sustainability of contraceptive use is much higher[17]

In addition to knowledge about contraception, limited access to quality reproductive health services, especially among poor women and those living in rural areas, is also one of the main

determinants of low contraceptive use rates in Indonesia. These barriers to access can be traced to several factors, including remote geographical location, economic constraints that limit the ability to access services, and lack of information and awareness about the choice of available contraceptive methods.[18]

Other factors include personal, religious, and cultural reasons. Some women may refuse to use contraception because of concerns about side effects, pressure from a partner or family, or because of religious views that consider the use of contraceptives to be unacceptable. Another previous study shows that cultural norms and religious values are often the main barriers to contraceptive acceptance, especially in societies that still hold to traditional values regarding fertility and gender roles.[19]

2. The Relationship of Age to Contraceptive Selection

The significant association between age and contraceptive use suggests that women aged 20–35 years are more likely to adopt contraception, likely because this group is in their reproductive prime and has greater awareness and access to family planning information and services. Conversely, lower contraceptive use among adolescents aged 15–19 years reflects limited participation in family planning programs, which may increase their vulnerability to early and unintended pregnancies. These findings underscore the importance of strengthening reproductive health education and targeted interventions for younger age groups.

These findings are in line with the concept in Life Cycle Theory (*Life Course Theory*)**,** explaining that individual experiences, as well as decisions made at each stage of life, are influenced by the dynamic interaction of various factors, including social, cultural, economic, and important events that occur throughout the life span. This approach emphasizes that individual behaviors and decisions, including contraceptive use, are influenced by social, cultural, economic, and life contexts interconnected throughout a person's age range.[20]

This can be explained logically, considering the age group 20–35 years old is included in the healthy reproductive age group and is the peak period of fertility and is active in sexual life and family planning.[21] Couples of childbearing age who are under 35 years old tend to have a higher desire to use contraceptives. This is because this age range is considered the ideal reproductive period for women to experience pregnancy and childbirth safely.[22] Therefore, the majority of couples who are still sexually active at the age of 20–35 indicate the intention to use contraception to prevent unplanned pregnancies.

Different from age groups 15–19 years old who belong to the young reproductive age group, in this group, the rate of not using contraceptives is relatively high; this indicates the possibility of unpreparedness or involvement of the age group in mature pregnancy planning.[20]

The low use of contraception in adolescents aged 15–19 years contributes significantly to the increased risk of unwanted pregnancy, which has a direct impact on the high rate of teenage pregnancy.[5] Pregnancy at this age often leads to a variety of health problems, such as premature birth, low birth weight, and an increased risk of maternal and infant mortality. In addition, teenage pregnancy also carries a wide range of social impacts, such as social stigma, school dropouts, and limited economic opportunities in the future.[23] Some of the factors that affect the low use of contraception in adolescents include a lack of comprehensive sexuality education, cultural norms that stigmatize conversations about reproductive health, and limited access to adolescent-friendly health services. Many teens feel embarrassed, scared, or lack adequate information to access contraception, especially if they are not married.[24]

These findings indicate that the importance of reproductive health education and access to adolescent-friendly contraceptives is vital to support adolescent health and well-being, as emphasized in the Regulation of the Minister of Health No. 97 of 2014 concerning Reproductive Health Services also emphasizes. The program allows teens to understand the physical and emotional changes during puberty, as well as the risks associated with sexual activity.

3. The Relationship of Education Level with Contraceptive Selection

The bivariate analysis showed a significant relationship between education level and contraceptive method choice (p-value = 0.000). Respondents with high school education were the largest group that did not use contraceptives (8,588 people), although they were also the largest users of the 3-month injection method (8,553 people). These findings reflect the duality of contraceptive behaviors in secondary education groups: some individuals are adequately informed and choose modern contraceptive methods, while others do not fully understand the urgency of birth control. Differences can influence this condition in access to information, quality of education, and social norms in the surrounding environment.

An individual's efforts in maintaining and improving his or her health status are influenced by the learning experiences gained during the educational process. The higher the level of education taken, the higher the awareness of the importance of health, including participation in contraceptives.[6] Other research also revealed that education level plays a role in shaping a person's mindset in responding to information about family planning, such as the importance of limiting the number of children, the benefits of having a small family, and the willingness to receive and use contraceptives.[25]

A person's decision to use contraceptives is greatly influenced by the level of knowledge he has. This knowledge generally develops with the increase in education, as education plays an important role in expanding an individual's insight and understanding of health issues, including reproductive health.[26] Individuals with higher levels of education tend to have the ability to think rationally and analytically, so they are better able to weigh the benefits and risks of an action before making a decision, including in the case of contraceptive use.[4] Furthermore, education also contributes to increasing individuals' awareness of maintaining and improving their health. People with higher education backgrounds generally have a better quality of life than those with low education, as they are more aware of the importance of preventive measures, including participation in family planning programs.[4]

Therefore, the educational process functions as a means of knowledge transfer and a medium for forming critical mindsets and wise decisions. Improving the population's quality through education is significant in creating a more conscious, rational, and responsible society in family life.

