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The Relationship Between The Use of Hormonal Contraception and The Incidence of Mastalgia in Hormonal Contraception Acceptors

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ABSTRACT

Introduction: The use of hormonal contraception is one of the most popular contraceptive methods among women. However, it has side effects. Mastalgia is a side effect experienced by 70% of women of childbearing age. The aim of this study was to examine the relationship between hormonal contraceptive use and the incidence of mastalgia in hormonal contraceptive users.

Methods: This study employed an analytical correlational design using a cross-sectional approach. The study population consisted of 73 hormonal contraceptive acceptors. Using simple random sampling, 62 respondents were selected for participation in the study. Data were collected using a structured questionnaire consisting of respondent characteristics, contraceptive history, and mastalgia complaints. The questionnaire was reviewed by experts to establish content validity before data collection. then tabulated and analyzed using the test contingency coefficient with significance level (P-Value) = < 0.05.

Results: Most respondents at Muhammadiyah Kedungpring Primary Clinic used injectable hormonal contraceptive methods. 3 months combination, Most respondents experienced mastalgia and there was a relationship between the use of hormonal contraception and the occurrence of mastalgia with (P-Value) = 0.000 (0.000 < 0.05) This means that there is a relationship between the use of hormonal contraception and the occurrence of mastalgia in hormonal contraception acceptors at the Muhammadiyah Kedungpring Primary Clinic with a correlation value of 0.422 (moderate/sufficient).

Conclusion: Based on the research results above, it can be recommended that every health worker who provides hormonal contraception can inform the patients about its impacts, especially mastalgia, so that they can adapt to these complaints.

Keywords: Acceptors, Hormonal contraception, WUS

INTRODUCTION

The use of hormonal contraception is one of the most popular contraceptive methods among women. However, hormonal contraceptives may produce several adverse effects, one of which is mastalgia, defined as pain affecting one or both breasts. (Hariati, A, 2020). most common experienced by 70% of women of childbearing age. Mastalgia can be a significant problem for some women, impacting their quality of life and comfort (Prajoko Y. W, 2023)

Although it is not a sign of a serious illness, persistent and severe discomfort can interfere with daily life, it also makes acceptors consider stopping and some of them want further examination due to fear of serious problems (ElSherif, A., & Valente, S. A, 2022)

According to the World Health Organization (WHO, 2019), nearly 380 million couples of childbearing age practiced family planning, and 65-75 million of them, especially in developing countries, used hormonal contraception such as pills, injections, and implants. According to Statistics Indonesia (BPS, 2024), there are 53.47% of women aged 15-49 years And status Once marry Which currently use tool psychological contraception . Indonesia in 2024 Birth control injections or hormone injections are the most popular contraceptive method used by married couples, 52.87% of couples use birth control injections as a contraceptive method. Based on data from the East Java provincial statistics center in 2021, PUS uses contraception in Java east is 7,593,089 Which consists of from IUD 648,128 (8.54%), MOW 276,490 (3.64%), MOP 19,609 (0.25%), condom 125,043

(1.65%), implant 663,066 (8.73%), inject 2,969,871 (39.11%), pill 1,028,121 (13.54%). Based on the data above, the highest level of contraceptive use in East Java is hormonal contraception. In a preliminary study at the Muhammadiyah Kedungpring Primary Clinic during the month of In August 2025, there were 19 repeat visits for hormonal contraception, and 13 (68.42%) of them complained of breast pain during the previous visit. The remaining 6 (31.57%) did not experience breast pain.

Hormonal contraceptives remain the most widely used contraceptive method among women of reproductive age, even though its use has many side effects (Zahidah, AK, Udiyono, A., & Adi, MS, 2017) This occurs due to several considerations in its use, such as high effectiveness, non-contraceptive benefits for health, and ease of access (Qibtiah, M., & Lisca, SM (2022) . If happen painful breast light, so can done handling At home Some treatments that can relieve symptoms include applying warm or cold compresses, wearing a supportive and comfortable bra, and taking pain relievers such as paracetamol or ibuprofen. However, if the pain persists or worsens, a lump or mass is felt, nipple discharge, or skin changes are present, further examination is necessary (ElSherif, A., & Valente, S.A., 2022) .

