



# Characteristics of the Menstrual Cycle After Using One Month Hormonal Contraceptives Injection: Systematic Review

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**Abstract.** Menstrual cycles changes after using injection contraceptive can be caused by hormonal imbalances. This hormonal imbalance causes the endometrium to undergo changes, making the uterine lining thin and unsuitable for a place to grow the product of conception. If this condition continues, it will increase the risk of endometrial cancer. From the preliminary survey that was conducted, it was found that 1 month injection family planning acceptors experienced regular menstrual cycles on average and 3 months injection family planning acceptors experienced menstrual cycles mostly experiencing irregular menstrual cycles. The purpose of this study was to describe the characteristics of the mother, the menstrual cycle of 1 month injection family planning acceptors and 3 months injection contraceptive acceptors. This study uses a type of literature study research using several selected sources based on the criteria set by the researcher. The total number of selected literature is 10 articles. There were six articles discussing the characteristics of the mother and 10 articles discussing the menstrual cycle. In the description of the characteristics of the mothers who accept injection contraceptive for 1 month and 3 months, the average age is 21–35 years, education is generally high school, the work is generally housewives or not working. Menstrual cycles generally experience irregular menstrual cycles, however in 1 month injection contraception there are three articles that experience regular menstrual cycles while 3 month injection contraceptive has 1 article.

**Keywords:** Characteristics of Menstrual Cycle · one month hormonal injection

## 1 Introduction

Family planning is an effort to increase community awareness and participation through gestational maturity (PUP), birth control, fostering the welfare of small, happy and prosperous families [1]. According to WHO (World Health Organization) family planning is an action that helps individuals or husband-wife couples to adjust the distance between births, determine the number of children in a family, control the time of birth in relation to the age of husband and wife, avoid unwanted births. And get the birth that you want. This is done to get a prosperous family [2].

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One of the objectives of the family planning program is to reduce the mortality rate for mothers, babies and children, in building quality small families. The medical method used to achieve the goals of the family planning program is contraception. Contraceptives that use the hormones estrogen and progesterone are called hormonal contraceptives. Hormonal contraceptives types of injections in Indonesia is widely used because it has keuntungan ie practical use and tidak required in the examination. There are two types of injection contraceptives that are often used, namely the 1-month injection and the 3-month injection. 3 month injection contraceptive is a method of contraception that is given by injection intramuscularly [3].

The most common disadvantage of injectable contraception is changes in the menstrual cycle. Changes in the menstrual cycle such as the absence of menstruation in women who usually have menstruation (amenorrhea), irregular menstruation (oligomenorrhea), menstrual bleeding that is longer and more than usual (menorrhagia). Menstruation is a periodic and physiological condition in the form of secretions, which consist of blood and mucosal tissue from the uterus through the vagina. This process is under the control of hormones, especially estrogen and progesterone, and normally repeats itself [1]. Changed menstrual cycle at injection KB acceptors is caused by hormonal imbalance. This hormonal imbalance causes the endometrium to undergo changes, making the uterine lining thin and unsuitable for a place to grow the product of conception. If this condition continues, it will increase the risk of endometrial cancer [4].

Based on the results of a preliminary survey conducted by researchers with direct interviews with injection family planning acceptors at the Putri Ayu Community Health Center, Jambi City, February 17, 2020, 10 injection family planning acceptors were used for more than 1 year. There are 5 acceptors for 1-month injection of family planning, 1 mother experiences menstrual cycles every 2 months because before using 1-month injection contraception, her menstrual cycle is once every 6 months, while 4 other mothers have regular menstrual cycles, with menstrual cycles between 28 and 30 days. There are 5 acceptors for 3-month injection of family planning, 1 woman with a regular menstrual cycle, which is every 28–30 days. Two mothers only experienced spots every 2 months while 2 other mothers did not experience menstruation while using 3-month injection contraception [12]. The aim of this study was to determine the characteristics of the mother, the menstrual cycle of 1-month injection family planning acceptors and 3-month injection family planning acceptors.

## 2 Method

This study uses a type of literature study research. Literature study is a series of activities used to collect data or sources related to the topics raised in a study. The articles obtained in this literature study were obtained through searches on Google Scholar and Pubmed with the total number of selected literature being 10 articles, using the keywords “mother characteristics, menstrual cycle, KB acceptors 1 month and 3 months injection”, with the criteria of the article. The time span of publication of articles is a maximum of 5 years (2015–2020), articles contain keywords that are the same as the research topic, articles are available in full text, articles are written in Indonesian or English. The search was conducted from 18 May 2020 to 27 June 2020.