4. The Relationship between Employment Status and Contraceptive Selection

The bivariate analysis results in this study showed a significant relationship (*p*-value = 0.000) between employment status and contraceptive use. Women who do not work are the most users of the 3-month injection method, with the number reaching 15,019 people. This suggests that women who are not employed have more flexible time to access health services, including regular appointments for birth control injections. On the other hand, women who work in the formal sector, such as civil servants, the military, and state-owned enterprises, tend to choose long-term contraceptive methods such as

IUDs or implants, which are considered more practical in supporting their lifestyles and work demands. These findings indicate that accessibility and efficiency are important factors in the selection of contraceptive methods based on employment status.

These results are reinforced by research conducted in Turkey, which shows that working women, especially government employees, are more likely to use modern contraceptive methods such as pills, injections, and IUDs than traditional methods. The study highlights that career women face a high opportunity cost if they experience an unplanned pregnancy, given their significant work responsibilities and income. Consequently, they prefer long-term contraceptive methods that are effective.[8]

Support for these findings is also evident in a study conducted in India. The study found that women working in informal sectors such as agriculture or manufacturing were more likely to choose sterilization or short-term contraceptive methods such as pills and injections, with an adjusted relative risk ratio (aRRR) of around 1,5. In contrast, women who work in the professional sector, such as teaching or administration, prefer long-term, reversible contraceptive methods such as CRIA, with an aRRR of about 1,9. This shows that there is a variation in contraceptive selection based on the type of work, where professional women prefer methods that can support long-term planning.[27]

However, not all study results show a significant relationship between employment status and contraceptive choice. Previous research conducted in the work area of the Ngadiluwih Health Center, Kediri, stated that there was no significant relationship between employment status and intention to use contraception. In this context, working and non-working women have similar possibilities in using contraception. Other factors such as education level, partner influence, access to health facilities, and local cultural norms play a greater role in influencing contraceptive decisions. This reflects that in the context of rural areas with limited access, the role of work is not always the main factor in contraceptive use decision-making.[16]

Other research conducted in the United States shows interesting employment status and contraceptive access dynamics. Before the policy goes into effect *Affordable Care Act* (ACA), non-Hispanic white women who work are more likely to use modern contraception, particularly long-term methods *(Long-acting reversible contraceptives/LARC),* with *an adjusted prevalence odds ratio* (POR) of 1.66 (CI 1.28–2.14). However, after the ACA began guaranteeing access to contraception at no additional cost, the relationship between employment status and contraceptive selection became statistically insignificant (aPOR 0.94; CI 0.67–1.33).[28]

These findings confirm that health policies ensuring universal access can diminish disparities in contraceptive use previously influenced by employment status.

5. The Relationship of Residence to Contraceptive Selection

The findings further showed that the location of residence also influenced the choice of contraception. Women living in rural areas used more 3-month injections (12,717 people), while those living in urban areas tended to use long-term methods such as PRA. The statistical test results also showed a significant relationship (p-value = 0.000).

These results are in line with research conducted in Indonesia conducted on 3,927 women to examine the relationship between modern contraceptive use and sociodemographic factors, as well as to consider the influence of the area of residence. The results show that the area of residence significantly affects the use of modern contraception, both in urban and

rural areas. Young women in rural areas are more likely to use modern contraceptives (OR=24.68) than young women in rural areas (OR=15.25).[10]

Women living in the urban region tend to have better access to different types of modern contraceptives, such as IUDs, implants, and combination pills. This is due to the availability of complete health facilities, competent medical personnel, and adequate contraceptive counseling services. In addition, women in cities generally have higher levels of education and income, so they are better able to understand the benefits and risks of each method of contraception.[29] A more open social environment also allows them to discuss and choose contraceptive methods as needed, without cultural pressure or strong social stigma. Exposure to information through mass media and technology also helps them make more rational decisions regarding family planning.[10]

On the other hand, women in the region rural often face limitations in terms of access to contraceptive-related information. The main obstacles are the long distances to health facilities, lack of medical personnel, and limited counseling services. In addition, lower levels of education and economic limitations make them less exposed to correct information about modern contraception.[11]

More conservative cultural and religious factors can also influence attitudes toward contraceptive use, so their choices tend to be limited to traditional methods or even not using contraceptives at all.[30] Concerns about privacy and shame when accessing reproductive health services are also barriers to women in rural areas.[31]

Family planning programs must consider the difference in contraceptive selection patterns between urban and rural areas. To improve the coverage and sustainability of contraceptive use equitably, a contextual and responsive approach to each region's specific needs and barriers is needed. Consequently, a person's place of residence significantly influences their choice of contraceptive methods, necessitating policies that address regional disparities in access and needs.

CONCLUSION

Based on the results and analysis of the 2023 Indonesian Health Survey data, this study concludes that age, education level, employment status, and place of residence are significantly associated with contraceptive use among women of childbearing age in Indonesia. These findings reinforce the understanding that sociodemographic factors influence family planning behaviors. This study's new finding is the empirical confirmation of sociodemographic variables as consistent predictors of contraceptive use using nationally representative data. This supports the development of targeted interventions and policy models that consider these key factors to increase contraceptive coverage and reproductive health outcomes in Indonesia. The conclusion is supported by bivariate statistical analysis of a large sample (n = 70,649), ensuring the reliability of the results.

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