

Literature Review: Side Effect of Using Birth Control Implants

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Article Info	Abstract
Article History Submitted, 2025-11-01 Accepted, 2025-11-30 Published, 2025-12-31	The government's efforts to reduce population growth are through family planning (KB) programs. Implants are a long-term contraceptive method (MKJP) that is effective, safe, and comfortable for women. One factor that influences satisfaction with implant use is the problems or side effects that arise. The purpose of this literature review is to identify the side effects of using implant contraception. This study used a systematic review method, namely a search of both international and national literature. A total of six articles sourced from Google Scholar, Garuda, Sinta, Pubmed, Proquest, and Science Direct were reviewed according to inclusion criteria: articles that can be accessed in full text in PDF format, in Indonesian or English, articles published between 2020 and 2025. The results of the review of the six articles indicate that, in general, the side effects of the implant contraceptive method are menstrual disorders, weight changes, and discomfort. In conclusion, the most common side effects in implant users are menstrual disorders (amenorrhea, hypomenorrhea, and menorrhagia), weight changes (weight gain and loss), and physical and emotional discomfort disorders such as headaches, digestive disorders, fatigue, acne, and decreased libido. It is expected Health workers to give comprehensive informations about all side effects including disturbance bleeding menstruation and non- bleeding effects, Quick response to serious issue of the patient, and increase system search treatment (care-seeking) so that patients quick look for help when experience discomfo.
Keywords: Side effect, Contraception, Implants	

Introduction

One of effort for prevent the increase in maternal mortality in Indonesia and the world is with postpone or prevent pregnancy. Pregnancy is the period that begins from conception until birth fetus. Normal pregnancy lasts 280 days (40 weeks) or 9 months 7 days). One of them the method used by the Control Body Resident For pressing rate growth resident is through control birth. Government through the Population and Family Planning Agency (BKKBN) has implementing the Family program Planning (KB) that started since 1970 (Nuraini et al., 2021).

Total fertility rate has experience decline globally, but in developing countries decline happens very slowly because still low use modern contraception, namely only 31%. In Indonesia based on strategic plan 2020-2024 determines that prevalence method modern contraception (mCPR) targeted reach 63.41 percent in 2024 and the achievement number of modern family planning users in 2024 is 62.38%. A promoted and effective contraception program is method contraception term long (MKJP) with implants is one of the method its

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flagship. Coverage the use of contraceptive implants in Indonesia in 2024 is 6.2% (Health Development Policy Agency, 2024).

Implant is method contraception that only contains long - acting progestin length, low dose, reversible for women. Implants are one of the type contraception in the form of implants made from similar rubber silastic containing hormone, attached to the arm above. Implants can used for term 5 years long and is severisible. Advantages from effective contraception height, number implant failure, 1 per 100 women per year in 5 years first, failure users low, once installed no need there is something to remember. The implant contains levonorgestrel which is progesterone hormone (Hidayati, 2009). Priority from use contraceptive implants, namely long protection term up to 5 years), level rapid fertility re-cover after implant removal, pain, headache no needed inspection in, and not influential against estrogen, no bother activity intercourse, no interfere with breast milk (ASI), respondents only need return to clinic when there are complaints, can revoked every moment in accordance with need (Widyawaty & Kristiana, 2025).

Side effect usage contraceptive implants, namely improvement weight gain that occurs keep going continuously can cause obesity (excess weight) or obesity increase risk relatively a woman for suffering from diabetes mellitus, the risk relatively for caught disease cardiovascular for example blood high, next can increase factor risk occurrence disease heart coronary. Side effects side from contraceptive implants include disturbance cycle menstruation (8.5%) and increased body weight (3.3%), increase pressure blood (2.2%), headache (5.5%), and bleeding / disorders cycle menstruation (1.6%) (Suraiya et al., 2022).

Based on background above, method contraceptive implants are method long term which has side effect to its users so that can influence interest KB acceptors for choosing the contraceptive implant. Then the researcher want to conduct a purposeful literature review for identify side effect use of contraceptive implants.

Methods

The research method used was a literature review that explored the side effects of using contraceptive implants. The literature review is studies secondary origin from literature review studies are known in medical research. Literature review study is for identify, evaluate and interpret all available and relevant related literature with question researchers being observed the use of systematic literature reviews for summarize existing evidence about topics, identify and provide suggestions for study next (Fauzi et al., 2024).

