

The Contextual Effect of Posyandu on the Decision to Use Long Term Contraceptive in Tulungagung, East Java

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ABSTRACT

Background: Family planning will help reduce population growth, fertility, improvement quality of life, women's health status, unwanted pregnancy, and abortion. The selection of the use of contraceptives needed leads to a contraceptive that has higher effectiveness, namely the long-term contraceptive method. This study aimed to analyze contextual effect of posyandu on the decision to use long term contraceptive in Tulungagung, East Java.

Subjects and Method: This was a cross-sectional study conducted at 25 integrated health posts (posyandu) in Kauman health service, Tulungagung, East Java, in January 2019. A sample of 200 women of childbearing age was selected by stratified random sampling. The dependent variable was the use of long-term contraceptive method. The independent variables were age, education, knowledge, occupation, husband and family supports, women's perception, local culture, and posyandu. The data were collected by questionnaire and analyzed by a multilevel multiple logistic regression run on Stata 13.

Results: The use of long-term contraceptive method increased with age ≥ 35 years ($b = 1.68$; 95% CI = 0.51 to 2.85; $p = 0.005$), education \geq Senior high school ($b = 2.22$; 95% CI = 0.97 to 3.46; $p < 0.001$), high knowledge ($b = 2.05$; 95% CI =

0.75 to 3.35; $p = 0.002$), working outside the house ($b = 1.66$; 95% CI = 0.54 to 2.78; $p = 0.004$), strong husband and family support ($b = 2.11$; 95% CI = 0.87 to 3.34; $p = 0.001$), positive perception of long-term contraceptive method ($b = 1.92$; 95% CI = 0.75 to 3.08; $p = 0.001$), and supportive local culture ($b = 1.10$; CI 95% = -0.04 to 2.25; $p = 0.009$). Posyandu had strong contextual effect on the use of long-term contraceptive method with ICC = 26.70%.

Conclusion: The use of long-term contraceptive method increases with age ≥ 35 years, education \geq Senior high school, high knowledge, working outside the house, strong husband and family support, positive perception of long-term contraceptive method, and supportive local culture. Posyandu has a strong contextual effect on the use of long-term contraceptive method.

Keywords: long-term contraceptive, multilevel analysis.

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BACKGROUND

Contraceptive can be one of the media to promote women's reproductive health and prevent the risk of unwanted pregnancy. Each year, an estimated 350,000 women die during pregnancy or childbirth, and 99% die in developing countries; more than 8 million

women experience serious illnesses and live in disability as a result of complications during childbirth (Yalew et al., 2015).

Family planning will help reduce population growth, fertility, contribute to improving the quality of life, women's health

status, unwanted pregnancy, and abortion (Islam, 2017). Hossain et al. (2018) said that complications and death in pregnancy can be prevented by the use of appropriate contraceptive methods because of the many benefits gained from the use of contraceptive for both mother, child, husband, and other family members.

Based on demographic and health surveys in Tulungagung in 2015, the pattern of using long-term contraceptive methods included female sterilization of 3.2%, male sterilization 0.2%, IUD 3.9% and implant use of 3.3%. The number of long-term contraceptive methods users in Tulungagung district in 2016 was 22,463 (18.41%) with an IUD usage pattern of 8,942 participants (7.33%), tubal ligation (MOW) of 3,929 participants (3.22%) and Implants of 9,263 participants (7.59%) (Tulungagung District Health Office, 2016).

While compared to data in 2017 the number of long-term contraceptive methods users has increased to 23,480 participants (18.71%) with an IUD usage pattern of 8,886 participants (7.08%), tubal ligation 4,016 participants (3.20%) and implants amounted to 10,271 participants (8.18%) (Health Office of Tulungagung District, 2017). Based on these data it can be concluded that there was an increase in the use of long-term contraceptive methods in Tulungagung by 1,017 new participants using long-term contraceptive methods.

Jabeen et al. (2011) said that several studies have been conducted to find out the factors that affect the use of contraception. In some cases, a strong association exists between contraceptive users and the socio-demographic, socio-cultural and socio economic characteristics of women. Mohammed et al. (2014) stated that socio-economic factors consist of education, employment, income/wealth status, social education, and residence. A study by Malalu et al. (2014)

reported that socio-cultural factors consist of communication between partners, husband's attitude and support for contraceptive use.

