

## Conference Paper

# The Relationship in Mothers Between Knowledge Level and Compliance in the Use of Birth Control Pills

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**Abstract.**

The Indonesian Government has used family planning in an effort to suppress the rate of population growth in Indonesia which is considered very fast. A rapid rate of population growth can increase the burden of national development and reduce the quality of family life. Therefore, the Government has attempted to reduce the total fertility rate in Indonesia. The impact of non-compliance in taking birth control pills can cause the hormones contained in the pill to not work optimally, and therefore pregnancy may not be prevented. Non-adherence often occurs in long-term drug consumption, including birth control pills. Compliance in taking birth control pills is a behavior related to a person's level of knowledge about how to correctly use them. The purpose of this study was to determine the relationship between the level of knowledge and adherence to the use of birth control pills in women of childbearing age in Beru Village, Blitar Regency. Descriptive methods were used with a cross-sectional design. Data were collected using a knowledge questionnaire and a compliance questionnaire filled out by 100 respondents who were reproductive age women in Beru Village, Blitar Regency between June-July 2021. The findings showed that there was a relationship between the level of knowledge of women of childbearing age and the level of adherence to using birth control pills appropriately ( $p < 0.05$ ).

**Keywords:** birth control pills, oral contraception, childbearing age, contraception, knowledge level, compliance level

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## 1. INTRODUCTION

Family Planning (KB) is the government's effort to suppress the rate of population growth in Indonesia which is considered very fast [1]. The very rapid rate of population growth can increase the burden of government development and reduce the quality of life for families. Therefore, it is necessary to pursue a government program as an effort to reduce the Total Fertility Rate (TFR) in Indonesia, namely the Family Planning (KB) program. The importance of the existing program in the Indonesian government since the New Order year 1970 has the aim of controlling population growth, reducing birth

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rates, and regulating the time to have children or birth spacing[2]. In line with the government's goal to reduce the rate of population growth using the family planning program, contraceptive services in Indonesia do not require married couples to determine the number and restriction of pregnancies they want[3].

The availability of various choices of contraceptive methods and drugs in every health service with complete information is a challenge for the government in the success of the family planning program. Therefore, the role of health workers is needed, especially the role of pharmacists in improving and maximizing family planning programs. The pharmacist profession is one of the professions that has the potential to be a supporter of the implementation of the national family planning program in the form of family planning services with an important role, namely providing the information needed to patients about safe and effective ways of using contraceptive methods and several alternative methods of contraception [4].

The target of the KB pill program is couples with a fertile age range (EFA) and the emphasis is on women of childbearing age (WUS) with an age range of 20-35 years who are safe for pregnancy[3]. Based on Riskesdas data, 59.7% of WUS in Indonesia are acceptors of family planning pills, namely 59.3% using modern family planning pills (implants, MOW, MOP, IUD, injections, pills) and 0.4% using traditional family planning methods (breastfeeding/MAL, periodic abstinence/calendar, interrupted intercourse) [5].

Data based on the Ministry of Health of the Republic of Indonesia with the most widely used injection method of contraception is 48.56% and the use of the contraceptive method with the pill with the second most is 26.60%[6]. According to BPS data from East Java Province in 2019, the use of contraception with the injection method reached 3,046,942 (50.44%) and the pill method reached 1,163,375 (19.27%) [7]. Active family planning participants in Blitar Regency were data based on the type of non-MKJP method consisting of 35% injections, 30, 75% pills and 10.65% implants[8]. In Beru Village, active family planning participants who used injections reached 370 (43.22%), 125 pills (14.6%), 99 implants (11.57%), and 30.61% other methods[9]. According to this source, the majority of family planning participants in Beru Village prefer the use of non-MKJP, one of which is the pill type of family planning.