Data collection methods used engine searching through Google Scholar, Garuda, Sinta, Pubmed, Proquest and Science Direct keywords " side effects" "Contraception", "Implant". Selected articles in accordance with inclusion and exclusion criteria. Inclusion is article in Indonesian and English, articles 2020-2025, article Full text articles in PDF format. Exclusion criteria were articles in the form of reviews and cannot be accessed in full text. The search results obtained 22 articles, then selected using the PICO method, obtained 6 articles to be reviewed. Next, the articles obtained were reviewed, systematically compiled, compared one article with another, then discussed with other literature and linked to produce appropriate results.

Results and Discussion

List of all journals that were found and described in form table:

Table 1. Jurnal Analysis Result			
No	Researchers	Research Methods	Results
1	Which contraceptive side effects matter most? Evidence from current and past users of injectables and implants in Western Kenya (Odwe et al., 2020).	Types of research descriptive observational through approach cross-sectional. Population as many as 2,600 women users contraception injections and implants. The sampling technique uses probability sampling. Data analysis using Chi-Square	1. There is a relationship between use of implants with disturbance menstruation (p=0.001) 2. There is a relationship between use of implants with increase body weight (p=0.020) 3. There is a relationship between use of implants with decreased libido (p=0.020) 4. There is a

			relationship between use of implants with effect other side such as dizziness, nausea, fatigue (p=0.0 20)
2	Usage Overview Hormonal Contraception and Events side effect Use Hormonal Contraception in Women of Age Fertile (Putri & Nikmah, 2021).	Types of research descriptive. Population in study this is all over woman age fertile which becomes acceptor hormonal contraception in PMB Lilik Nur Hidayati, SST. The sampling technique used purposive sampling with 80 respondents. Data analysis used table distribution frequency	1. Improvement weight as much as as many as 49 people (61.2%). 2. Disturbance menstruation as many as 18 people (22.5%) 3. Gastrointestinal disorders in 8 people (10%) 4. Decreased libido by 2 people (2.5%) 5. The appearance of acne and blemishes black as many as 3 people (3.8%)
3	Measuring experiences and concerns surrounding contraceptive induced side-effects in a nationally representative sample of contraceptive users: Evidence from PMA Ethiopia (Zimmerman et al., 2022).	Types of research survey analytic with design cross-sectional research. Population: Women aged reproductive age (15-49 years) in Ethiopia. Analytical Sample: Women who are users hormonal contraception. Samples taken with stratified two-stage cluster design sampling technique . Univariate analysis using descriptive and bivariate statistics use Analysis Regression	1. There is a relationship between use of contraceptive implants with disturbance menstruation (p=0.020) 2. There is a relationship between use of contraceptive implants with change body weight (p=0.000) 3. There is a relationship between use of contraceptive implants with discomfort physique that is Sick head, weakness (p=0.000)
4	Use KB Implant With Weight Gain and Menstrual Cycle in Mothers (Astuti et al., 2023).	Types of analytical survey research with approach cross sectional population study this that is overall woman age fertile which uses family planning acceptors at BPM Umi Kalsum in 2022. There are 180 in number population that is used sample study all. Total side sampling technique. Bivariate analysis using the chi square test	1. between use of contraceptive implants with increase weight has significant relationship (p=0.001) 2. between use of contraceptive implants with cycle period own significant relationship (p=0.003)
5	Satisfaction With the Use of Subdermal Contraceptive Implant in Women Attending the Specialized Polyclinic Primary Health Care Center in Jeddah City: A Cross-Sectional Study	Types of research descriptive. Population is Woman age fertile who use Implanon as method contraception during 2018-2021 period. Samples taken with technique probability sampling. analysis descriptive, variable categorical used served as frequency and percentage	1. improvement body weight (weight gain) with percentage 54.76% 2. disturbance menstruation (menstrual

	(Wali et al., 2023).	and variables numeric served as an average, standard deviation, median, range	irregularity) by 39.29%) 3. discomfort like painful head by 22.62%, loss of libido 15.48% and dizziness by 14.29%,
6	The Relationship Between Length of Use of Contraceptive Implants and Incident Disturbance Menstruation In the Tatah Makmur Community Health Center Area (Julianda et al., 2025).	Types of research quantitative design studies cross sectional. Population is all over users tool contraceptive implant during In 2022, 70 people were recruited. The sampling technique used was purposive sampling. Data analysis used Chi-Square	1. There is long-term relationship of use tool contraceptive implant with incident disturbance menstruation in the work area Tatah Makmur Community Health Center (p=0.015)

Based on results analysis of 6 articles conducted by researchers obtained effect side Use of contraceptive implants, namely:

Disturbance Menstruation

Based on 6 articles in Indonesian and English show that the use of birth control implants has connection with disturbance menstruation. According to study Odewe et al. (2020); Putri et al. (2022); Zimmerman et al. (2022); Astuti et al. (2023); Wali et al. (2023) and Julianda et al. 9202%) stated that the KB implant has side effect to cycle menstruation that are amenorrhea, hypomenorrhea, bleeding more profuse and irregular bleeding.