Kamal et al. (2013) found that the number of children, the number of plans for child education and work for the wife, education and employment for the husband, agreement from the husband to use contraception, social networking, communication between partners, and knowledge about contraceptive related to the use of contraception. The age factor also has an association with the use of contraception, the older a woman is, the choice of the use of contraceptive needed leads to a contraceptive that has higher effectiveness (National Population and Family Planning Board (BKKBN), 2013).

Based on the explanation of the above data, the author is interested in finding out details or biosocial, economic, cultural factors that affect women of childbearing age to use long-term contraceptive methods in Tulungagung.

SUBJECTS AND METHOD

1. Study Design

This study was an analytic observational study with a case-control design. The study was conducted at 25 posyandus in Tulungagung, East Java, from January to April 2019.

2. Population and Sample

The target population in this study are all women of childbearing age (15-49 years) who use long-term contraceptive methods and those who do not use long-term contraceptive methods in Tulungagung. A sample of 200 women was selected by stratified random sampling

3. Study Variables

The dependent variable was the use of long-term contraceptive methods. The independent variables in this study were age, education, knowledge, occupation, husband and family support, women's perceptions of contraception, and cultural influences.

4. Operational Definition of Variables

Long-term Contraceptive Methods were a contraceptive tool for delaying, spacing pregnancy and stopping fertility that was used in the long term and had few side effects including IUDs, implants and tubal ligation. The use of long-term contraceptive method was assessed based on using or not. The data were collected by questionnaire. The measurement scale was categorical.

Age was the length of life of the subject of the study, which was calculated in years. The data were collected by questionnaire. The measurement scale was continuous, but for the purpose of data analysis, it was transformed into dichotomous.

Education was a conscious and academic-thematic effort undertaken by study subjects to be able to develop character, values and norms. The data were collected by questionnaire. The measurement scale was categorical.

Knowledge was the information that was known to the subjects of the study about the benefits, advantages and side effects of family planning or contraceptive especially about long-term contraceptive method. The data were collected by questionnaire. The measurement scale was continuous, but for the purpose of data analysis, it was transformed into dichotomous.

Occupation was an activity carried out by subjects of the study that become routine and aim to meet their needs. The data were collected by questionnaire. The measurement scale was categorical.

Husband and Family Support were the attitude, action, acceptance and approval of a husband and family towards family planning or the use of the long-term contraceptive methods. The data were collected by questionnaire. The measurement scale was continuous, but for the purpose of data analysis, it was transformed into dichotomous.

Women's perception. Women's percep-

tion of the use of the long-term contraceptive methods is the view, description or response of the study subject regarding information received related to family planning or long-term contraceptive method. The data were collected by questionnaire. The measurement scale was continuous, but for the purpose of data analysis, it was transformed into dichotomous.

Culture was a whole that includes knowledge, beliefs, art, morals, law, customs and other abilities and habits obtained by study subjects as members of the attitude, action, acceptance and approval of a husband and family towards family planning or the use of the long-term contraceptive methods. The data were collected by questionnaire. The measurement scale was continuous, but for the purpose of data analysis, it was transformed into dichotomous.

Posyandu's role was the efforts of Posyandu and cadre programs in providing education and information as well as persuasion for subjects of the study related to the use of family planning, especially long-term contraceptive methods. The data were collected by questionnaire. The measurement scale was categorical.

5. Data Analysis

Univariate analysis was used to see the frequency distribution and characteristics of study subjects. Bivariate analysis used chi-square test to analyze the association between the uses of long-term contraceptive method with independent variables. Multivariate analysis used multilevel multiple logistic regression analysis. The contextual effect of posyandu on the use of long-term contraceptive methods was shown by the value of intra-class correlations (ICC).

6. Research Ethic

Research ethics includes informed consent, anonymity, confidentiality, and ethical approval. Research ethics was obtained from Research Ethics Committee at Dr. Moewardi

hospital, by decision letter number: 503 / IV / HREC / 2019.

RESULTS

1. Univariate analysis

Table 1 shows the majority of the age of study subjects aged ≤ 35 years as many as 135 people (67.50%). High educated women (≥Senior High School) were 152 people (76%). Women with a high level of knowledge were 158 people (79%). There were 151

working women (75.50%). A total of 149 people (74.50%) women received strong support from their husbands and families. Women who had positive perceptions of the use of long-term contraceptive methods were 154 people (77%).

