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DETERMINANT OF LONG-TERM CONTRACEPTIVE METHOD USE AMONG MARRIED WOMEN OF REPRODUCTIVE AGE: CROSS-SECTIONAL STUDY IN URBAN AREA OF SOUTH SUMATRA

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ABSTRACT

The Sustainable Development Goals (SDGs) emphasize the integration of reproductive health into national strategies and programs, including universal access to sexual and reproductive health services such as Family Planning (FP). This study aims to examine the factors influencing the use of long-term contraceptive methods among married women of reproductive age in urban areas of South Sumatra. A quantitative approach with a cross-sectional design was employed, using secondary data from the 2017 Indonesian Demographic and Health Survey (IDHS). The sample consisted of 247 married women. Data were analyzed using logistic regression. In urban areas of South Sumatra, 13.8% of married women of reproductive age used long-term contraceptive methods. The use of these methods was significantly associated with the number of living children and employment status ($p < 0.05$). Among all variables, education was found to be the most strongly associated factor with the use of long-term contraceptive methods ($p = 0.04$; PR = 4.238, 95% CI: 1.070–16.779). Education plays a pivotal role in the use of long-term contraceptive methods. Enhancing knowledge and awareness about these methods significantly influences women's decisions to adopt them.

Keywords: Demographic Survey, Indonesian Health, Married Women, Long-term Contraceptive Method, South Sumatra.

Introduction

The Sustainable Development Goals (SDGs) are a global development agenda consisting of 17 goals and 169 targets, to be achieved by 2030. These goals aim to reduce inequality, end poverty, and protect the environment over a 15-year period, from 2016 to 2030 [(1)]. In the health sector, the SDGs include 38 targets, one of which is to ensure universal access to sexual and reproductive health services—such as Family Planning (FP), information and education—and the integration of reproductive health into national strategies and programs [(2)].

Maternal and child mortality, unintended pregnancies, sexually transmitted infections (including HIV), teenage pregnancies, and unsafe abortions can be reduced through family planning, as stated by the United Nations Population Fund (UNFPA) [(3)]. Additionally, the World Health Organization (WHO) states that family planning can be implemented through the use of contraceptive methods and infertility treatment [(4)]. According to a 2019 United Nations (UN) report, there were 1.1 billion women of reproductive age worldwide in need of family planning. Among them, 842 million used modern contraceptive methods, while 80 million relied on traditional methods. However, 190 million women of reproductive age who wished to avoid pregnancy were still not using any form of contraception. This number increased from 156 million in 2000 [(5)].

Progress in meeting family planning needs through modern methods has continued. According to a UN report, the global proportion of women of reproductive age whose need for family planning is met by modern methods has increased from 67% in 1990 to 77% in recent years [(6)]. his progress is due to the increase in the number of women needing family planning—from 0.7 billion in 1990 to 1.1 billion today. Globally, the most used modern contraceptive method is female sterilization. In 2019, 23.7%—or approximately 219 million women—underwent sterilization. Other widely used methods include male condoms (189 million users), intrauterine devices (IUDs) (159 million), and pills (151 million), each with over 100 million users. In total, 45.2% of contraceptive users rely on long-term or permanent methods (female and male sterilization, IUDs, implants), while 46.1% use short-term methods (such as male condoms, injections, pills, and other modern methods) [(7)].

Indonesia has shown a strong commitment to providing quality family planning and reproductive health services. The country is also one of 69 nations globally committed to reducing unmet needs for family planning [(8)]. However, in contrast to the global trend, data from the Indonesian Demographic and Health Survey (IDHS) indicates that the use of modern contraceptives among married women declined from 57.9% in 2012 to 57.2% in 2017. Moreover, only 14% of married women used long-term contraceptive methods in 2017 (9,10). In terms of effectiveness, short-term contraceptive methods are less effective at preventing pregnancy compared to long-term methods [(11)]. Additionally, long-term contraceptive methods are part of the

key performance indicators in the National Population and Family Planning Board (BKKBN) strategic plan, which aims to increase family participation in family planning and reproductive health programs [12]. According to a BKKBN report, the national achievement for long-term contraceptive use in 2022 was 22.6%, still significantly below the 2024 target of 28% [13].

South Sumatra is one of the provinces with low achievement in the use of long-term contraceptive methods. Data from the Indonesian Demographic and Health Survey (IDHS) shows that the utilization of modern contraception in South Sumatra is 61.4% among married women, with only 15.6% using long-term contraceptive methods (10). Previous research has identified various factors correlated with long-term contraceptive use[14,15,16,17]. In Indonesia, numerous studies have been conducted to explore the use of long-term contraceptives among women [18,19,20,21]. However, studies focusing on the use of long-term contraceptive methods among married women in South Sumatra remain limited. Therefore, it is crucial to conduct this study as the first step in increasing the utilization of long-term contraceptives in the province. The aim of this study was to examine the determinants influencing the use of long-term contraceptive methods among married women in South Sumatra, particularly in urban areas.