The findings obtained through Pubmed were 9 articles and Google scholar as many as 6048 articles, then 116 articles were obtained after the duplicated articles were removed, then we screened 116 articles and obtained 10 articles to be analyzed. The ten articles include, the first article Description of the Menstrual Cycle in Women of Fertile Age with Injectable Family Planning acceptors [5], the second article The relationship between the use of injectable contraceptives and changes in the menstrual cycle of family planning acceptors in Nurjaimah Clinic, Gebang District, Langkat Regency in 2016 [6], the third article Differences of Menstrual Cycle I, Cyclofem Injectable Contraceptive User with Medroxy Progesterone Acetate Depo in the Work Area of North Bontang 1 Community Health Center [7], fourth article Correlation use of Injectable Contraceptive Types with Menstruation Pattern Changes in Contraception Acceptor, fifth article The Relationship between Use of Injectable Contraceptive Devices and Drugs with Menstrual Disorders at the Nirmala Clinic [8], the sixth article of Factors affecting Discontinuation of the Once-a-month Injectable Contraceptive (Cyclofem) in Neyshabur, Iran, seventh article Relationship between 1 month and 3 months of injection contraceptive use with Haid pattern disorders in Gulai Bancah Puskesmas, Mandiangin Koto Selayan, Bukit Tinggi District [13], eighth article Experience with Combined Injectable Contraceptive (Norigynon) in Port Harcourt [15], ninth article Progestogen only Injectable Contraceptive: Acceptor Prevalence and Client Experience at Sagamu, Nigeria and the tenth article of the Rev. of Contraception with Depot Medroxy Progesterone Acetate at the University of Port Harcourt Teaching Hospital, Port Harcourt, Southern Nigeria.

### 3 Result and Discussion

#### Result

Article first description menstrual cycle in women of fertile age with Acceptor KB Injectable RESULTS Age umumnya aged 20–35 years 1 month injectables were 28 people (87.5%) and KB injecting 3 months 26 people (81.3%), education acceptor 1 month injections are most junior of 15 respondents (46.9%) while the 3-month injections acceptor, namely SMA 17 respondents (53.1%), pekerjaan generally do not work. Based on the menstrual cycle, most of the respondents who used 1-month and 3-month injection contraceptives experienced abnormal menstrual cycles, 19 people (59.4%) had 1-month injection contraception, and 32 respondents (100.0%) [5].

The second article Relations with the use of injectable contraceptive menstrual cycle changes in family planning acceptors in Gebang subdistrict Nurjaimah Clinic Langkat 2016 showed karakteristik respondents injections and injections 1 Month 3 Months, age of majority > 30 years as many as 21 people (52.5%), majoring in high school education as many as 16 people (40.0%), and the majority of occupations as many as 16 people (40.0%). The 3-month injection of contraceptive (Progesterone), in the majority there were no changes in the menstrual cycle as many as 15 people (60.0%) and in the minority there were changes in the menstrual cycle by 10 people (40.0%). While 15 mothers of 1 month injection family planning acceptors (Progesterone and estrogen) were 11 people (73.3%) there were changes in the menstrual cycle and in the minority there were no changes in the menstrual cycle as many as 4 people (26.7%) [6].

The third article *Differences Menstrual Cycle Capital Injectable Contraceptive Users Cyclofem with Medroxy Depo Progesterone Acetate in Puskesmas North Bontang* 1 showed karakteristik Capital injections *Cyclofem* with *Depo Medroxy Progesterone Acetate* showed the age of 20–35 years as many as 44 respondents (68.8%) Most of them have high school education, as many as 40 respondents (62.5%), the majority of mothers' occupation is IRT, which is 51 respondents (79.7%). The picture of the menstrual cycle *cyclofem* experienced irregular menstrual cycles as many as 9 respondents (28.1%) and regular as many as 23 respondents (71.9%). Menstrual cycle overview DMPA experienced irregular menstrual cycles as many as 27 respondents (84.4%) and regular as many as 5 respondents (15.6%) [7].

The fourth article *Correlation use of Injectable Contraceptive Types with Menstruation Pattern Changes in Contraception Acceptor* is obtained k fig karakteristik acceptor CICs 1 bulan and 3 months generally ber age > 35 years, that is 69 people (50.4%). P Education is a high school / equivalent ie 57 persons (41.6%). The average acceptor occupation is as a housewife as many as 131 people (95.6%), almost all DMPA injection acceptor respondents experienced changes in abnormal menstrual patterns, in the form of cycles, length or the amount of blood that came out as many as 84 respondents (85.7%), and the majority of respondents who did not experience changes in menstrual patterns were 25 respondents (64.1%) [8].