Although the use of hormonal contraception has become common, research on the relationship between hormonal contraception and mastalgia is still limited, so this study can contribute to existing knowledge, provide useful information for family planning acceptors and health workers in making decisions about the use of hormonal contraception,

so that it can improve the quality of services. health. This study aims to determine the relationship between the use of hormonal contraception and the incidence of mastalgia in hormonal contraception acceptors at the Muhammadiyah Kedungpring Primary Clinic, Lamongan Regency.

METHOD

This study employed an analytical correlational design using a cross-sectional approach to examine the relationship between hormonal contraceptive use and the incidence of mastalgia among hormonal contraceptive acceptors. Cross-sectional studies assess exposure and outcome simultaneously at a single point in time and are appropriate for examining associations between variables, although they do not establish causality. The study was conducted at Muhammadiyah Kedungpring Primary Clinic, Lamongan Regency, Indonesia, from August to October 2025. The study population consisted of 73 hormonal contraceptive acceptors who met the inclusion criteria. Using simple random sampling, 62 respondents were selected and agreed to participate in the study. The inclusion criteria were women using hormonal contraception for at least three months, aged 20–49 years, willing to participate, and able to complete the questionnaire independently. Women diagnosed with breast tumors, breast cancer, pregnancy, or lactation were excluded from the study. The independent variable was the type of hormonal contraception (combined hormonal contraception and progestin-only contraception), while the dependent variable was the incidence of mastalgia.

Data were collected using a structured questionnaire consisting of respondent characteristics, contraceptive history, and mastalgia complaints. Before data collection, the questionnaire was reviewed by experts to ensure content validity. Data collection was carried out after respondents signed informed consent. Data were analyzed using descriptive statistics to summarize respondent characteristics. The association between hormonal contraceptive use and mastalgia was analyzed using the Contingency Coefficient test, with statistical significance established at $p < 0.05$.

RESULTS

Table 1 shows that of the 62 hormonal KB acceptors at the Muhammadiyah Primary Clinic Kedungpring . Based on age , the majority, namely 44 acceptors or 71%, were aged > 35 years and a small portion, namely 18 acceptors or 29%. Meanwhile, based on parity, the majority, namely 39 acceptors or 63%, were found. are multipara and a small portion, namely 23 acceptors or 37 percent, are primipara.

From table 3 it can be seen that of the 62 hormonal KB acceptors at the Muhammadiyah Kedungpring Primary Clinic, almost all of them, namely 47 acceptors or 76% experiencing mastalgia. The Contingency Coefficient test showed a statistically significant association ($p = 0.000$). Because the p-value was less than 0.05, the null hypothesis was rejected, so can It was concluded that The study hypothesis was supported, meaning there was a significant relationship between the use of hormonal contraception and the incidence of mastalgia. The correlation value obtained was 0.422, meaning that the strength of the relationship between the

use of hormonal contraception and the incidence of mastalgia was moderate/sufficient.

Table 1. Respondent Characteristics

Characteristics	n	(%)
Age		
20-35 years	18	29%
> 35 years	44	71%
Total	62	100%
Parity		
Primipara	23	37%
Multipara	39	63%
Total	62	100%

Table 2. Distribution of Research Variables

Variables	n	(%)
Hormonal birth control		
Method combination	58	94%
Method Special Progestin	4	6%
Total	62	100%
Mastalgia		
Experience	47	76%
Not Experiencing	15	24%
Total	62	100%

DISCUSSION

Use of Hormonal Birth Control

Table 2 shows that among the 62 hormonal contraceptive acceptors, 58 respondents (94%) used combined hormonal contraceptive methods, while only 4 respondents (6 %) used progestin-only contraception. These findings indicate that combined hormonal contraceptives remain the preferred contraceptive method among women attending the Muhammadiyah Kedungpring Primary Clinic.