Methods

This study used data from the 2017 Indonesian Demographic and Health Survey (IDHS). The IDHS is a survey conducted jointly by the Central Statistics Agency (Indonesian Statistics), the National Family Planning Coordination Board (BKKBN), and the Ministry of Health of the Republic of Indonesia. The Indonesian government and the United States Agency for International Development (USAID) collaborated to provide funding for the survey. The research design employed a quantitative method with a cross-sectional design.

The IDHS team conducted interviews with all South Sumatran women aged 15 to 49 for this study. The sample consisted of 247 respondents who were selected based on inclusion criteria: married women who had used or not used contraception in the past five years and who lived in urban areas. Exclusion criteria included women who were infertile (e.g., menopause or hysterectomy), experienced infertility, or had missing data.

The independent factors in this study are the number of living children, age, education, employment status, ideal number of children, socioeconomic status, media exposure, health insurance ownership, and visits to health workers. Meanwhile, the use of long-term contraceptive methods is the dependent variable. The utilization of long-term contraceptive methods refers to the participation of married women in urban areas of South Sumatra in family planning programs using long-term modern contraceptives, including Women’s Operative method of contraception (MOW), Intrauterine Devices (IUDs), and implants. The utilization of long-term contraceptive methods is categorized into two groups: the "yes" category, which includes married women who participated

in family planning programs using long-term modern contraceptives such as IUDs, MOW, and implants, and the "no" category, which includes married women who did not participate in family planning programs using these methods. Age refers to the respondent's age at the last birthday, as asked during the interview. It is divided into two categories: at risk (<20 years and >35 years) and not at risk (20 years – 35 years). The education level represents the highest formal education attained by the respondent, categorized into three groups: low (no school or elementary school graduates), middle (secondary school graduates), and higher (college graduates).

The number of children refers to the total number of children born and still alive at the time of the interview. This variable is divided into two categories: more than two children and fewer than two children. The ideal number of children is the number the respondent wanted when newly married and before having children. It is divided into three categories: 0 – 1 child, 2 – 3 children, and ≥ four children. Women's employment status over the past year is categorized into two groups: employed and unemployed. Economic status refers to the respondent's economic standing, as indicated by their wealth quintile. It is divided into three categories: poor (quintiles 1-2), middle (quintile 3), and rich (quintiles 4-5). Exposure to mass media is defined as whether the respondent has seen broadcasts about family planning on television within the last 6 months before the interview. It is divided into two categories: exposed and not exposed. Insurance ownership refers to whether the respondent has health insurance, categorized into two groups: yes (has insurance) and no (does not have insurance). Visitation status by health officers refers to whether family planning field officers visited the respondent in the last 6 months. This is categorized into two groups: yes (visited) and no (not visited).

The data were analyzed using univariate analysis, bivariate analysis with the chi-square test, and multivariate analysis with logistic regression. Data analysis was conducted using SPSS for Windows.

Ethical approval

We used secondary data. Ethical clearance was obtained in the 2017 IDHS from the National Ethics Committee. Respondents provided written approval for their involvement in the study. We have obtained permission to use the data through the following website: https://dhsprogram.com/data/new-user-registration.cfm

Results

Secondary data from the IDHS in 2017 provided the basis for the study's findings. The following table lists the characteristics of the respondents:

Table 1. Characteristics of the Respondents (n=247)

Variable	n	%
Long-Term Contraceptive Method Use		
Yes	34	13.8
No	213	86.2
Age		
Risky (<20 years dan >35 years)	136	55.1
Not Risky (20-35 years)	111	44.9
Level of Education		
Higher	42	17.0
Middle	151	61.6
Low	54	21.9
Number of Living Children		
> 2 Children	97	39.3
≤ 2 Children	150	60.7
Number of Children Ideal		
0-1 Children	29	11.7
2-3 Children	164	66.4
≥ 4 Children	54	21.9
Employment Status		
Employed	165	66.8
Unemployed	82	33.2
Economic Status		
Rich	131	53.0
Middle	56	22.7
Poor	60	24.3
Mass Media Exposure		
Yes	128	51.8
No	119	48.2
Insurance Ownership		
Yes	192	77.7
No	55	22.3
Visitation status by Health Officer		
Yes	9	3.6
No	238	96.4

As presented in Table 1, only 13.8% of respondents in urban areas of South Sumatra used long-term contraceptive methods. Additionally, 55.1% of respondents were aged either <20 years or >35 years, 61.6% had a middle level of education, and 60.7% had two or fewer living children. Furthermore, 66.4% of respondents reported that their ideal number of children was 2-3, 70% were employed, and 51.8% had a rich economic status. Regarding media exposure, 53% of respondents

reported exposure to popular culture (mass media), while 77.7% had health insurance. The majority (96.4%) of respondents had not been visited by a health officer within the past 6 months.

