Application of Health Belief Model on Factors Influencing Long-Term Contraceptive Use

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ABSTRACT

Background: Family planning is one of the strategies to reduce maternal mortality. Data in 2017 shows that in Indonesia, out of 37,338,265 couples of reproductive age there were 18.63% who did not do family planning. Women of reproductive age (WRA) who have not done family planning can affect reproductive health. This study aimed to analyze factors influencing long-term contraceptive method (LTCM) using health belief model theory.
Subjects and Method: This was a cross sectional study conducted in Sleman, Central Java, from March to April 2019. A sample of 220 women of reproductive age was selected by quota sampling. The dependent variable was LTCM use. The independent variables were perceived severity, perceived susceptibility, perceived benefit, cues to action, self-efficacy, education, and culture. The data was collected by questionnaire and analyzed by a multiple logistic regression.
Results: Perceived severity (OR= 8.02; 95% CI= 2.62 to 24.51; p<0.001), perceived susceptibility (OR= 12.16; 95% CI= 3.65 to 40.42; p<0.001), perceived benefit (OR= 6.05; 95% CI= 2.10 to 17.40; p= 0.001), cues to action (OR= 6.98; 95% CI= 2.30 to 21.18; p= 0.001), self-efficacy (OR= 3.60; 95% CI= 1.23 to 10.52; p= 0.019), education (OR= 2.50; 95% CI= 1.40 to 10.41; p= 0.029), culture (OR= 6.65; 95% CI= 2.14 to 20.62; p= 0.001) increased long-term contraceptive use.
Conclusions: Perceived severity, perceived susceptibility, perceived benefit, cues to action, self-efficacy, education, culture increase long-term contraceptive use.

Keywords: family planning, long-term contraceptive, health belief model

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BACKGROUND

The population as a determinant of development in terms of the health sector must be based on population dynamics. Development efforts in the health sector are reflected in health programs through promotive preventive, curative, and rehabilitative efforts (Ministry of Health 2018).

The Center for Health Data and Information of R.I 2016 states that reproductive health is not only physical health but also overall health, namely physically, mentally, and socially and free from diseases or disabilities related to the system, function and process of reproduction. The scope of reproductive health includes maternal and child health, family planning, prevention and management of complications of sexually transmitted diseases (STD) including HIV/AIDS, adolescent reproductive health, treatment and prevention of abortion, infertility, advanced reproductive health, early detection of cancer reproductive tract, sexual violence, and culture related to reproduction.

One of the health problems was reproductive health in the human life cycle, namely the lack of self-awareness in planning a family for brides. It was showed that there were still many incidences of

pregnancies that were at risk, such as pregnancy at a young age or too old age, pregnancies that were too far or too close can lead to maternal and infant death. Indonesia's health profile data in 2016 shows that the Maternal Mortality Rate (MMR) is 305 per 100,000 live births (Ministry of Health RI, 2018)

Population growth rate (PGR) in Yogyakarta continued to increase from the period of 1990-2000 which was 0.72, then experienced an increase in the period 2000-2010 by 1.04 and based on data of 2010 to 2016, which was 1.18. Central Bureau of Statistics of Yogyakarta has the largest population compared to the other 4 districts (Kulon Progo, Bantul, Yogyakarta and Gunung Kidul) (BPS RI, 2018).

Family planning was one of the strategies to reduce maternal mortality, especially for women with 4T conditions, who were too young to give birth (<20 years old), giving birth too often, close distance of giving birth, and too old to give birth (over 35 years old). In addition, family planning also aimed to create a quality family so that a sense of security, peace and hope for a better future can arise in realizing family welfare. Based on data in 2016, it showed that in Indonesia, out of 37,338,265 couples of reproductive age, there were still 1863% of who did not do family planning (Indonesian Ministry of Health, 2018).

WRA coverage in Yogyakarta that did not do use contraceptive was 99.790 (20. 25%) of the total WRA, which was 492,745. From 5 regencies in Yogyakarta, in Sleman Regency active family planning members decreased from 2015 with a percentage of 75.10% to 74.8% in 2016. The working area of Mlati II Health Center, it was noted to have the lowest FP achievement compared to other health centers in Sleman regency which was 72.95% (Indonesian Ministry of Health, 2018).

