INFLUENCING FACTORS OF CHILDBEARING-AGE COUPLES IN CONTRACEPTIVE USES

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Abstract. The Government launches the Family Planning Program to improve the quality of human life by controlling births, reducing mortality, and increasing family welfare. This study aimed to analyze contraceptive use's influencing factors of childbearing-age couples so that the result can be used as a basis for determining the direction of policies and types of family planning services. The influence factors in this study were identified based on the Indonesian Family Life Survey (IFLS) wave five data. This study analyzed data from the 2014/2015 Indonesian Family Life Survey (IFLS) Wave 5 Book 4 contraceptive questionnaire. Subjects in this study were women aged 15-49 years, constituting the largest number of contraceptive users. The total number of respondents was 10,184. The data were analyzed using logistic regression to get a prediction of the probability of contraceptive use at a certain time. The results of this study indicated the value of the marginal effect of each variable to determine the predictive probability of contraceptive use variables. The values of the marginal effect on each of the variables studied were 0.180 for women aged 30-39 years, 0.069 for women with 3-4 children, 0.063 for women who had experienced pregnancy, 0.029 for women who had larger family sizes or numbers, and 0.052 for women with secondary education. The probability to use contraceptive was greater for women aged 30-39 years, women with 3-4 children, women who have been pregnant before, women with large family members, and women with secondary education. Based on the results of this study, there is a need for more comprehensive family planning efforts targeting women to increase contraceptive use. So that the probability of using contraception can be more evenly distributed

among women in all reproductive age ranges with various educational backgrounds and childbirth experiences.

Keywords: childbearing-age couples, participation, contraceptive

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INTRODUCTION

The Family Planning Program is a Government program launched in 1970, to control population growth, limit birth rates, and regulate birth spacing so that healthy and prosperous families can be created (MOH RI, 2018). The percentages of Contraceptive Prevalence Rate (CPR) in 2017-2020 were 57.6%, 57%, 55%, and 57.9%, respectively (National Population and Family Planning Board, 2018; National Population and Family Planning Board, 2019; National Population and Family Planning Board, 2020; National Population and Family Planning Board, 2021). Efforts to increase the use of contraceptive are influenced by several factors, including knowledge, support and availability of communication services, information, education about reproductive health and contraceptive, religion, exclusive breastfeeding, desire to get pregnant and delay pregnancy, desire and awareness to use contraceptives, factors socio-demographic (such as age and socioeconomic status), obstetric factors (such as parity and menstrual cycle disorders), women's empowerment in decision-making, education, women's health policies, availability of contraceptives and trained human resources, past birth history, birth spacing, access and quality of health facilities, desired number of children, women's social and biological factors, fear of contraceptive effects on fertility, encouragement from family or partners, husband's support, side effects of contraceptive (Bakibinga *et al*, 2019; Bintabara *et al*, 2018; Cronin *et al*, 2018; Fitriani, 2016; Gebrehiwot *et al*, 2019;

Harries *et al*, 2019; Islam, 2018; Kopp *et al*, 2018; Sailan *et al*, 2019; Sedekia *et al*, 2017; Tadele *et al*, 2019; Worku *et al*, 2019; Yaya *et al*, 2018). In addition to these factors, efforts to increase the use of contraceptives encountered several obstacles, namely the lack of support from the Government and community institutions, cooperation between cadres that have not been optimal, lack of knowledge and understanding of the community regarding family planning programs, socio-cultural, economic and religious aspects, inadequate human and financial resources, inadequate training for family planning field officers, lacking communication, education and information program on family planning, lack of communication between the Government, family planning field officers, health workers, and the community, and the quality and quantity of family planning services that have not been comprehensive and evenly distributed (Prasetyawan *et al*, 2013; Tessema *et al*, 2016; Trianziani, 2018; Wandera *et al*, 2019).