There were 141 women (70.50%) who gained cultural support for long-term contraceptive method use. There were 128 women who received information and high education from Posyandu (64%).

Table 1. Univariate Analysis

Variable	Frequency	Percentage (%)
Age		
<35 years	65	32.50
≥35 years	135	67.50
Education		
Low (<Senior High School)	48	24
High (≥Senior High School)	152	76
Knowledge		
Low	42	21
High	158	79
Occupation		
Unemployed	49	24.50
Employed	151	75.50
Husband and family support		
Weak	51	25.50
Strong	149	74.50
Women's perception		
Negative	46	23
Positive	154	77
Cultural Influence		
Does not support	59	29.50
Support	141	70.50
The effect of posyandu		
Low	72	36
High	128	64

Table 2 shows the association between independent variables (age, education, knowledge, occupation, husband and family support, women's perceptions of long-term contraceptive methods, cultural influences, the influence of the role of the posyandu) with the dependent variable (use of the long-term contraceptive method). Table 2 presents the results of the

bivariate analysis. There was an effect of age on the use of long-term contraceptive methods. Women aged ≥35 years were likely to use long-term contraceptive method 2.66 times compared to women aged <35 years (OR= 2.66; 95% CI= 1.34 to 5.27; p <0.001).

2. The result of bivariate analysis

There was an effect of education on the use of long-term contraceptive methods. Women with education ≥Senior High School had the possibility to use long-term contraceptive method 4.51 times compared to women with education <Senior High School (OR = 4.51; 95% CI = 2.27 to 8.95; p <0.001).

There was an effect of knowledge on the use of long-term contraceptive method. Women with high knowledge were more likely to use long-term contraceptive method 6.16 times compared to women with low knowledge (OR= 6.16; 95% CI= 2.93 to 12.95; p<0.001).

Table 2. Bivariate Analysis

Independent Variable	Long-term Contraceptive Method		Non-Long-term Contraceptive Method		OR	95% CI	p
	n	%	n	%			
Age							
<35 years	51	78.47	14	21.53	2.66	1.34-5.27	<0.001
≥35 years	78	57.77	57	42.23			
Education							
<Senior High School)	18	37.50	30	62.50	4.51	2.27-8.95	<0.001
≥Senior High School)	111	73.02	41	26.98			
Knowledge							
Low	13	30.95	29	69.05	6.16	2.93-112.95	<0.001
High	116	73.41	42	26.59			
Occupation							
Unemployed	20	40.81	29	59.19	3.76	1.92-7.36	<0.001
Employed	109	72.18	42	27.82			
Husband and Family Support							
Weak	18	35.29	33	64.71	5.35	2.70-10.59	<0.001
Strong	111	74.49	38	25.51			
Women's perception							
Negative	15	32.60	31	67.40	5.89	2.88-12.02	<0.001
Positive	114	74.02	40	25.98			
Culture							
Does not support	22	37.28	37	62.72	5.29	2.75-10.17	<0.001
Support	107	75.88	34	24.12			
Posyandu Role							
Weak	30	41.66	42	58.34	4.77	2.55-8.93	<0.001
High	99	77.34	29	22.66			

There was an effect of employed women on the use of long-term contraceptive methods. Employed women had the possibility to use long-term contraceptive method 3.76 times compared to unemployed women (OR= 3.76; 95% CI = 1.92 to 7.36; p <0.001). There was an effect of women who received strong support husband and family for the use of the long-term contraceptive methods. Women who

received strong support from husband and family were 3.35 times more likely than women who received weak support from a husband and family (OR= 5.35; 95% CI= 2.70 to 10.59; p <0.001).

There was a good effect of women's perceptions on the use of long-term contraceptive methods. Women who had a positive perception of long-term contraceptive method

were 5.89 times more likely than women who had a negative perception of long-term contraceptive method (OR = 5.89; 95% CI = 2.88 to 12.02; p < 0.001).

There was a cultural influence that supports the use of long-term contraceptive methods. Women in a supportive cultural environment were 5.29 times more likely than women in a non-supportive cultural environment (OR = 5.29; 95% CI = 2.75 to 10.17; p < 0.001).

There was a strong influence of Posyandu's role on the use of long-term contraceptive method. Women who had the influence of a high posyandu had a probability of 4.77 times compared to women who had a low influence from posyandu (OR= 4.77; 95% CI= 2.55 to 8.93; p < 0.001).