One of the ways to improve health services was production and family planning through counseling. One method of counseling was applying. Murti (2018) states that the theory of Health Belief Model (HBM) is influenced by several factors, including perceived vulnerability, perceived severity, perceived benefits, perceived barriers, cues to act and self-efficacy (Murti, 2018)

Aulia (2016), using the health belief model study concluded that there was a relationship between perceived vulnerability, seriousness, benefits and barriers and the act of early detection of cervical cancer using the IVA method among WRA at the Padang Pasir Health Center in 2016 (Aulia, 2016).

Nugrahani et al. (2017) concluded that there was a relationship between perceived susceptibility, perceived severity, perceived threat, perceived benefit, perceived barrier, and cues to action. Riantini et al. (2018) stated that there was a significant difference before and after counseling on the knowledge of premarital couple.

SUBJECTS AND METHOD

1. Study Design

This was an analytic observational study with a cross sectional design. The study was conducted in Sleman Regency.

2. Population and Sample

The target population was women of reproductive age. Source population was women of reproductive age in Mlati, Depok III, Kalasan, Ngaglik, and Ngemplak community health centers, in Sleman, Yogyakarta, from March to April 2019. A sample of 220 women of reproductive age was selected by quota sampling.

3. Study Variables

The dependent variable was long-term contraceptive use. The independent variables

were perceived severity, perceived susceptibility, perceived benefit, cues to action, self-efficacy, education, and culture.

4. Definition Operational of Variables

Family planning. Long-term contraceptive use was family planning actions that aim to maintain reproductive health and prosper the family by using long-term contraception. The measurement scale was categorical.

Perceived severity. Perceived severity was a person's perception of the severity or seriousness of an illness.

Perceived susceptibility. Perceived susceptibility was defined as a person's perception of the risk of suffering from a particular disease or the adverse effects of an illness. The measurement scale was continuous.

Perceived benefit. Perceived benefit was a person's perception about the benefits that would be felt if someone changed the behavior. The measurement scale was continuous.

Cues to action. Cues to action was a trigger factor for actions that can come from inside or outside. The measurement scale was continuous.

Self efficacy. Self-efficacy was defined as self confidence about changes in behavior that would be carried out. The measurement scale was continuous.

Education. Education was something that was taken through government agencies. The measurement scale was continuous.

Culture. Culture was defined as all systems of ideas, actions, and works produced by humans in social life that would be used as human claims by learning in the future. The measurement scale was continuous.

5. Data Analysis

The data were analyzed by a multiple logistic regression to determine the relationships of independent variables and dependent variable.

6. Research Ethics

Research ethics included informed consent, anonymity, confidentiality, and ethical clearance. Ethical clearance was obtained from Dr. Moewardi Hospital, Surakarta, Central Java, with number: 500/ UN27.6-/KEPK/2018.

RESULTS

1. Sample Characteristics

Sample characteristics were described in Table 1.

Table 1. Sample Characteristics

Characteristics	n	%
Religion		
Islam	193	87.7
Catholic	9	4.0
Christian	17	7.7
Hindu	1	0.6

Table 1 showed that the sample who were Muslim were 193 (87.7%), Catholic were 9 (4.0%), Christians were 17 (7.7%), and Hindu was 1 (0.6%).

2. Univariate Analysis

Table 2 showed that study subjects with high perceived severity was 171 (77.7%), high perceived vulnerability susceptibility was 164 (74.35%), high perceived benefit was 159 (71.4%), cues to action was 153 (69.5%), self-efficacy was 157 (71.4%), high education was 154 (70.0%), and culture was 158 (71.8%).

3. Bivariate Analysis

Bivariate analysis to examine the effects of perceived susceptibility, perceived severity, perceived benefit, cues to action, self efficacy, education, culture, and long term contraceptive use. The results of bivariate analysis can be showed in Table 3.

Table 3 showed that there were positive relationship of perceived susceptibility (OR= 4.86; 95%CI 2.50 to 9.43; p<0.001), perceived severity (OR= 6.81, 95% CI 3.39 to 13.66; p< 0.001), perceived benefit (OR=

6.21; 95% CI= 3.19 to 12.12; p<0.001), cues to action (OR=3.56; 95% CI 1.88 to 6.73; p<0.001), self efficacy (OR=3.82; 95% CI 2.01 to 7.29; p<0.001), high education (OR= 6.87; 95%CI= 3.53 to 13.36; p <0.001), and culture (OR= 5.32; 95% CI 2.76 to 10.25; p<0.001) on long-term contraceptive use.