Menstruation disturbance experienced user tool contraceptive implants based on duration of use vary. Most users tool contraceptive implant with a duration of use of 3 years more often complain no menstruation in long time or amenorrhea. This happen consequence usage long-term hormonal contraception will cause endometrial atrophy. Because with stopping formation progesterone will disturbing giving nutrition to the endometrium so that the endometrium becomes thin and atrophic (Julianda et al., 2025).

A number of change pattern period will happened in the first year of use implants, approximately 80 % of users. Change the covers the interval between bleeding, duration and volume of blood flow, and spotting (patches bleeding). Oligomenorrhea and amenorrhea also occur, but rare. Less than 10% after first year. Regular bleeding and elongated usually happened in the first year. It seldom happened in the second year., the problem bleeding can happened at the time anytime. Oligomenorrhea and amenorrhea also occur but rare. Less from 10% after a first year, regular bleeding and elongated usually happened in the year first. It seldom happened in the second year, the bleeding problem can happen at the time any time (Putri & Nikmah, 2021).

Menstruation disturbance proven become main side effect reported in a way significant by users implants, with percentage women who experience effects on the cycle regular menstruation reached 54.5% in users implants and even more high in past users. Bleeding side effect, which includes irregular bleeding or no bleeding (amenorrhea), far more often reported than effect non- bleeding side. Problem disturbance menstruation can influence evaluation positive woman to method contraception and can cause dissatisfaction as well as termination use (Odwe et al., 2020).

Weight Changes

According to Putri et al. (2023) and Astuti et al. (2023) on contraception a type of hormone that contains progesterone, this can trigger gain weight because progesterone will also improve stimulation carbohydrate into sugar and fat. Another possible reason is because this type of hormonal contraception generally own effect side in the form of improvement lust eat, The possibility of gain weight for acceptor because they have eating pattern consisting high carb and fat.

According to Zimmerman et al. (2022) stated that two form body weight change (gain weight and decline weight) as implant contraceptive side effects. The study (based on information counseling provided to user) shows that among users implants, the percentage who received counseling about potential gain weight was 4.6%, and the percentage that received counseling about potential decline body weight is 4.4%, which indicates that second type change the weight considered as effect relevant and appropriate non- bleeding side effects communicated to contraceptive implant users.

In line with Odwe et al. (2020) stated that effect outside implant side bleeding that is occurrence increase body weight as much as 1.7% of new implant users and 2.5% of old implant users as well decrease body weight in new implant users by 2.3% and 8.3% in old implant users.

Disturbance Discomfort

Based on research conducted by Odwe et al. (2020) states that disturbance reported non - bleeding discomfort as effect beside the birth control implant covering headache, dizziness, decreased libido and cramps, which are non - bleeding effects this, especially when happen simultaneously with disturbance bleeding, closely related with decline evaluation positive to method contraception. The main cause of various discomfort is progesterin hormone inside is released in a way continuously by the implant (etonogestrel), which affects hormonal balance of the body.

In line with Zimmerman et al. (2022) and Wali et al. (2023) stated that disturbance non-bleeding discomfort associated with implant contraception (one of the method hormonal contraception) are very diverse and have been reported as related complaints with discomfort physical discomfort. The most common disorder counseled (and assumed to be most often experienced/worried about) by users implant covering complaint reported headache experienced / worried about more often than change bleeding, nausea, weakness and acne. The main reason of various side effect due to fluctuation or change level the hormone progesterin (which is released implant) in body, which although effective prevent pregnancy, can influence body system and trigger emergency physique symptoms.

The other side effect happen is gastrointestinal disorders in the form of nausea (10%), this usually happened at the beginning use hormonal contraception and then will disappear after body start can adapt with hormones that enter to in body. In addition, The other side effect such as black spots and acne (3.8%) as well occurrence decline of libido (2.5%) (Putri & Nikmah, 2021).

Conclusion and Suggestion

Based on review of 6 articles can be concluded the frequent side effects of implant use namely occurrence disturbance menstruation (amenorrhea, hypomenorrhea and menorrhagia), weight changes (gain and loss body weight) and physical and emotional discomfort such as headache, digestion issue, fatigue, the appearance of acne and decreased libido.

It is expected Health workers to give comprehensive informations about all side effects including disturbance bleeding menstruation and non- bleeding effects, Quick response to serious issue of the patient, and increase system search treatment (care-seeking) so that patients quick look for help when experience discomfort.

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