3. The result of multilevel analysis

Table 3 presents the results of a multilevel multiple logistic regression analysis on the use of the long-term contraceptive methods. Women aged ≥35 years were more likely to use long-term contraceptive methods. Women aged <35 had the logodd to use long-term contraceptive method 1.68 units higher than women >35 years old (b = 1.68; 95% CI = 0.51 to 2.85; p= 0.005).

Women with high education (≥Senior High School) were more likely to use long-term contraceptive methods. Women with education level ≥Senior High School had the logodd to use long-term contraceptive method 2.22 units higher than women who had education level <Senior High School (b= 2.22; 95% CI = 0.97 to 3.46; p < 0.001).

Table 3. The results of multilevel multiple logistic regression on the use of long-term contraceptive method

Independent Variable	b	95% CI		p
		Lower limit	Upper limit	
Fixed Effect				
Age(≥35 years)	1.68	0.51	2.85	0.005
Education (≥Senior High School)	2.22	0.97	3.46	<0.001
Knowledge (high)	2.05	0.75	3.35	0.002
Occupation (work outside)	1.66	0.54	2.78	0.004
Husband and Family Support (strong)	2.11	0.87	3.34	0.001
Women's perception on long-term contraceptive method (good)	1.92	0.75	3.08	0.001
Culture (Support)	1.42	0.34	2.49	0.009
Random Effect				
The influence of Posyandu's Role				
Var (constant)	1.20	0.20	7.11	
n observation = 200				
Log likelihood = -68.54				
LR test vs. logistic regression, p = 0.042				
ICC = 26.70%				

Women who had high knowledge were more likely to use long-term contraceptive methods. Women who had high knowledge had the logodd to use long-term contraceptive method 2.05 units higher than women who had low knowledge (b= 2.05; 95% CI= 0.75 to 3.35; p= 0.002).

Employed women were more likely to use long-term contraceptive methods. Employed women had the logodd to use long-term contraceptive method 1.66 units higher than unemployed women (b= 1.66; 95% CI= 0.54 to 2.78; p = 0.004).

Women who received strong support from husband and family were more likely to use the long-term contraceptive methods. Women who received strong support from husband and family had the logodds to use long-term contraceptive methods 2.11 units higher than women who received weak support from husbands and families ($b = 2.11$; 95% CI = 0.87 to 3.34; $p = 0.001$).

Women who had a positive perception of using long-term contraceptive methods were more likely to use long-term contraceptive methods. Women who had positive perceptions had the logodds to use long-term contraceptive methods 1.92 units higher than women who had negative perceptions ($b = 1.92$; 95% CI = 0.75 to 3.08; $p = 0.001$).

Women who were in a supportive cultural environment were more likely to use the long-term contraceptive method. Women who were affected by supportive cultural environment had the logodds to use long-term contraceptive method 1.42 units higher than women who were affected by cultures that did not support ($b = 1.42$; 95% CI = 0.34 to 2.49; $p = 0.009$). Based on data analysis, ICC results obtained = 26.70%. The indicator shows that the variation of long-term contraceptive methods usage as much as 26.70% was determined by variables at posyandu. The table also shows that $p = 0.042$. This means that the multilevel model was statistically significant different from the ordinary logistic regression model.

DISCUSSION

1. The effect of women's age on the use of long-term contraceptive method

The results showed that women with age ≥ 35 years were more likely to use long-term contraceptive methods than women with age < 35 years. The results of this study are in line with a study by Bhandari et al. (2019) which stated that women aged 25-35 years were 1.03 times more likely to use long-term

contraceptive methods. Women < 25 years old prefer to use non-long-term contraceptive methods or use natural contraception, while women > 35 years old are less interested in using contraceptive because of menopause which causes decreased sexual arousal and sexual activity (Islam et al., 2016).

In his study, he also mentioned that fertile young women are afraid of the side effects caused to her uterus when using an IUD. A study by Fekadu et al., (2017) age of women has a strong association with long-term contraceptive method, in their study found an increase of 6.3 times the use of long-term contraceptive methods in a group of women over the age of 35 years.

2. The effect of women's education on use of long-term contraceptive methods

The results showed that women with higher education levels were 2.22 times more likely to use long-term contraceptive method compared to women with low education levels. In line with a study of Islam et al. (2016) that the level of education of women has a significant effect on the use of contraception. Educated women have good knowledge and attitude towards contraception. Islam and Hasan (2016) also mentioned that educated women will create the norm so that their families become happy small families.