In relation to how to realize the massive and effective birth control pill program held by the government, it is important to know that compliance is a behavior of loyalty, commitment to change one's attitude and behavior can occur when the supporting factors that influence adherence are strong in a person and before compliance is created, someone will first know, recognize, and finally go to the stage of internalizing or applying to himself [7]. According to the WHO (World Health Organization), three

hundred and eighty million couples who carry out family planning programs and 65 to 75 million of them, mainly in developing countries such as Indonesia, mostly use pills to delay pregnancy. However, this number cannot be ascertained that all of them are taking pills regularly and causing an unplanned pregnancy [9]. Data from the WHO proves that the success rate of the contraceptive pill is very high compared to other contraceptive methods, reaching 90 out of 1000 people, while the unsuccessful injecting type of contraception is around 60 out of 1000 people. It is different with the implant method which has a failure rate of 0.5 percent or the least, when compared to the IUD method as many as 8.5 people [10].

The impact of non-compliance in taking birth control pills can result in pills containing hormones not working optimally. Non-compliance often occurs in long-term drug consumption, including birth control pills. This allows the acceptor to not accept his condition and finally he aborts the womb and has a high risk, such as having an abortion [11]. The level of knowledge on the use of birth control pills is influenced by a person's age, education and occupation. The low level of education and lack of understanding about the correct use of birth control pills causes acceptors not to comply with taking pills regularly [12]. The average number of babies born to a woman with a low education level is 4.1%, while the number of high school graduates is around 2.7% in one family. This happens because the nature of not looking for women who have a low level of education [11]. In a previous study conducted by (Barokah and Melani, 2020) [13] it was found that only 18.69% of mothers who used birth control pills were categorized as good while 31.40% were categorized as bad. This shows that mothers who use birth control pills are still dominated by poor knowledge.

Research that has been carried out quantitatively by Karundeng, with a cross-sectional approach to 40 respondents using contraceptive pills, concluded that there was a change in the menstrual cycle by women who took pills containing hormones [13]. This causes irregular menstrual problems which is one of the reasons why users of birth control pills are disobedient in taking birth control pills. A regular menstrual cycle is sometimes a relevant indicator of the health of a woman's reproductive organs, so that if the menstrual cycle is irregular it can cause problems that can affect women's quality of life [14]. However, research conducted in Bangladesh by Huda et al., (2019) [15]. In fact, he said that women tend to perceive pill contraception more positively than injectable hormonal types. This quantitative study involving 583 respondents reported that 90% of respondents believed that birth control pills were easy to use and 75% of respondents stated that birth control pills did not cause serious health problems compared to injectable hormonal contraceptives, which only 38% believed.

Respondents' intention or intention to use birth control pills compared to injectable hormonal types was also higher.

Based on what is in the description above, the researcher wants to make Beru Village, Blitar Regency, as the chosen location, it has a total population of 7,594 people and the number of active family planning pill acceptors is 125 people [16]. Beru Village has the highest birth rate among other villages in Blitar Regency with 108 births [17]. Based on the results of interviews with KB pill acceptors in Beru Village, nine out of ten acceptors are still disobedient and often take it lightly if they forget one or two pills while taking the KB pill. Adherence itself is an important factor in taking birth control pills to avoid the lack of effectiveness of birth control pills [8]. The hypothesis taken is to look at the picture and relate the knowledge of family planning acceptors to the problem of lack of adherence to taking birth control pills in Beru Village. According to Lawrence Green's theory, before achieving obedient behavior and attitude, family planning acceptors must know in advance how to take birth control pills correctly and correctly, in addition to knowing other important predisposing factors, namely age, education level, occupation as well as enabling factors, namely the availability of health services and other factors. support, namely family and community support [16].

## 2. RESEARCH METHODS

This research is a descriptive analytic research that is a form of research that sees or observes a characteristic and description of the phenomenon that occurs and then analyzes whether there is a relationship between the knowledge variable and compliance. This type of research is used to describe and describe various health problems that occur in a population [18]. Determination of the sample in this study was carried out using the Incidental Sampling technique so that sampling will be carried out with the selected subjects who happened to be found and in accordance with the criteria [19]. The sample is part of the population whose characteristics can be measured or investigated where the number of selected sample units can represent the entire population [20]. Because there is no latest data in 2020 that mentions the number of family planning acceptors in Beru Village, to determine the sample size using the Lameshow and Lwanga formulas, 100 samples were obtained. The data obtained are primary data consisting of supporting data, knowledge, and compliance with the use of birth control pills in Beru Village, Blitar Regency.