The fifth article, the *Relationship between the Use of Injectable Contraceptive Devices and Drugs with Menstrual Disorders at the Nirmala Clinic*, showed that 50 cases of injection contraceptive or spotting experienced 50 cases (100%) while mothers who used 3-month injection contraception who experienced amenorrhea were 23 cases (65.71%) and those who experienced spotting were 12 cases (34.29%) [9].

The sixth article *Factors affecting discontinuation of the Once-a-month Injectable Contraceptive (Cyclofem) in Neyshabur, Iran* showed karakteristik demographic umur most are 20–30 years old, 127 (64.1%), education is the most widely *Secondary education* / Junior as many as 89 (44.9%), the most occupations were IRT as many as 174 (87.9%) [10].

The seventh article *The relationship between 1 month and 3 months of injection contraceptive use with Menstrual Pattern Disorders in Gulai Bancah Public Health Center, Mandiangin Koto Selayan Bukit Tinggi District*, showed that 10 respondents (32.3%) experienced 1-month injection contraceptives (32.3%) of the 31 respondents while the acceptors The 3-month injection family planning who experienced menstrual pattern disorders were 22 respondents (59.5%) from 37 respondents [11].

The eighth article *Experience with Combined Injectable Contraceptive (Norigynon) in Port Harcourt* found a much lower complication rate with combined injection contraceptives [12].

The ninth article *Progestogen only Injectable Contraceptive: Acceptor Prevalence and Client Experience at Sagamu, Nigeria* shows the socio-demographic characteristics, the average age of the acceptors is 30–39 years, as many as 90 respondents (55.6%), education level is generally secondary education as many as 84 respondents (51.9%), the most occupation was trading as many as 60 respondents (37.0%). Socio-demographic characteristics, the average age of the acceptors was 30–39 years as many as 90 respondents (55.6%), parity 3–4 were 82 respondents (50.6%), religion is generally Christian

as many as 133 respondents (82.1%), Education level is generally secondary level education as many as 84 respondents (51.9%), the most occupation is trade as many as 60 respondents (37.0%), the most ethnic group is Yoruba as many as 120 respondents (74.1%) [13].

The tenth article of the *Review of Contraception with Depot Medroxy Progesterone Acetate at the University of Port Harcourt Teaching Hospital, Port Harcourt, Southern Nigeria* found that secondary amenorrhoea remains the most common side effect in 503 (74.3%) women [14].

## Discussion

### Age Description of 1 month and 3 month injection family planning acceptors

In an assessment of six articles that discuss the characteristics of mothers, there were five articles discussing the age of 1 month injection family planning acceptors, it was found that the age range that most used 1 month injection family planning acceptors was 21–35 years, namely three articles, while the next two articles were on number 2 and 4 were found to be > 30 years and > 35 years. An assessment of the articles that discusses the characteristics of the 3 month injection family planning acceptors, from the five articles, it was found that the age range that most used 3 month injection family planning acceptors was 20–35 years, namely 2 articles, the next three articles, it was found that the age of family planning acceptors injection 3 months, namely > 30 years, > 35 years and between 30 and 39 years.

The age at most for 1 month injection family planning acceptors and 3 month injection family planning acceptors was 20–35 years, there was no difference in age in choosing to become 1 month injection KB acceptor or 3 month injection KB acceptor. Age affects the choice of injection family planning, according to Suratun in Murniasih saying that women aged 20–49 years are couples of productive age and actively engage in sexual relations to get offspring [5]. The use of family planning that is suitable at this age is recommended to use contraceptives that have high reversibility, namely injection contraception. Age is an important factor in choosing a contraceptive, however, there are some women who choose not to use contraceptives at that age in order to get offspring again after a long delay of pregnancy [10].

### Education Overview of 1 month and 3 month injection family planning acceptors

An assessment of the six articles found five articles discussing the education of 1 month injection family planning acceptors. The average education for 1 month injection family planning acceptors is SMA, which is three articles, while two articles show that the average education is junior high school. An assessment of six articles that discussed maternal characteristics found five articles discussing education for 3-month injection family planning acceptors. The five articles found that generally the last education for 3 months injection family planning acceptors was high school or high school.

The average education for 1 month injection family planning acceptors and 3 month injection family planning acceptors is SMA, there is no difference in education in choosing to become 1 month injection family planning acceptor or 3 month injection family planning acceptor. Pratiwi in Murniasih said that the level of education and level of

knowledge are directly proportional. The low level of education is one of the factors that prevented respondents from knowing about the side effects caused by the contraceptives they use [5]. However, low education does not necessarily mean that knowledge is lacking, because currently health education regarding routine contraceptives is carried out by the Puskesmas and health personnel, so that the knowledge possessed by family planning acceptors will continue to increase [11].