Education level in statistical tests by Fekadu et al. (2017) also showed a significant association to the use of long-term contraceptive methods. Women with higher education have a 4.4 times greater chance of using long-term contraceptive methods compared to women with low education.

A study by Bolarinwa and Olagunju (2019) also explains that the level of education is related to the use of long-term contraceptive methods, in the study of educated women who know what is needed to maintain their reproductive health. Higher education also affects women to respond

rationally to outside information about its long-term benefits (Agus et al., 2019).

3. The effect of women's knowledge on the use of long-term contraceptive methods

The results showed that women who had high knowledge had a 2.05 greater chance to use long-term contraceptive method rather than women who had low knowledge. The results of this study are also in line with a study conducted by Tesfa and Gedamu (2018) which stated that women who have high knowledge of long-term contraceptive methods are 6 times more likely to use long-term contraceptive method. Women who have high knowledge have an understanding of the benefits of using long-term contraceptive methods (Getahun et al., 2018). High knowledge of contraceptive will encourage women and partners to determine the appropriate contraceptive and which provide minimal side effects (Islam et al., 2016). A study conducted by Bolarinwa and Olagunju (2019) also stated that knowledge of the benefits and safety of the long-term contraceptive methods makes this method of contraceptive more preferred by women and couples.

4. The effect of women's occupation on the use of long-term contraceptive methods

The results showed that women who worked had 1.66 times greater chance to use long-term contraceptive methods compared to women who did not work. The results of this study are in line with a study by Fekadu et al. (2017) which stated that women with employment status significantly influence the use of long-term contraceptive methods compared to women who are housewives. It is also very influential on women who work every day. Islamic study and Hasan (2016) stated that working women are also influenced by education so that indirectly women who work have good knowledge of effective

and long-term types of contraception.

5. The effect of husband and family support on the use of long-term contraceptive methods

The results showed that there was a significant influence of strong husband and family support on the use of the Long-term Contraceptive Method. The results of this study are in line with a study by Islam et al. (2016) which stated that the support and approval of the husband is very influential in making decisions to use contraceptive methods. Parven (2000) stated that support or approval from a husband can be said to be one of the main factors in determining a woman's contraception. A positive response from her husband and family makes women more confident in using long-term contraceptive methods.

6. The effect of women's perception on the use of long-term contraceptive methods

The results showed that there was a significant influence of the positive perception of women on the use of long-term contraceptive method. The results of this study are in line with a study by Islam et al. (2016) which stated that good perceptions from women greatly influence the use of long-term contraceptive methods. A good perception of women increases the likelihood of partner participation in using contraceptive methods (Kamal et al., 2013).

7. The effect of culture on the use of long-term contraceptive methods

The results showed that there was a significant influence of the surrounding culture on the use of the long-term contraceptive method. The results of this study are in line with Olaitan's (2011) study which stated that cultural norms significantly influence the use of contraceptive methods. The local environment and culture that creates social norms can be a very powerful influence on couples who will choose to use a particular method of

contraception. Using contraceptive in some countries is considered a method of limiting the number of children and having few children is part of the norm. Couples often don't realize that the existence of norms in their environment can influence their choice to use contraception. Couples choose to use a particular method of contraceptive that is generally used in their society because they know the contraceptive is acceptable in their social environment.

8. The effect of posyandu's role on the use of long-term contraceptive methods

The results showed that there was a significant effect of the role of posyandu on the use of Long-term Contraceptive Method. The results of the study with multilevel analysis showed that ICC= 26.70%. The indicators indicate that the involvement of posyandu and cadres had an effect on variations in the use of long-term contraceptive methods by 26.70%. So, the effect of posyandu and cadre is very important to be considered.

The results of this study are in line with a study by Nasir (2008) which stated that Posyandu through its health cadres provides informative and persuasive communication to mothers who come to posyandu related to maternal and child health (MCH), reproductive health and family planning. Providing health information that cannot be reached by doctors or paramedics can be done by Posyandu as the smallest unit of public health service provider.

AUTHORS CONTRIBUTION

Dika Yanuar Frafitasari collected and processed data of the study. Uki Retno Budihas-tuti examined the conceptual framework and methodology of the study. Bhisma Murti examined manuscripts of the study and data analysis

CONFLICT OF INTEREST

There is no conflict of interest.

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