The data analysis used is univariate and bivariate. Univariate analysis to describe the characteristics of each variable, namely knowledge and adherence to the use of birth

control pills in women of childbearing age. Then proceed with bivariate analysis using Chi-Square.

### 3. RESULTS

This research was conducted on 07 June-20 July 2021 in Beru Village, Wlingi District, Blitar Regency. The data obtained are as follows :

TABLE 1: Characteristics of Respondents Supporting Data.

Information	Number of Respondents	Percentage (%)
<b>Respondent Age</b>		
1. 17-20 Years	7	7
<b>2. 21-35 Years</b>	<b>64</b>	<b>64</b>
3. 36-49 Years	29	29
<b>Respondent Education Level</b>		
1. Graduated from Elementary School/Equivalent	9	9
2. Graduated from junior high school/equivalent	15	15
<b>3. Graduated from high school/equivalent</b>	<b>60</b>	<b>60</b>
4. Graduated from College	16	16
<b>Respondent's Type of Work</b>		
<b>1. Housewife</b>	<b>46</b>	<b>46</b>
2. Private Employees	32	32
3. Civil Servants	8	8
4. Labor/Farmers	13	13
5. Not Working	2	2

In **Table 1** above, it can be explained that the majority of respondents are of child-bearing age in Beru Village in the peak reproductive range (21-35 years) as much as (64%). In this study, the majority of respondents graduated from high school/equivalent (60%). Furthermore, demographic factors that can affect the level of knowledge are the type of work a person in this study (46%) of respondents of childbearing age have a job as a housewife.

#### 3.1. Normality test

The normality test used is the One-Sample Kolmogorov-Smirnov SPSS 23.0 analysis technique. The results obtained are 0.095, which means the data can be distributed

normally. After the data is normally distributed, then the analysis is carried out using the Chi-square test.

### 3.1.1. Univariate Analysis

TABLE 2: Frequency Distribution of Knowledge, and Compliance with the Use of Birth Control Pills.

Variable	Category	Number of Respondents	Percentage (%)
<b>Knowledge</b>			
Well	76%-100%	40	40
<b>Enough</b>	<b>56%-75%</b>	<b>41</b>	<b>41</b>
Not good	40%-55%	17	17
Not good	<40%	2	2
<b>Obedience</b>			
<b>Obey</b>	<b>50%</b>	<b>79</b>	<b>79</b>
Not obey	< 50%	21	21

Table 2 shows that the knowledge of the respondents in this study is in the sufficient category (41%). Furthermore, it was found that the percentage of respondents who were obedient in using the birth control pill was 79% and as many as 21% of the respondents were classified as non-compliant in using the birth control pill. These results indicate that the majority of women of childbearing age are obedient in using birth control pills.

### 3.2. Bivariate Analysis

TABLE 3: Chi-square test analysis.

Variable	Gastritis Drug Self-Medication Behavior				p-value
	Appropriate		Incorrect		
	Frequency	%	Frequency	%	
<b>Knowledge</b>					<b>0.015</b>
Good	53	88.33	27	67.5	
Enough	6	10	13	32.5	
Not enough	1	1.67	0	0	
Total	60	100	40	100	
<b>Attitude</b>					<b>0.000</b>
Positive	53	88.33	3	7.5	
Negative	7	11.67	37	92.5	
Total	60	100	40	100	

TABLE 4: Chi-square test analysis.

asymp. Sig (2-sided)	value	Information
0.000	0.05	There is a relationship

## 4. DISCUSSION

In Table 1 above, it can be explained that the majority of respondents are of childbearing age in Beru Village in the peak reproductive range (21-35 years) as much as (64%). In line with research [21] in Tambaksari District, Surabaya City where the age of 20 years and over is the peak period of female reproduction and as many as 99% and 1% are under 20 years and have good knowledge of 78%. Furthermore, the level of education is an important factor that affects the knowledge of respondents of childbearing age. The majority of educational history has a dominance of a person's level of knowledge based on the length of opportunity for a person to gain knowledge [22]. In this study, the majority of respondents graduated from high school/equivalent (60%), due to the geographical location of the village which is very far from the location of the college, so this can affect the mother's willingness to go to college [19]. This is in line with research [23] in Tambaksari District, Surabaya City Family planning respondents have good knowledge and can succeed in preventing pregnancy with the most respondents being high school graduates/equivalent as many as 47 respondents (47%).