The use of contraceptive is a health promotion behavior that is influenced by the readiness, motivation, and confidence of childbearing-age couples toward family planning program services. The use of contraceptive aims to improve health status, especially reproductive health in women of childbearing age and family quality. The use of contraceptives in the family planning program is beneficial in helping childbearing-age couples to prevent unwanted pregnancies, reduce the spread of sexually transmitted diseases, and overcome the problem of sexually transmitted diseases (Institute of Medicine, 2009). The use of contraceptives in the family planning program aims to prevent unwanted pregnancies, reduce the incidence of abortion, reduce mortality and disability related to complications of pregnancy and childbirth, suppress population growth, improve the quality of maternal and child health, improve the quality of the nation with indicators of increasing rates. literacy and poverty reduction, reducing maternal mortality (MOH RI, 2014; UNPF, 2022). The use of contraceptive is a family planning program service in the category of promotive and preventive services, including counseling services, basic contraceptive, vasectomy, and tubectomy. Family planning services to increase the use of contraceptive require the support of various parties, including availability and ease of access (facilities, services,

and information) for family planning acceptors to obtain services, cooperation from all sectors in efforts to improve and distribute family planning services (MOH RI, 2014).

This study aimed to analyze the factors that influence childbearing-age couples in the use of contraceptive based on the Indonesian Family Life Survey (IFLS) Wave 5 data. Data collection for IFLS Wave 5 respondents was carried out from the end of October 2014 until the end of August 2015. Researchers used IFLS Wave 5 because IFLS Wave 5 is the latest data published by the RAND Corporation; the data are still relevant because they are less than 10 years, and the time of data collection for IFLS Wave 5 was carried out in the era of decentralization of the family planning program in Indonesia after undergoing a transition from the centralized era, and before it was established to form a Family Planning Village (Putri *et al*, 2019). So that the influence factor of changes in policies and services in the family planning program can still be controlled.

MATERIALS AND METHODS

This study aimed to analyze the possible factors that influence contraceptive use in women aged 15-49 years by using probability values. Data on factors influencing contraceptive use were obtained from IFLS Wave 5 Book 4 which were collected from the end of October 2014 to the end of August 2015.

This study used all data from respondents who were sampled in the IFLS Wave 5 contraceptive questionnaires in 2014/2015. The data analyzed came from all IFLS Wave 5 contraceptive questionnaire data. After data cleaning, 10,184 data were proceeded to analysis phase using STATA 15 (Stata Corp, College Station, TX).

Data on women aged 15-49 years from IFLS Wave 5 data were analyzed descriptively. Descriptive analysis was conducted to determine the percentage and number of women aged 15-49 years who used contraceptive. A descriptive analysis was also carried out on the factors that influence the use

of contraceptive. The factors that influence the use of contraceptives in this study included age, number of children, education, pregnancy experience, number or size of family, location of residence, and expenditure per capita. Bivariate and multivariate analyses were performed to determine the probabilities of factors influencing contraceptive use using beta coefficients and marginal effect values.

Contraceptive use was categorized into two: using and not using. Multivariate logistic regression was used to determine the probability between the influencing factor and the use of contraceptive by using beta coefficient and marginal effect value. Logistic regression modeling was used to analyze the relationship and probability of each factor influencing contraceptive use in childbearing-age couples and the underlying determinants of contraceptive use. Logistic regression analysis was used in this study because this study is an analysis of data collected at one time, not serial data. The research model used in this study was as follows:

$$P(ContraceptiveUse=1) = \beta_0+\beta_1 AgeGroup_i+\beta_2 Educ_i+\beta_3 Urban_i+\beta_4 DummyEverPregnant_i +\beta_5 TotalChildrenGroup_i+\beta_6 FamilySize_i+\beta_7 Log(PerCapitaExpenditure)Group_i+ \varepsilon$$

where $P(ContraceptiveUse=1)$ refers to the use of contraception of childbearing age women, of which it was categorized 1 if contraceptive was used and 0 if no contraceptive was used;

β_0 = constant refers to the intercept or the log of the odds of contraceptive use when all the predictor variables are equal to zero

