



## Overview of Side Effects of Hormonal and Non-Hormonal Contraceptive Use Among Acceptors at Independent Midwife Practice (IMP) Iis Hilda Zicria

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### ABSTRACT

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Contraception is an essential method for pregnancy regulation and family planning; however, its use may cause side effects that affect user comfort and adherence. This study aimed to describe the side effects of contraceptive use among family planning acceptors at Independent Midwife Practice (IMP) of Iis Hilda Zicria. A quantitative descriptive study with a cross-sectional design was conducted from April 15 to May 8, 2025, involving 40 respondents. The results showed that 62.5% of respondents used hormonal contraceptives, predominantly injectable methods (40%), followed by oral pills (12.5%) and implants (10%). Meanwhile, 37.5% used non-hormonal contraceptives, including condoms (27.5%) and intrauterine devices (10%). Among hormonal contraceptive users, the most frequently reported side effects were weight changes (84%) and menstrual disturbances (76%). In contrast, non-hormonal contraceptive users most commonly reported changes in libido (60%), while abnormal vaginal discharge was reported only among IUD users (26.67%). Overall, non-hormonal contraceptive users experienced fewer and milder side effects compared to those using hormonal contraceptives. Healthcare providers are expected to enhance education and counseling for prospective family planning acceptors regarding the various side effects that may occur as a result of using both hormonal and non-hormonal contraceptives.

### INTRODUCTION

Family Planning (FP) is one of the priority programs of the Indonesian government aimed at controlling population growth and improving the quality of life of the community.<sup>1</sup> The FP program in Indonesia includes various contraceptive methods, both hormonal and non-hormonal. Hormonal contraceptives, such as pills, injections, implants, and others, work by influencing the body's hormonal balance to prevent ovulation. Meanwhile, non-hormonal contraceptives, such as intrauterine devices (IUDs), condoms, and other methods, do not alter hormonal balance but remain effective in preventing pregnancy.<sup>2</sup>

The use of contraceptives may still cause side effects, which often hinder the continuity of their use. Various side effects, such as changes in the menstrual cycle, weight gain, emotional disturbances,





or decreased libido, often make acceptors feel uncomfortable and eventually discontinue the use of contraceptives.<sup>3</sup>

Side effects of contraceptive use arise as the body's response to the mechanism of action of each family planning method. In hormonal contraception, synthetic hormones introduced into the body work by inhibiting ovulation, altering cervical mucus, and affecting the endometrial lining. These changes in hormonal balance may influence metabolic processes, the menstrual cycle, and psychological conditions, leading to side effects such as weight changes, menstrual disturbances, mood changes, and other physical complaints. Meanwhile, non-hormonal contraceptives function without the involvement of hormones, for example by creating physical barriers or inducing local reactions within the uterus. These processes may cause irritation or local changes in the reproductive organs, contributing to complaints such as changes in libido, vaginal discharge, or bleeding. Thus, side effects are part of the body's adaptation process to the contraceptive method used and may vary among individuals.<sup>3</sup>

Data from the National Population and Family Planning Board indicate that although the rate of contraceptive participation is relatively high, many acceptors still report side effects resulting from hormonal contraceptive use. Approximately 20% of hormonal contraceptive acceptors report experiencing health disturbances such as menstrual changes, weight gain, and mood or emotional changes. Although non-hormonal methods tend to cause fewer side effects, they may still lead to issues such as infections or pelvic pain.<sup>4</sup>

The World Health Organization (WHO) notes that the side effects of hormonal contraceptives may vary depending on the type of contraceptive, age, general health condition, and lifestyle of each acceptor. Several previous studies have shown that the use of hormonal contraceptives, such as oral pills, injectable contraceptives, and implants, can cause various side effects. According to a study conducted by Isharyanti (2020), commonly reported side effects among hormonal contraceptive acceptors include weight changes, mood disturbances, breast tenderness, and menstrual irregularities. This finding is consistent with Kusumawati (2020), who stated that the use of hormonal contraceptives may increase the risk of psychological disorders, including mild to severe depression among some women.