Table 2. Univariate analysis

Independent Variables	n	%
Long-term contraceptive use		
Yes	165	74.5
No	56	25.5
Perceived severity		
High	171	77.7
Low	49	22.3
Perceived susceptibility		
High	164	74.5
Low	56	25.5
Percepived benefit		
High	159	72.3
Low	61	27.7
Cues to Action		
High	153	69.5
Low	67	30.5
Self-Efficacy		
High	157	71.4
Low	63	28.6
Education		
>high school	154	70.0
≤high school	66	30.0
Culture		
High	158	71.8
Low	62	28.2

4. Multivariate Analysis

Table 4 showed the results of multivariate analysis. Table 4 showed that women of reproductive age with high perceived susceptibility increased long-term contraceptive use 8.02 times than those with low perceived susceptibility (OR= 8.02; 95% CI= 2.62 to 24.52; p <0.001).

Women of reproductive age with high perceived severity increased long-term contraceptive use 12.16 times than those with low perceived severity (OR= 12.16 95%CI 3.65 to 40.42; p<0.001).

Women of reproductive age with high perceived benefit increased long-term contraceptive use 6.05 times than those with low perceived benefit (OR= 6.05; 95%CI= 2.10 to 17.40; p=0.001).

Women of reproductive age with high cues to action increased long-term contraceptive use 6.98 times than those with low cues to action (OR= 6.98; 95%CI 2.30 to 21.18; p=0.001).

Women of reproductive age with strong self-efficacy increased long-term contraceptive use 3.60 times than those with low self efficacy (OR= 3.60 95%CI= 1.23 to 10.52; p= 0.019).

Women of reproductive age with high education increased long-term contraceptive use 2.50 times than those with low education (OR= 2.50 95%CI= 1.40 to 10.41; p= 0.029).

Women of reproductive age with supportive culture increased long-term contraceptive use 6.65 times than those without supportive culture (OR= 6.65; 95%CI= 2.14 to 2.72; p<0.001).

Table 3. Bivariate analysis

Independent Variables	LTCM use				OR	CI 95%		p
	Yes		No			Lower Limit	Upper Limit	
	n	%	n	%				
Perceived Vulnerability								
High	136	82.9	28	17.1	4.86	2.50	9.43	<0.001
Low	28	50	28	50				
Perceived Severity								
High	143	83.6	28	16.4	6.81	3.39	13.66	<0.001
Low	21	42.9	28	57.1				
Perceived Benefit								
High	135	84.9	24	151	6.21	3.19	12.12	<0.001
Low	29	47.5	32	52.5				
Cues to Action								
High	126	82.4	27	17.6	3.56	1.88	6.73	<0.001
Low	38	56.7	29	43.3				
Self-Efficacy								
High	130	82.3	28	17.7	3.82	2.01	7.29	<0.001
Low	34	54.8	28	45.2				
Education								
>high school	132	86.3	21	13.7	6.87	3.53	13.36	<0.001
≤high school	32	47.8	35	52.5				
Culture								
High	133	84.2	25	15.8	5.32	2.76	10.25	<0.001
Low	31	50	31	50				

Table 4. The Results of Multivariate Analysis

Independent Variables	OR	CI 95%		p
		Lower Limit	Upper Limit	
Perceived severity (high)	8.02	2.62	24.52	<0.001
Perceived susceptibility (high)	12.16	3.65	40.42	<0.001
Perceived benefit (high)	6.05	2.10	17.40	0.001
Cues to act (yes)	6.98	2.30	21.18	0.001
Self efficacy (strong)	3.60	1.23	10.52	0.019
Education (>HS)	2.50	1.40	10.41	0.029
Culture (supportive)	6.65	2.14	2.72	0.001
N= 220				
LR chi²= 126.45				
p<0.001				
R²= 50.66%				
Log likelihood= -61.57				

DISCUSSION

1. The relationship of perceived severity and long-term contraceptive use

The level of severity has a statistically significant relationship with long-term contraceptive methods. This esd in line with the study of Davies et al. (2016), which states that someone who has a perception of long-term contraceptive methods is susceptible to experience side effects and has a greater likelihood of taking preventive measures so that no side effects occur. Conversely, someone who has a low per-

ceived susceptibility to experience the side effects of a smaller possibility to take the necessary actions to prevent the occurrence of these side effects. An unwanted pregnancy was one of the severities experienced by women of reproductive age who were also not using long-term contraception.