Table 2. Bivariate Analysis of Long-Term Contraceptive Method Use among Married Women in Urban Areas of South Sumatera

Variable	Long-Term Contraceptive Method Use						PR (95% CI)	*p-value*
	Yes		No		Total			
	n	%	n	%	n	%		
Age								
Risky (<20 years and >35 years)	23	16.9	113	83.1	136	100	1.850 (0.859 - 3.985)	0.161
Not Risky (20-35 years)	11	9.9	100	90.1	111	100	Ref	
Level of Education								
Higher	14	33.3	28	66.7	42	100	2.278 (0.667 - 7.779)	0.189
Middle	12	7.9	139	92.1	151	100	0.446 (0.150 - 1.327)	0.147
Low	8	14.8	46	85.2	54	100	Ref	-
Number of Living Children								
>2 Children	21	21.6	76	78.4	97	100	2.912 (1.381 - 6.142)	0.007*
≤2 Children	13	8.7	137	91.3	150	100	Ref	
Number of Living Ideal								
0-1 Children	7	24.1	22	75.9	29	100	2.866 (0.800 - 10.267)	0.106
2-3 Children	20	12.2	144	87.8	164	100	0.830 (0.298 - 2.311)	0.722
≥ 4 Children	7	13.0	47	87.0	54	100	Ref	-
Employment Status								
Employed	29	17.6	136	82.4	165	100	3.284 (1.221 - 8.832)	0.023*
Unemployed	5	6.1	77	93.9	82	100	Ref	
Economic Status								
Rich	27	20.6	104	79.4	131	100	1.906 (0.622 - 5.838)	0.259
Middle	1	1.8	55	98.2	56	100	0.161 (0.018 - 1.470)	0.106
Poor	6	10.0	54	90.0	60	100	Ref	-
Mass Media Exposure								
Yes	21	16.4	107	83.6	128	100	1.600 (0.762 - 3.361)	0.287
No	13	10.9	106	89.1	119	100	Ref	
Insurance Ownership								
Yes	29	15.1	163	84.9	192	100	1.779 (0.654 - 4.839)	0.358
No	5	9.1	50	90.9	55	100	Ref	
Visitation status by Health Officer								
Yes	2	22.2	7	77.8	9	100	1.839 (0.366 - 9.248)	0.797
No	32	13.4	206	86.6	238	100	Ref	

*Sig (p-value <0.05)
Ref: References (Comparison)

As shown in Table 2, the factors associated with the use of long-term contraceptive methods among married women in urban areas of South Sumatra are the number of living children

and employment status (p-value < 0.05). Other factors, such as education level, age, ideal number of children, economic status, media exposure, insurance ownership, and health officer visits, were not significantly related to the use of long-term contraceptive methods among married women in these urban areas (p-value > 0.05)

Table 3. Determinant of Long-Term Contraceptive Method Use among Married Women in Urban Areas of South Sumatera

Variable	PR (95 % CI)	*P-value*
Level of Education		
Higher	4.238 (1.070 - 16.779)	0.040*
Middle	0.664 (0.215 - 2.049)	0.477
Low	Ref	-
Number of Living Children		
>2 Children	3.572 (1.330 - 9.593)	0.012*
≤2 Children	Ref	
Age		
Risky (<20 years and >35 years)	1.532 (0.591 - 3.974)	0.380
Not Risky (20-35 years)	Ref	
Number of Children Ideal		
0-1 Children	3.436 (0.885 - 13.346)	0.075
2-3 Children	0.948 (0.317 - 2.838)	0.925
≥ 4 Children	Ref	-
Employment Status		
Employed	2.984 (0.999 - 8.911)	0.050
Unemployed	Ref	
Economic Status		
Rich	1.949 (0.612 - 6.202)	0.259
Middle	0.130 (0.012 - 1.413)	0.094
Poor	Ref	-
Insurance Ownership		
Yes	1.558 (0.483 - 5.026)	0.458
No	Ref	

*Significant < 0.05; Ref: Reference

According to Table 3, education level is the most significant factor, as reflected by the highest Adjusted Prevalence Ratio (PR) of 4.238 (CI: 1.070–16.779). The results of the multivariate analysis suggest that education level has a significant impact on the use of long-term contraception. Specifically, respondents with higher education are 4.2 times more likely to use long-term contraceptive methods than those with only primary education, with a confidence interval ranging from 1.070 to 16.779.