If contraceptive side effects arise and are not properly managed, they may affect physical health, psychological well-being, and the continuity of family planning use in the future. Physically, prolonged side effects can lead to discomfort, persistent menstrual disturbances, or weight changes that negatively impact overall health. Psychologically, complaints such as mood changes or decreased libido may affect quality of life and relationship harmony. Moreover, experienced side effects may reduce acceptors' adherence to and trust in the contraceptive method used, potentially leading to early discontinuation or the selection of less appropriate methods. Therefore, early detection and appropriate management of side effects are essential to prevent long-term consequences and to ensure the success of family planning programs.

Based on the 2023 Indonesian Health Survey conducted in Bali, the prevalence of contraceptive use among women of reproductive age reached approximately 60%. The data also indicate that hormonal contraceptive methods, such as pills and injections, dominate the choices among women of reproductive age.<sup>5</sup> Although this shows a relatively good participation rate, the discontinuation rate of contraceptive use especially hormonal methods remains high. This decline is often caused by untreated side effects, such as irregular menstruation, weight changes, and emotional disturbances. Studies conducted in other regions also show similar findings, where side effects of hormonal contraceptives are a major reason for acceptors to switch or discontinue their contraceptive methods.<sup>5</sup>

IMP Iis Hilda Zicria was selected as the research site because it has a large number of contraceptive acceptors and is one of the health facilities actively providing contraceptive services. Additionally, this clinic offers various FP methods, making it possible to obtain a broader picture of the



side effects of hormonal and non-hormonal contraceptive use among acceptors. Based on a preliminary study conducted at IMP Iis Hilda Zicria involving 30 contraceptive acceptors, results showed that side effects were more commonly experienced by hormonal contraceptive users compared to non-hormonal users. Among hormonal contraceptive acceptors, the most frequently reported complaints were menstrual disturbances (40%) and weight gain (30%). Meanwhile, among non-hormonal contraceptive acceptors, common complaints included abdominal pain or cramping after IUD insertion (35%), increased menstrual bleeding (25%), and infection or vaginal discharge (15%).

The researcher's interest in this topic stems from the high prevalence of contraceptive use in the community, which is not always accompanied by adequate understanding of the potential side effects. In healthcare practice, family planning acceptors are still found to experience complaints following contraceptive use without receiving optimal education and management. This condition may affect comfort, adherence, and the continuity of family planning use. Therefore, this study was conducted to obtain a clearer description of the side effects of hormonal and non-hormonal contraceptives, with the expectation that the findings can serve as a basis for improving the quality of counseling, family planning services, and more informed decision-making among acceptors.

## METHOD

This study is a quantitative descriptive research with a cross-sectional approach. Descriptive research aims to present an existing phenomenon by systematically and accurately describing data without providing any intervention or specific treatment to the research subjects.<sup>6</sup> This study was conducted to describe the side effects of hormonal and non-hormonal contraceptive use among family planning acceptors at IMP Iis Hilda Zicria.

A cross-sectional approach was chosen because this study was carried out at a single point in time, collecting data simultaneously from respondents who met the inclusion criteria. With this approach, the researcher can obtain a clearer overview of the occurrence of side effects among contraceptive acceptors without observing changes over time.

In this study, the data collected included the types of contraceptives used by the acceptors and the side effects they experienced, such as menstrual cycle disturbances, weight changes, breast tenderness, headaches, mood disorders, and abnormal vaginal discharge.

This study was conducted at the Independent Midwife Practice (IMP) Iis Hilda Zicria, located at Marlboro Street XVII A No. 5, Pemecutan Klod, Denpasar. The research was carried out from April 15 to May 8, 2025. IMP Iis Hilda Zicria was selected as the research site because it has a relatively large number of family planning acceptors and is one of the health facilities actively providing contraceptive services. In addition, this practice offers various contraceptive methods, allowing for a broader overview of the side effects of hormonal and non-hormonal contraceptive use among acceptors.