$\beta_1 AgeGroup_i$ refers to the age group of the childbearing age women, of which it was respondents' age range at the time of interview, where 1 = 15-19 years old (Reference), 2 = 20-29 years old, 3 = 30-39 years old, 4 = 40-49 years old;

$B_2 Educ_i$ refers to the education level of the childbearing age women, of which it was their highest education ever attended, where 1 = Primary Education (Reference), 2 = Junior High School and Equivalent, 3 = Senior High School and Equivalent, 4 = College;

$B_3 Urban_i$ refers to the place of the childbearing age women lives when the interview held whether in urban areas or rural areas, where 1 = Urban, 0 = Rural;

$B_4 DummyEverPregnant_i$ refers to the experience of having pregnant, of which it was whether the childbearing age women has ever been pregnant or not, where 1 = Yes, 0 = No;

$B_5 TotalChildrenGroup_i$ refers to the category of total living children the respondent had at the time of the interview, where 0 = 0-2 children, 1 = 3-4 children, 2 = >4 children;

$B_6 FamilySize_i$ refers to the size of family, of which it was the category of total household member who lives together with the respondents, where 0 = 0-2 people, 1 = 3-4 people, 2 = >4 people;

$B_7 Log(PerCapitaExpenditure)Group_i$ refers to group of expenditure per capita of the respondents, of which it was the expenditure of each family member that use the log-linier regression model in order to obtain efficient coefficient result, where 0 is less than IDR 500,000 1 = IDR 500,000-1,000,000, 2 = IDR 1,000,000-1,500,000, 3 is more than IDR 1,500,000; and

ε = Error

Ethical consideration

Ethical approval was obtained from the Ethics Committee of Dr. Moewardi Hospital, Surakarta with approval number 198208212005012001-1580.

RESULTS

The research data were obtained from women aged 15-49 years who were respondents to the IFLS Wave 5 survey. Data from the 2014/2015 IFLS Wave 5 contraceptive questionnaire data were obtained from 10,856 subjects. After the data cleaning, incomplete data or missing data were not taken

to the analysis; as a result, data of 10,184 subjects were analyzed. Of the 10,184 subjects, there were 5,715 (56.1%) women who used contraceptive. Descriptive analysis of the characteristics of the subjects showed that the majority of subjects were in the age range of 30-39 (41%), most of the subject's education was at the Elementary School level and equivalent (32%), most of the subjects lived in urban areas (57.1%), the subjects had no experience of being pregnant (59.9%), most of the subjects had 3-4 children (53.3%), and most of the subjects had an income of IDR500,000-1,000,000 (43%) (Table 1).

Tables 2 and 3 show the logit regression results and the marginal effects. Table 2 shows the regression coefficients which explain the determinants of contraceptive use. Table 3 shows the probability values of the factors that influence contraceptive use. The coefficient regression resulted in estimates of the same sign for all variables with marginal effects. The analysis in this study uses two approaches, namely bivariate and multivariate analysis. The results of bivariate analysis revealed a significant relationship between contraceptive use and various influencing factors. Specifically, the effect of age on contraceptive use was observed to be significant, with the highest probability of contraceptive use of 0.134 observed for respondents aged 30-39 years relative to respondents aged 15-19 years. Education was also found

Table 1
Study subject characteristics (N = 10,184)

Variable	Frequency *n* (%)
Contraceptive Use	
Not use	4,469 (43.9)
Use	5,715(56.1)
Age	
15-19 years	280 (2.7)
20-29 years	3,102 (30.5)
30-39 years	4,179 (41.0)
40-49 years	2,623 (25.8)

Table 1 (cont)