The preference for injectable hormonal contraception may be attributed to its convenience, high effectiveness, and longer dosing interval compared with daily oral contraceptives. Injectable contraceptives require minimal user adherence because they are administered periodically by healthcare providers, making them an attractive option for many women of reproductive age, own effectiveness tall And can Helps regulate menstrual cycles. According to research by Nawangsari, H., Triuspitsari, M., Fatmawati, N., & Putrayana, M. (2023), Many women of childbearing age choose to use hormonal contraception because it is considered safe and practical, and it is also highly effective with a 99% success rate.

Based on data and research conducted by the National Family Planning Coordinating Board (BKKBN) in 2018, during the use of the 3-month combination injection method containing Medroxyprogesterone acetate and Estradiol cypionate, KB acceptors will continue to menstruate every month, and minimize the effects of spotting (Putri, LA, & Nikmah, N, 2021).

According to Matahari et al. (2018), there are many advantages to using monthly injectable contraception for women of childbearing age. These include high effectiveness, no need to store injectables at home because health workers can administer them directly, no vaginal examination, and relatively low cost. This is consistent with research by Putri, LA, & Nikmah, N (2021), which found that hormonal contraception remains dominant among women of childbearing age. The most commonly used type of hormonal contraception is the monthly injectable.

Table 3. Use of hormonal contraception with the occurrence of mastalgia in hormonal contraceptive acceptors

Use of Hormonal Birth Control	Mastalgia Occurrence				Total	C	p	
	Experience		Not Experiencing					
	n	(%)	n	(%)				
Method combination	47	76%	11	18%	58	94%	0.422	0.000
Method Special Progestin	0	0%	4	6%	4	6%		
Total	47	76%	15	24%	62	6%		

The high proportion of respondents using combined hormonal contraceptive methods indicates that this method remains the preferred contraceptive choice among women of reproductive age because of its high effectiveness, ease of administration, and long duration of action. Injectable hormonal contraceptives are widely accepted because they require minimal user compliance compared with daily oral contraceptives, thereby improving contraceptive effectiveness. However, hormonal exposure may induce several estrogen- and progesterone-related adverse effects, including breast tenderness and mastalgia, which should be communicated during contraceptive counseling (Morrone et al., 2023; Curtis et al., 2024).

In the authors' opinion, the predominance of hormonal injectable contraception in this study reflects the success of family planning programs in increasing contraceptive coverage. Nevertheless, comprehensive counseling before contraceptive initiation should be strengthened to ensure that women understand both the benefits and potential adverse effects, particularly mastalgia. Appropriate counseling may improve contraceptive continuation rates and reduce unnecessary discontinuation of hormonal contraception.

Mastalgia Occurrence

Table 2 shows that of the 62 hormonal KB acceptors at the Muhammadiyah Kedungpring Primary Clinic, almost all of them, namely 47, accepted hormonal KB. acceptors or 76 % experienced mastalgia .

Mastalgia occurs due to hormonal surges after taking hormonal contraception. These changes in hormone levels mimic the body's natural fluctuations, triggering changes in breast tissue that cause discomfort, pain, or extreme sensitivity. Furthermore, the hormones in birth control can cause fluid retention (edema), which can make the breasts feel denser, swollen, and painful (Prihati, et al, 2023).

In line with the research of ElSherif, A., & Valente, SA (2022) Elevated estrogen levels, decreased progesterone levels, abnormal estrogen/progesterone ratios, or elevated prolactin levels are associated with mastalgia. The cyclical nature of breast pain, the presence of breast symptoms such as swelling, tenderness, and nodules, and the disappearance of these symptoms in the postmenopausal period may be due to the effects of estrogen.