In this study, the independent variable is the use of hormonal and non-hormonal contraceptives. The dependent variable in this study is the side effects of hormonal and non-hormonal contraceptives. Based on the calculation using the Slovin formula, the sample size used in this study was 40 participants. Sampling was carried out using purposive sampling, a sampling technique based on specific considerations. Inclusion criteria: family planning acceptors at IMP Iis Hilda Zicria; able to read and write (for questionnaire completion); willing to provide information through interviews or questionnaires. Exclusion criteria: family planning acceptors who are experiencing health problems that prevent them from participating in the research process.

The type of data collected in this study is primary data, which refers to data obtained directly from the source. In this study, the primary data were obtained through the completion of questionnaires. The instrument used in this study was a questionnaire that had been tested for validity and reliability. The questionnaire was administered directly by the researcher to the respondents and was structured in a way that made it easy for respondents to complete and answer the questions. The questionnaire in this





study consisted of 10 questions related to the side effects of contraceptive use, both hormonal and non-hormonal. The questionnaire was self-developed based on theoretical reviews and previous research, with several modifications to suit the objectives of the study.

Data were analyzed using univariate descriptive analysis with Microsoft Excel. Univariate analysis aims to describe each variable examined based on the data obtained, including age, education, sources of information, history of use, duration of use, contraceptive methods, and side effects. The data were analyzed using descriptive statistics, which were used to present the results in the form of frequency distributions and percentages (%) for each item.

Before involving respondents, the researcher submitted and obtained ethical approval from the Ethics Committee with approval number DP.04.02/F.XXXII.25/324/2025 on April 14, 2025. In this study, there are four principles that must be upheld when conducting research: respect for human dignity, respect for privacy and confidentiality, respect for justice and inclusiveness, and beneficence.

## RESULT AND DISCUSSION

Table 1. Frequency of research subject characteristics (n = 40)

Characteristics	Hormonal		Non-Hormonal		Total	
	f	%	f	%	f	%
Age						
< 20 years	0	0	0	0	0	0
20-35 years	13	32.5	9	22.5	22	55
> 35 years	12	30	6	15	18	45
Education						
Elementary School	2	5	2	5	4	10
Junior High School	5	12.5	2	5	7	17.5
Senior High School	14	35	6	15	20	50
College	4	10	5	12.5	9	22.5
Sources of Information						
Healthcare Workers	7	17.5	3	7.5	10	25
Family	5	12.5	4	10	9	22.5
Friends	10	25	5	12.5	15	37.5
Internet	3	7.5	3	7.5	6	15
History of Use						
Ever switched	13	32.5	4	10	17	42.5
Never switched	12	30	11	27.5	23	57.5
Duration of Contraceptive Use						
< 6 months	9	22.5	4	10	13	32.5
6-12 months	12	30	9	22.5	21	52.5
> 12 months	4	10	2	5	6	15

Based on Table 1, it is known that most respondents were in the age range of 20–35 years, accounting for 55%, consisting of 32.5% hormonal contraceptive acceptors and 22.5% non-hormonal acceptors. In terms of education, most respondents had completed senior high school, totaling 50%, with 35% from the hormonal contraceptive group and 15% from the non-hormonal group. Regarding sources of information about contraception, the majority of respondents received information from friends (37.5%), consisting of 25% hormonal acceptors and 12.5% non-hormonal acceptors. Most respondents had never switched contraceptive methods, totaling 57.5%, with 30% from the hormonal



group and 27.5% from the non-hormonal group. The majority of respondents had used contraception for 6–12 months (52.5%), consisting of 30% hormonal contraceptive users and 22.5% non-hormonal users.

Based on the research, the findings showed that the majority of contraceptive users were women aged 20–35 years (55%), followed by those older than 35 years (45%), with no respondents under 20 years old. This supports the study by Cahyani (2021), which states that women aged 20–35 years are the most reproductively active and most aware of pregnancy planning through contraceptive use. This age range is also categorized as the safest for pregnancy, making it the primary target of family planning programs. Monayo et al. (2020) similarly noted that women in this age range tend to have stronger motivation to space pregnancies for maternal and child health reasons.