Brown (2010), stated that perceived severity increased long-term contraceptive use among women of reproductive age and it can prevent unwanted pregnancies.

2. The relationship of perceived susceptibility and long-term contraceptive use

The results of the analysis showed that there was a relationship between perceived susceptibility and long-term contraceptive use. Someone who has a perception that a long-term contraceptive method was life threatening, caused disability, pain, broad impact would not use long-term contraceptive methods (Davies et al. 2016). Women of reproductive age were prone to repeated unwanted pregnancies. Morse et al. (2012) mentions that unwanted repetitive pregnancies can be prevented by long-term contraceptive use, so women of reproductive age who were prone to unwanted pregnancies can use long-term contraception.

3. The relationship of perceived benefit and long-term contraceptive use

The results of the analysis showed that there was a relationship between perceived benefit and long-term contraceptive use.

The results of this study were in line with Chipeta et al. (2010) which stated that long-term contraceptive methods were influenced by the benefits. Someone who knew the benefits of long term contraceptive methods would choose to use family planning compared to those who did not know. Turok et al. (2016), mentions that one of the benefits felt by women of reproductive age in long-term contraceptive use is very effective contraception and if it was taking off, the fertility would return quickly and without special care. Women with low sexual experience and a history of low sexual activity would need to use long-term contraception. One of the benefits of long term contraception was possessing high effectiveness in preventing pregnancy, especially unwanted pregnancy (Hoopes et al. 2016)

4. The relationship of cues to action and long-term contraceptive use

The results of the analysis showed that there was a relationship between cues to action and long-term contraceptive use.

Davies et al. (2016) stated that long term contraceptive use was influenced by cues to action. Cues to action were stimuli needed to trigger the decision making process so that health behavior changes occur. Cues to act were incidents, people, or things that can move people to change their behavior. Provision of health personnel who received training in the installation of long-term contraception can increase long term contraceptive use in women of reproductive age (Luchowski et al. 2014). Family encouragement, especially husband, can be a factor in increasing long-term contraceptive use in women of reproductive age (Yalew et al. 2015).

5. The relationship of self-efficacy and long-term contraceptive use

The results of the analysis showed that there was a relationship between self efficacy and long-term contraceptive use.

Long-term contraceptive use was affected by self-efficacy about how certain methods can affect relationships with partners. Someone who believed that long-term contraceptive methods can be beneficial and did not think that they were able to do it, then the change would not be tried (Chipeta et al. 2010).

6. The relationship of education and long-term contraceptive use

The results of the analysis showed that there was a relationship between education and long-term contraceptive use.

Wijaya et al. (2019) stated that there is a significant relationship between education and long-term contraceptive use. The higher a person's education, the easier it was for someone to take the option to use long-term contraception. Education and counseling on long-term contraception can increase long-term contraceptive use in women of reproductive age (Ortiz, 2019). Teferra (2015) stated that education and employment were one of the factors which support long-term contraceptive use for women of reproductive age.

Education was a learning process that can improve knowledge and information. Women with higher education would have more knowledge about long-term contraceptive methods, both regarding benefits, side effects, advantages, disadvantages, barriers to contraceptive use (Maghfiroh et al. 2019; Haile, 2018; Yakubu and Salisu, 2018).

7. The relationship of culture and long-term contraceptive use

The results of the analysis showed that there was a relationship between culture and long-term contraceptive use.

The results of this study were in line with Blackstone et al. (2017) who stated that culture strongly influences a person's behavior to use long-term contraceptive methods. Cultural factors were equally important in a couple's decision about contraception.

When a new family moved, they would be faced with the challenge of adjusting to a new society and a new way of life, they might rely heavily on traditional culture regarding family, sexuality, and fertility. While health care providers must be careful to not attribute religion, social and cultural characteristics to women who seek advice on contraception, they need to be aware that different value systems can influence decision making on contraceptive (Pinter et al., 2016).

AUTHOR CONTRIBUTIONS

Ayu Dhiah Pitaloka played a role in collecting and processing data analysis; Pawito examined the conceptual framework and methodology; Hanung Prasetya wrote the interpretation of data analysis.

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This study used personal fund.

CONFLICT OF INTEREST

The researchers did not have any conflict of interest.

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