Variable	Frequency *n* (%)
Education	
Elementary School and equivalent	3,254 (32.0)
Junior High School and equivalent	2,436 (23.9)
Senior High School and equivalent	3,240 (31.8)
College	1,254 (12.3)
Location of residence	
Rural	4,368 (42.9)
Urban	5,816 (57.1)
Pregnancy experience	
No	5,286 (51.9)
Yes	4,898 (48.1)
Number of children	
0-2 children	9,506 (93.3)
3-4 children	627 (6.2)
>4 children	51 (0.5)
Family size or number	
0-2 people	909 (8.9)
3-4 people	5,431 (53.3)
>4 people	3,844 (37.8)
Per capita expenditure	
Less than IDR 500,000	2,007 (19.7)
IDR 500,000-1,000,000	4,381 (43.0)
IDR 1,000,000-1,500,000	2,062 (20.3)
More than IDR 1,500,000	1,734 (17.0)

IDR: Indonesian Rupiah

Table 2

Beta coefficient in bivariate and multivariate analysis of the influence of contraceptive use

Variables	Beta coefficient (Bivariate)	95% confidence interval beta coefficient	Beta coefficient (Multivariate)	95% confidence interval beta coefficient
Age				
20-29 years	0.466	0.220, 0.711	0.603	0.352, 0.855
30-39 years	0.543	0.300, 0.786	0.752	0.501, 1.002
40-49 years	-0.115	-0.362, 0.131	0.116	-0.142, 0.374
Education				
Junior High School and equivalent	0.300	0.192, 0.407	0.224	0.112, 0.337
Senior High School and equivalent	-0.043	-0.140, 0.055	-0.112	-0.220, -0.005
College	-0.293	-0.423, -0.162	-0.350	-0.496, -0.204
Location of residence	-0.156	-0.235, -0.077	-0.085	-0.170, -0.001
Pregnancy experience	0.355	0.276, 0.434	0.267	0.175, 0.358
Number of children				
3-4 children	0.474	0.303, 0.645	0.298	0.109, 0.487
>4 children	-0.087	-0.809, 0.292	-0.594	-1.170, -0.018
Family size or number	0.136	0.112, 0.161	0.123	0.097, 0.150
Log (Per capita expenditure)	-0.329	-0.393, -0.265	-0.121	-0.196, -0.046

Source: Strauss *et al* (2016)

Note: Reference for age was the 15-19 years age group; for the education was primary school; for the location of residence is rural and for the number of children is 0-2 children.

to have a significant effect on contraceptive use, with a probability of 0.072 for those with junior high school education relative to respondents with elementary education. A significant relationship was also found between contraceptive use and family size with a probability of contraceptive use at 0.033, location of residence with a probability of contraceptive use at -0.038, per capita expenditure with a probability of contraceptive use at -0.080, previous pregnancy experience with a probability of contraceptive use at 0.355, and number of 3-4 children with a probability of contraceptive use at 0.112. (Table 3)

The results of multivariate analysis showed that consistent with bivariate analysis, various influencing factors have significant associations with the probability of contraceptive use. The association of age on contraceptive use was observed to be significant, with the highest probability of contraceptive use at 0.180 observed for respondents aged 30-39 years relative to respondents aged 15-19 years. Education was also found to significantly impact contraceptive use, with a probability of 0.052 for those with junior high school education relative to respondents with primary education. However, the level of education from high school to university experienced a decrease in the probability of using contraceptives. A significant relationship was also found between contraceptive use and family size with a probability of contraceptive use at 0.029, location of residence with a probability of contraceptive use at -0.020, per capita expenditure with a probability of contraceptive use at -0.028, previous pregnancy experience with a probability of contraceptive use at 0.063, and number 3-4 children with probability contraceptive use at 0.069. (Table 3) These results provide insight into the factors that may influence contraceptive use and can inform future research and interventions.