In terms of educational background, most respondents had completed senior high school (50%) or higher education (22.5%). These findings indicate that educational level influences knowledge and attitudes regarding contraceptive use. Cahyani (2021) explained that higher education is associated with a better understanding of contraceptive benefits, mechanisms of action, and potential side effects. Wirda (2021) also found that women with medium to high educational levels tend to be more selective in choosing contraceptive methods based on health conditions as well as information obtained from healthcare workers and digital media. Furthermore, most respondents obtained contraceptive information from friends (37.5%), followed by healthcare providers (25%), family (22.5%), and the internet (15%). This highlights the significant role of social environments in decision-making related to contraceptive use. Kadir and Sembiring (2022) likewise observed that interpersonal communication, especially among peers, often serves as the initial trigger in seeking contraceptive information, although the accuracy of such information may not match that provided by healthcare professionals.

Table 2. Frequency of research subject characteristics based on contraceptive methods (n = 40)

Contraceptive Methods		Frequency	Percentage (%)
Hormonal	Injection	16	40
	Pills	5	12.5
	Implants	4	10
Non-Hormonal	IUD	4	10
	Condom	11	27.5
Total		40	100

Regarding the types of contraceptive methods used, this study revealed that 62.5% of respondents used hormonal methods, with injectable contraceptives being the most common (40%), followed by oral pills (12.5%) and implants (10%). Meanwhile, non-hormonal methods were used by 37.5% of respondents, consisting of condoms (27.5%) and IUDs (10%). These findings align with research by Nurmayani et al. (2020), which reported that injectable contraceptives are widely chosen due to their practicality, high effectiveness, and the absence of daily consumption requirements. Setyoningsih (2022) also noted that injectables are popular because they are considered more convenient and do not require invasive procedures such as IUD or implant insertion. Nonetheless, the use of non-hormonal methods such as condoms indicates growing awareness among some respondents of contraceptive options that do not interfere with hormonal balance. This is consistent with Adiesti and Wari (2020), who found that increased awareness of hormonal contraceptive side effects has encouraged some women and couples to opt for non-systemic methods such as condoms.





Table 3. Description of side effects of hormonal contraceptive (n = 40)

Side Effects	Injection		Pill		Implant		Total	
	f	%	f	%	f	%	f	%
Weight changes	14	56	4	16	3	12	21	84
Headache	5	20	2	8	1	4	8	32
Nausea	3	12	3	12	1	4	7	28
Mood changes	5	20	3	12	4	16	12	48
Breast tenderness	2	8	1	4	3	12	6	24
Menstrual disorders	13	52	3	12	3	12	19	76
Bleeding	5	20	1	4	0	0	6	24
Acne	3	12	2	8	1	4	6	24
Changes in libido	6	24	2	8	0	0	8	32
Abnormal vaginal discharge	2	8	0	0	1	4	3	12

Based on the results of the study, it was found that among the 25 hormonal contraceptive acceptors at IMP Iis Hilda Zicria, the most commonly reported side effect was weight changes, experienced by 21 respondents (84%). This side effect occurred most frequently among injectable contraceptive users, totaling 14 individuals (56%), followed by pill users (16%) and implant users (12%). The second most frequently reported side effect was menstrual disturbances, experienced by 19 respondents (76%), with the highest proportion also coming from injectable contraceptive users at 52%. This indicates that injectable contraceptives tend to cause more complaints related to menstrual cycle irregularities and weight changes compared to pills and implants.

Another commonly reported side effect was mood changes, experienced by 12 respondents (48%), predominantly among implant users (16%), followed by injectable and pill users. Headaches and changes in libido were each reported by 8 respondents (32%). Meanwhile, other side effects such as nausea or vomiting (28%), breast tenderness (24%), intermenstrual bleeding (24%), and acne (24%) were also identified, although at lower frequencies. The least reported side effect was abnormal vaginal discharge, experienced by only 3 respondents (12%), consisting of 2 injectable contraceptive users and 1 implant user.