Furthermore, demographic factors that can affect the level of knowledge are the type of work a person in this study (46%) of respondents of childbearing age have a job as a housewife. The results of this study are in line with research [20] at the pharmacy in Malang most occupations are housewives, as many as 68 acceptors (64.15%). Occupational factors directly or indirectly also affect the selection and decision on the choice of contraception, acceptors who have jobs as housewives have more free time to use contraceptive pills consistently every day than acceptors who work. In contrast, according to [24] the more a person meets the social environment in his/her work scope, the more the possibility of specific exposures, which then the degree of exposure can affect obtaining certain information.

Table 2 shows that the knowledge of the respondents in this study is in the sufficient category (41%). Education is an important factor that also affects knowledge. Education itself can be defined as a person's efforts to develop themselves either from the school itself or from outside and lasts a lifetime. The majority of knowledge in a formal or official way greatly affects a person. It is hoped that the higher the level of education achieved, the wider the knowledge gained [25]. The results of this study are in line

with Iftikhar et al (2015) [21] in *King Abdulaziz University Hospital* that mothers with S2/equivalent graduates have better knowledge than mothers who cannot read and write ( $p = 0.002$ ) and those who have completed at least basic education ( $p = 0.001$ ) [21]. In line with Wulandari's research (2015) [22] at Sibela Mojosongo Health Center the level of knowledge in the medium category is 35 people (48%). Education affects a person's knowledge about existing contraceptives, in choosing contraceptives a person will also be more careful and also someone is able to know about the side effects of each contraceptive. But that is not the basis of someone knowing or not knowing outside information [23]. Furthermore, it was found that the percentage of respondents who were obedient in using the birth control pill was 79% and as many as 21% of the respondents were classified as non-compliant in using the birth control pill. These results indicate that the majority of women of childbearing age are obedient in using birth control pills. This study is not in line with research [25] at the Modayag Health Center which showed that there were 24 non-adherent patients compared to 20 obedient patients. However, this study is in line with research [26] which showed that most of the acceptors of KB pills 62.2% (28 people) were obedient in consuming the pill.

Based on table 3 from the results of cross tabulation analysis (crosstabs) it was found that out of 40 respondents with good knowledge, all 40 respondents were classified as obedient in the use of birth control pills. As for the 41 respondents with sufficient knowledge, there are as many as 6 respondents who are classified as non-compliant in the use of birth control pills, while the other 36 respondents are classified as obedient in the use of birth control pills. Of the 17 respondents with poor knowledge, there are 4 respondents who are classified as non-compliant in the use of birth control pills, while 13 respondents are classified as obedient in the use of birth control pills. Of the 2 respondents with poor knowledge, 2 respondents were classified as non-adherent to the birth control pill. From these results, it can be seen that the better the knowledge, the more obedient in consuming birth control pills.

Table 4 shows the Chi-Square Test to determine the relationship between knowledge of adherence to the use of birth control pills. It is proven from the  $p$  value of this study  $0.000 < 0.05$ , it can be seen that the  $p$  value  $< (0.05)$  so it has a significant relationship or influence [27]. This is in line with Notoadmodjo's theory that according to Lawrence Green's theory, knowledge is appropriate and can affect compliance. This result is also corroborated by research conducted by [22] at Sibela Mojosongo Health Center It was also found that the value of  $= 0.05$  was accepted, meaning that there was a relationship between the level of knowledge of family planning acceptors about combined oral pills with adherence to taking pills at the Sibela Health Center. In addition,

also in the research conducted [25] at the Modayag Health Center the research was conducted with 44 mothers who visited the Modayag Health Center. Based on the results of research from 44 respondents who were tested using chi-square analysis, the value of  $p = 0.001$  was obtained. This value proves that there is a relationship between maternal knowledge and maternal compliance with taking birth control pills [25]. In line with these two studies, the results of statistical analysis with the spearman test obtained the value of  $r = 0.553$  with Sig. (2-tailed) of 0.002 or less than 0.05, thus there is a relationship between knowledge of family planning acceptors and adherence to taking birth control pills at the Pekauman Public Health Center in Banjarmasin [28].