### **Job description of 1 month and 3 month injection family planning acceptors**

Work is a daily activity for someone who works for another person or agency to earn income or wages in the form of goods or money. In this study, the mother is to meet the needs of family life [12]. There were five articles discussing occupations of 1 month injection family planning acceptors, the average occupation of 1 month injection family planning acceptors was housewives or did not work. In an assessment of six articles discussing the characteristics of mothers, there were five articles about the work of 3 months injection family planning acceptors, generally as many as four articles, it was found that the 3 months injection family planning acceptors were housewives or not working. One subsequent article found that the acceptor's average occupation was trading [13]. The average occupation of acceptors for 1-month injection and 3-month injection contraception is housewives, there is no difference in occupation in choosing to become acceptors for 1-month injection and 3-month injection KB acceptors. The choice of contraception can be influenced by a person's income level. Injectable contraceptives are usually chosen by respondents who do not work, because the price is relatively cheaper [5].

### **Overview of the menstrual cycle of 1 month injection family planning acceptors**

1-month injection of contraception is a contraceptive that is given every month by injection intramuscularly in the form of progesterone and estrogen hormones in women of childbearing age as an effort to prevent pregnancy. The combination injection consists of 25 mg of *Depo Medroxyprogesterone Acetate* and 5 mg *Estradiol Sipionate* [14]. In an assessment of 10 articles, there were eight articles discussing the menstrual cycle in 1 month of routine family planning acceptors, from five articles, it was found that most of the 1 month injection family planning acceptors experienced irregular menstrual cycles and experienced changes, this usually occurs at the beginning. Use that causes slight bleeding but usually the bleeding only lasts 1 to 3 months and will go away on its own [15].

However, there are three other articles which state that the menstrual cycle of 1 month injection family planning acceptors is generally regular. This can occur because at this time injection of 1 month birth control which contains the hormones estrogen and progesterone, this injection is usually done every month and has been planned so that its use still gets menstruation every month. A normal menstrual cycle can also occur as a result of sufficient production of the hormone estrogen [15, 16].

### **Overview of the 3-month injection contraceptive acceptors menstrual cycle**

The results of the study of 10 articles found eight articles discussing the menstrual cycle for 3-month injection family planning acceptors, it is known that generally, as many

as seven, it was found that 3-month injection family planning acceptors experienced irregular menstrual cycles. The pathophysiology of menstrual pattern disorders in the form of cycles, length and the amount of blood that comes out at 3 months injection family planning acceptors is still unclear, but it is suspected that an imbalance of estrogen and progesterone at the previous level is because these two hormones are responsible for changes in the endometrium for normal menstrual processes [15].

However, there is one article that is known that the 3-month injection family planning acceptors experience regular menstrual cycles, namely the article entitled “The relationship between injection contraceptive use and changes in menstrual cycles in family planning acceptors at Nurjaimah Clinic, Gebang District, Langkat Regency” in 2016, quantitative descriptive research. With the correlation research method to see the relationship between injection contraceptive use on the menstrual cycle, the total sample was 40 respondents. This can occur as a result of the effect of the work of the estrogen hormone that is owned by each individual. If the production of the hormone estrogen is sufficient, the menstrual cycle in individuals will be regular [16].

## 4 Conclusion

After the results of the literature study are described in full, the researchers can draw a conclusion from the characteristics of the mother of 1 month injection family planning acceptors and 3 month injection family planning acceptors. Analysis of six articles discussing the characteristics of 1 month and 3 month injection family planning acceptors, it was found that the most age ranges for 1 month injection family planning acceptors and 3 month injection family planning acceptors were 20–35 years, the average education of injection contraceptive acceptors 1 month and the acceptor for the 3-month injection of family planning is SMA, the occupation of the acceptor for the 1-month injection of contraception and the 3-month injection for family planning is a housewife or not working.

Analysis of eight articles that discuss the menstrual cycle for 1 month injection family planning acceptors, generally as many as five articles, it was found that 1 month injection family planning acceptors experienced irregular menstrual cycles and experienced changes while the other three articles found that 1 month injection contraceptive acceptors menstrual cycle. Generally regular whereas for 3 month injection family planning acceptors, it is known that the majority, namely seven articles, found that 3 months injection family planning acceptors experienced irregular menstrual cycles, but there is one journal that shows that 3 months injection family planning acceptors do not experience changes in menstrual cycles.

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