Side effects of hormonal contraceptives occur because their mechanism of action directly alters the body's hormonal balance to prevent pregnancy. For example, injectable contraceptives such as DMPA (depot medroxyprogesterone acetate) deliver high levels of progestin continuously, which suppresses ovulation, thickens cervical mucus, and alters the endometrium, making it unfavorable for implantation. These changes prevent the body from undergoing the natural hormonal fluctuations that normally occur during the menstrual cycle, leading to menstrual disturbances such as irregular bleeding, amenorrhea, or spotting, as the endometrium does not develop and shed in a normal cyclical pattern.

Regarding weight gain, although the exact mechanism has not been fully elucidated, primary studies and literature reviews suggest several possible physiological pathways. Progestin is believed to influence appetite-regulating centers in the hypothalamus, resulting in increased appetite and caloric intake. In addition, progestin may alter carbohydrate and fat metabolism by facilitating the conversion of glucose into body fat, increasing fluid retention, and affecting blood lipid levels, all of which may contribute to fat accumulation and weight gain in some users.

Hormonal changes induced by contraceptive use may also affect other bodily responses such as mood and libido because hormones play a role in regulating neurotransmitters and central nervous system function. Consequently, disruptions in hormonal balance can influence multiple physiological processes that manifest as side effects in certain individuals.



Table 4. Description of side effects of non-hormonal contraceptive

Side Effects	IUD		Condom		Total	
	f	%	f	%	f	%
Weight changes	0	0	0	0	0	0
Headache	0	0	0	0	0	0
Nausea	0	0	0	0	0	0
Mood changes	1	6.67	0	0	1	6.67
Breast tenderness	0	0	0	0	0	0
Menstrual disorders	3	20	0	0	3	20
Bleeding	3	20	0	0	3	20
Acne	0	0	0	0	0	0
Changes in libido	3	20	6	40	9	60
Abnormal vaginal discharge	4	26.67	0	0	4	26.67

Based on the table describing the side effects reported by 15 users of non-hormonal contraceptive methods (IUD and condoms), the most commonly experienced side effect was changes in libido, reported by 9 respondents (60%), consisting of 3 IUD users (20%) and 6 condom users (40%). Another frequently reported side effect was abnormal vaginal discharge, which occurred only among IUD users, totaling 4 individuals (26.67%). Menstrual disturbances and intermenstrual bleeding were each experienced by 3 IUD users (20%).

Meanwhile, headaches, nausea or vomiting, breast tenderness, and acne were not reported by any respondents. Overall, side effects among non-hormonal contraceptive users were fewer and tended to be milder compared to those experienced by hormonal contraceptive users. Side effects among IUD users were more varied, whereas condom use was generally associated only with changes in libido.

Non-hormonal contraception generally has milder side effects compared to hormonal contraception because it does not contain synthetic hormones that can affect the body's natural hormonal balance. These methods work mechanically or naturally, so they do not interfere with the endocrine system and are less likely to cause side effects such as mood changes, weight gain, menstrual cycle disturbances, or headaches that are often associated with hormonal contraception.

## CONCLUSION

The use of hormonal and non-hormonal contraceptives shows differences in the characteristics of side effects experienced by acceptors, including both systemic and local effects. Hormonal contraceptives tend to cause physiological changes such as menstrual disturbances and weight changes, whereas non-hormonal contraceptives are more commonly associated with changes in sexual function and local complaints. These differences emphasize that no contraceptive method is entirely free from side effects; therefore, the selection of a family planning method should consider the acceptor's health condition, comfort, and readiness to cope with potential side effects. Accordingly, healthcare providers are expected to deliver comprehensive, objective, and continuous counseling regarding contraceptive options and their associated side effects, while the community particularly women of reproductive age is encouraged to be more proactive in seeking information and consulting healthcare professionals before choosing the most appropriate contraceptive method.

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