Good knowledge has not been able to make a person said to be obedient in taking birth control pills. Contrary to this research, according to the results of research conducted by Katharina and Pebrianti's at the Private Practice Midwife Titin widyaningsih Pontianak showed the chi-square test result of 3.01 greater than 0.05 that there is no relationship between knowledge of Pill acceptors and adherence to taking birth control pills. According to him, someone will tend to underestimate a habit when knowledge about the habit is not well understood, causing awareness of the importance of the habit to decrease [8].

Knowledge of each individual has a different level. This level is influenced by educational factors, information capture and also experience gained from events in their past to solve problems where someone is forced to do analysis. Knowledge has a relationship with a person's adherence to taking birth control pills where he is aware of the importance of taking pills consistently. This is in accordance with the theory put forward by Lawrence and Green which states that someone with a high level of knowledge has the ability to absorb higher information so that they can understand the concept of health science and are able to change their behavior for the better than those who have low knowledge [29].

## References

- [1] Kementerian Kesehatan RI, *Pedoman Konseling Menggunakan Lembar Balik Alat Bantu Pengambilan Keputusan Ber-KB*. Direktorat Kesehatan Keluarga, Kementerian Kesehatan Republik Indonesia, Jakarta, 2020.
- [2] Kementerian Kesehatan RI, "Pentingnya Penggunaan Alat Kontrasepsi."
- [3] C. Wahyuni and S. Maheasy, "Analysis of Attitudes of Couples of Childbearing Age About Reproductive Health Against Pregnancy Delay in Blabak Village, Pesantren District, Kediri City.," *Strada Scientific Journal of Health*. vol. 6, no. 2, pp. 59–62,

2017.

- [4] D. Shoupe, *Contraceptive Overview.*, 2007.
- [5] Badan Pusat Statistik, “Jumlah Pasangan Usia Subur dan Peserta KB Aktif Menurut Kabupaten/Kota di Provinsi Jawa Timur, 2019.”
- [6] BPS, “Kecamatan Wlingi Dalam Angka 2018,” (2018).
- [7] A. Gast and T. Mathes, “Medication Adherence Influencing Factors - An (updated) overview of systematic reviews. *Systematic Reviews.*,” vol. 8, no. 1, pp. 1–17, 2019.
- [8] T. Katharina and D. Pebrianto, “The Relationship Between Knowledge of Pill Acceptors and Compliance with Taking Birth Control Pills in Private Practice Midwives Titin Widyaningsih Pontianak.”, *Midwifery.* vol. 10, no. 1, pp. 1–20, 2020.
- [9] C. Liddelow, B. Mullan, and M. Boyes, “Adherence to the oral contraceptive pill: the roles of health literacy and knowledge.”, *Health Psychology and Behavioral Medicine.* vol. 8, no. 1, pp. 587–600, 2020.
- [10] WHO, “World Health Statistics 2015.”, *World Health Organization.* p. 2015.
- [11] B.R. Afrida, “Differences in Infant Birth Weight With The Level of Education of Pregnant Women.”, *Forilkesuit Scientific Journal.* vol. 1, no. 2, pp. 3–10, 2019.
- [12] L. Barokah and F.I. Melani, “Pengetahuan Wanita Usia Subur Tentang Kontrasepsi Pil.”, *Jurnal Ilmiah Kesehatan Sandi Husada.* vol. 12, no. 2, pp. 1037–1043, 2020.
- [13] M. Karundeng, “Hubungan Penggunaan Kontrasepsi Pil Kb Kombinasi Dengan Perubahan Siklus Menstruasi Di Puskesmas Sonder Kecamatan Sonder Kabupaten Minahasa.”, *Jurnal Keperawatan.* vol. 7, no. 1, p. 2019.
- [14] H. Windayanti, E. Adimayanti, and D. Siyamti, “Edukasi Kesehatan Reproduksi Untuk Remaja Putri Dalam Menjalani Siklus Haid Yang Sehat dan Nyaman.”, *Indonesian Journal of Community Empowerment (IJCE).* p. 2, 2020.
- [15] F.A. Huda, J.B. Casterline, F. Ahmmed, et al., “Contraceptive method attributes and married women’s intention to use the pill or the injectable in rural Bangladesh.”, *International Perspectives on Sexual and Reproductive Health.* vol. 44, no. 4, pp. 157–165, 2019.
- [16] D. Susilowati, *Nursing Print Teaching Materials Module: Health Promotion.* Jakarta: Health Human Resources Center - Ministry of Health of the Republic of Indonesia, 2016.
- [17] Sugiyono, *Metode Penelitian Pendidikan (Pendidikan Kuantitatif, Kualitatif dan R&D).*, Bandung: Alfabeta., 2018.
- [18] Prof. Dr. Soekidjo Notoatmodjo, *Metode Penelitian Kesehatan.* Rineka Cipta, Jakarta, 2018.