Hormonal activity is suspected to be related to increased breast tissue sensitivity to estrogen and possibly associated with

increased prolactin levels. Furthermore, research has found decreased gamma linoleic acid levels in people with cyclic mastalgia. In other studies, cyclic mastalgia has also been associated with histopathological, nutritional, or psychiatric disorders. (Ristiani, R, 2023). Breast pain among hormonal contraceptive users is primarily associated with hormonal fluctuations affecting breast tissue sensitivity. Estrogen stimulates ductal epithelial proliferation, whereas progesterone promotes lobular development, leading to increased tissue tension and discomfort. Nevertheless, most mastalgia cases are benign and self-limiting, requiring reassurance rather than extensive diagnostic procedures in the absence of alarming clinical signs (Sivarajah et al., 2022; Ader & Browne, 2023).

In the authors' opinion, although mastalgia is generally not associated with breast malignancy, persistent breast pain often causes considerable anxiety among contraceptive users. Consequently, health professionals should differentiate physiological mastalgia from symptoms requiring further diagnostic evaluation. Providing evidence-based education regarding the benign nature of most mastalgia cases may reduce unnecessary anxiety while encouraging continued contraceptive use.

The Relationship Between the Use of Hormonal Contraception and the Incidence of Mastalgia

Based on Table 3, it can be seen that of the 62 hormonal KB acceptors, almost all of them were 75.8% of those using the combination method of birth control experienced mastalgia.

Combined hormonal contraceptives contain estrogen and progesterone. Estrogen plays an important role in breast tissue development, whereas progesterone stimulates lobuloalveolar maturation. Consequently, hormonal fluctuations induced by contraceptive use may increase breast sensitivity and contribute to mastalgia. By Therefore, administering hormonal birth control intervention can cause swelling of breast tissue, making it more sensitive or painful (Els, V, 2021).

In line with study Azizah, et al (2021) mastalgia can associated with premenstrual syndrome, which may involve only breast pain or may include painful conditions body in a way general and tense sensation. Cyclic mastalgia may be due to hormonal effects on breast tissue or due to systemic water and salt retention conditions in the body. Method contraception hormonal is method Which use hormone synthesis like estrogen And progesteron For prevent pregnancy with how to inhibit ovulation thickens cervical mucus thinning the endometrial layer so that difficult For happen implantation. Hormone hormone This mimics the natural increase in estrogen and progesterone before menstruation, which is the time when many woman Already experience painful breast (Rokayah, et al, 2021).

The present study demonstrated a statistically significant association between hormonal contraceptive use and mastalgia ($p < 0.001$), indicating that hormonal exposure contributes to breast discomfort among contraceptive users. The Contingency Coefficient value ($r = 0.422$) indicates a moderate association, suggesting that hormonal contraception is not the only determinant of mastalgia. Other factors, including age, parity, body

mass index, duration of contraceptive use, psychological stress, caffeine consumption, and menstrual cycle characteristics, may also contribute to breast pain (Morrow et al., 2024).

In the authors' opinion, the moderate correlation identified in this study indicates that mastalgia should be regarded as a multifactorial condition rather than solely a consequence of hormonal contraceptive use. Therefore, health professionals should assess additional risk factors before attributing breast pain exclusively to hormonal contraception. Future studies are recommended to employ longitudinal or prospective designs and multivariate analyses to identify independent predictors of mastalgia and improve evidence-based contraceptive counseling.

This study has several limitations. First, the cross-sectional design does not allow causal relationships between hormonal contraceptive use and mastalgia to be established. Second, the study was conducted at a single primary healthcare clinic with a relatively small sample size, thereby limiting the generalizability of the findings. Third, several potential confounding variables, including body mass index, duration of contraceptive use, menstrual cycle characteristics, caffeine intake, smoking habits, and family history of breast disease, were not evaluated. Future studies should employ multicenter longitudinal designs with larger sample sizes and multivariate statistical analyses to better identify independent predictors of mastalgia among hormonal contraceptive users.

CONCLUSION

This study demonstrated a significant association between hormonal contraceptive use and the occurrence of mastalgia among hormonal contraceptive acceptors. These findings highlight the importance of comprehensive counseling regarding the potential side effects of hormonal contraception, particularly mastalgia, to improve contraceptive adherence and reduce unnecessary discontinuation.

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