DISCUSSION

Factors influencing the use of contraceptives included in this study were age, the number of children, the experience of pregnancy, family size

Table 3

Marginal effect in bivariate and multivariate analysis of the influence of contraceptive use

Variables	Marginal effect (Bivariate)	95% confidence interval marginal effect	Marginal effect (Multivariate)	95% confidence interval marginal effect
Age				
20-29 years	0.115	0.054, 0.176	0.145	0.085, 0.205
30-39 years	0.134	0.073, 0.194	0.180	0.120, 0.239
40-49 years	-0.029	-0.090, 0.033	0.028	-0.034, 0.089
Education				
Junior High School and equivalent	0.072	0.047, 0.098	0.052	0.026, 0.078
Senior High School and equivalent	-0.011	-0.035, 0.014	-0.027	-0.052, -0.001
College	-0.073	-0.105, -0.040	-0.083	-0.118, -0.049
Location of residence	-0.038	-0.058, -0.019	-0.020	-0.040, -0.000
Pregnancy experience	0.087	0.068, 0.106	0.063	0.041, 0.084
Number of children				
3-4 Children	0.112	0.074, 0.150	0.069	0.026, 0.111
>4 Children	-0.064	-0.202, 0.073	-0.141	-1.274, -0.007
Family size or number	0.033	0.027, 0.039	0.029	0.023, 0.035
Log (Per capita expenditure)	-0.080	-0.096, -0.065	-0.028	-0.046, -0.011

Source: Strauss *et al* (2016)

Note: Reference for age was the 15-19 years age group; for the education was primary school; for the location of residence is rural and for the number of children is 0-2 children.

or number, education, location of residence, and per capita expenditure. The result showed that age, number of children, birth experience, size or number of families, and education influenced contraceptives use. Among the influencing factors, the age range of 30-39 years had the greatest influence on contraceptive use. These results are in line with other research studies conducted in Indonesia which found that education level, knowledge, community role, area of residence, reproductive capacity, number of children they have, occupation, age at first marriage, age of woman, marital status, pregnancy experience, and household income affect the use of contraceptives (Aminatussyadiah and Prastyoningsih, 2019; Apanga *et al*, 2020; Beyene *et al*, 2021; Dasa *et al*, 2019; Herowati and Sugiharto, 2019; Jurisman *et al*, 2016; Pratiwi, 2019; Saskara and Marhaeni, 2015; Wahyuni, 2019; Wakuma *et al*, 2020).

The number of children and families are factors that influence the use of contraceptive because the number of children and the size or number of families can affect the awareness and motivation of childbearing-age couples to use contraceptive (Kaporina, 2016). The experience of pregnancy is a factor that influences the use of contraceptive because the experience of pregnancy will affect the readiness of childbearing-age couples to use contraceptive (Sulistyawati, 2018). Education is a factor influencing the use of contraceptive because education affects the cognitive ability of childbearing-age couples in receiving information or knowledge. Childbearing-age couples who have good cognitive abilities in receiving the information will have the knowledge and readiness to use contraceptives (Pratiwi, 2019). The location of residence is a factor influencing the use of contraceptive because the location of residence determines the availability of community support to increase awareness, readiness, and confidence of childbearing-age couples to use contraceptive. Per capita expenditure is a factor influencing the use of contraceptive because per capita expenditure shows the ability of families to obtain promotive and preventive services from family planning services. Per capita expenditure can affect family support in encouraging or motivating childbearing-age couples to use contraceptive (Yuliana *et al*, 2022).

The use of contraceptive is also influenced by the factor of meeting the needs of childbearing-age couples. Factors that influence the unmet need for contraceptive use (Unmet Need for Family Planning), namely the age of marriage, employment status of women of childbearing age, and cooperation of childbearing-age couples in determining the method of family planning (Getaneh *et al*, 2020; Worku *et al*, 2020). Thus, optimizing the use of contraceptive in childbearing-age couples can be done by identifying and managing the factors influencing the use of contraceptive comprehensively and holistically.

The limitation of this study is that it does not use data series to determine the pattern of influence of contraceptive use based on the development of family planning in Indonesia which has changed from the era of centralization (1945-1998) to the era of decentralization (2004-2014). To find out the relationship of influencing factors comprehensively, path analysis is needed to develop a model of simultaneous contraceptive use.

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CONFLICT OF INTEREST DISCLOSURE

The author declares that there is no conflict of interest in the research and preparation of this article.

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