- [19] E. Widyawati and Darmining, "The Relationship between the Education Level of Postpartum Mothers and the Implementation of Postpartum Control at BPM Mintiani, Semen Village, Gamdusari District, Blitar Regency. Midwifery Scientific Articles of Meika Wiyata Kediri.," pp. 60–69, 2019.
- [20] A.L. Hariadini, A.I. Wijayati, R.H. Pramestutie, and R.K. Illahi, "Description of Side Effects and Revisit Rates of Oral Contraceptive Acceptors to Health Workers (Preliminary Study for The Manufacture of Counseling Aids in The Form of a Computer Application 'Success with Family Planning' at a pharmacy in Malang City).," *Pharmaceutical Journal Of Indonesia*. vol. 2, no. 1, pp. 17–23, 2017.
- [21] R. Iftikhar, B. Abdulrahman, and A.A. Khail, "Knowledge About Missed Contraceptive Pills Among Married Women at King Abdulaziz University Hospital. Patient Preference and Adherence.," *Journal of Dovepess Jeedah*. vol. 2015, no. 9, pp. 401–411, 2015.
- [22] W.T. Wulandari, "The Relationship Between The Knowledge Level of Family Planning Acceptors About Combined Oral Contraceptive Pills and Adherence to Taking Pills at The Sibela Mojosongo Health Center.,"
- [23] R. Mangeto, "An Overview of Knowledge of the Attitudes and Actions of Family Planning Acceptors towards Tubectomy Actions at the Kassi-Kassi Public Health Center Makassar in 2019.," *Journal of Pharmacy Sandi Karsa*. pp. 64–71, 2021.
- [24] R. Azhari, *Faktor-Faktor Yang Mempengaruhi Tingkat Pengetahuan Pasien Rawat Jalan Terhadap Penyimpanan Sediaan Setengah Padat Di Rumah. Program Studi Farmasi Universitas Muhammadiyah Malang*, Malang, 2020.
- [25] C. Sanding, L. Pondaag, and R. Kundre, "Hubungan Pengetahuan Ibu Dengan Kepatuhan Minum Pil Kb Di Puskesmas Modayag Kecamatan Modayag Kabupaten Bolaang Mongondow Timur.," *Jurnal Keperawatan UNSRAT*. vol. 2, no. 2, p. 106313, 2014.
- [26] I. Ermawati, "Hubungan Antara Tingkat Kepatuhan dengan Keberhasilan Akseptor KB Pil.," *Sain Med*. vol. 5, no. 2, pp. 47–51, 2013.
- [27] Azwar S, *Sikap Manusia: Teori dan Pengukurannya. Pustaka Pelajar*, Yogyakarta, 2013.
- [28] K. Napisah, "Hubungan Pengetahuan Akseptor KB dengan Kepatuhan Minum Pil KB di Puskesmas Pekauman Banjarmasin," (2016).
- [29] Prof. Dr. S. Notoatmodjo, *Health Research Methods. Rineka Cipta. Thing*, Yogyakarta, 2018.