Discussion

The aims of this study were to examine the determinants of the use of long-term contraceptive methods among married women in South Sumatra, particularly in urban areas. According to the findings of this study, married women living in urban areas of South Sumatra are most likely to use long-term contraception if they have a higher level of education. Respondents with a higher level of education are 4.2 times more likely to use long-term contraception than respondents with a primary education. These findings are consistent with the findings of a previous study that was conducted in sub-Saharan Africa and found that women with secondary or tertiary education are more likely than women without education to use long-term contraception [22,23]. Similarly, a study conducted in Southeast Asia also stated that multiparous in the Philippines who were not educated had a higher chance of not using long-term contraception than women with higher education [24]. Moreover, research by Aduloju et al. found that women with higher education were 4.1 times more likely to use long-term contraceptives than those with lower education [25]. However, this contrasts with a study by Alemayehu et al., which reported no significant correlation between women's education level and long-term family planning use in Harar, Eastern Ethiopia [26]. Women with higher education may have a better understanding of the importance of long-term contraception for both their health and the well-being of their families, which could explain the observed correlation between education and contraceptive use [27]. Additionally, educated women are often more aware of the misconceptions and myths surrounding long-term contraceptive use [22]. Furthermore, education may empower women to better utilize family health services and make informed decisions about reproductive health, including family planning [28].

Another factor influencing the utilization of long-term contraceptive methods is the number of living children. The results of this study indicate that respondents with more than two living children are 2.9 times more likely to use long-term contraceptive methods compared to those with two or fewer living children. This finding aligns with a study conducted in Sub-Saharan Africa, which showed that the likelihood of using long-term contraception is significantly higher among multiparous women, especially those with five or more children, compared to women without children [29]. Similarly, research by Arero et al. found that women with more than four living children are 2.6 times more likely to use long-term contraception than women with no children or only one child [30]. A study in Uganda also supports this, showing that as the number of children increases, the likelihood of using long-term contraception rises as well Additionally, a study conducted in Kenya found that women with more than two children were 18 times more likely to choose long-term contraception compared to women without children. This trend may occur because women with higher parity have already achieved their fertility goals and therefore tend to favor long-term or permanent contraception due to their higher safety and cost-effectiveness in preventing unwanted pregnancies [33]. On the other hand, rumors or notions of infertility after

discontinuation of long-term contraception have become a significant concern for women with fewer children [34], potentially influencing their contraceptive choices. However, it is important to note that there is no evidence of fertility issues after stopping long-term contraceptives (IUD or implant), and more than 70% of women in Indonesia become pregnant within one year of removing the IUD or implant [35].

Employment status is also identified as a significant factor influencing the utilization of long-term contraceptive methods among married women. This study found that employed respondents were 3.2 times more likely to use long-term contraceptive methods compared to unemployed respondents. These findings are consistent with studies conducted in Ethiopia, which revealed a significant correlation between women's employment and the use of long-term or permanent contraceptive methods [36,37]. Yalew et al. also reported that employment status is an important determinant, with working women being 3.87 times more likely than housewives to use long-term contraceptives [38]. This trend may be due to the preference among working multiparous women for practical and effective methods of contraception [39]. Previous studies have shown that the long-term contraceptive method is more effective in preventing pregnancy than other contraceptive methods [40]. On the other hand, long-term contraception is also considered more effective for working women to avoid forgetting to use contraception due to busyness at work [24]. This can also happen because working women may have better income as well as access to media and health services, which can positively influence the use of modern contraception [41], including in choosing the long-term contraceptive method.

The study has several limitations; first, the study employs a cross-sectional design, which limits the ability to establish causal relationships between variables. Moreover, potential biases, such as recall bias or social desirability bias from self-reported data, may influence the validity of the findings. Lastly, the study's context-specific nature means that its results may not be fully applicable to other regions or populations, necessitating further research to confirm its generalizability.

Conclusion

The factors associated with the utilization of long-term contraceptive methods among married women in urban areas of South Sumatra include the number of living children and employment status. Among these, education level emerged as the most dominant factor. Women with higher education were 4.2 times more likely to use long-term contraceptive methods compared to those with primary education, even after controlling for other variables such as number of living children, age, ideal number of children, economic status, and insurance ownership. The decision to adopt long-term contraceptive methods is strongly influenced by women’s knowledge and understanding of these methods. Therefore, increasing awareness through accessible and reliable

sources—such as the internet, mass media, educational campaigns, counseling, and community seminars—can play a crucial role. Tailored educational programs should be implemented both within the community and via targeted digital platforms to enhance knowledge and empower women in making informed reproductive health decisions, particularly in the local sociocultural context.

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Conflict of Interest

The authors stated that there is no conflict of interest in this article

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