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## **Premenstrual Syndrome on Injectable Contraceptive Acceptors**

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### **Abstract**

Premenstrual syndrome can be experienced in women that occurs in the phase of the range of childbearing age. Premenstrual syndrome is associated with the use of contraceptives on acceptors of injectable birth control. The use of hormonal contraceptives, one of which is injectable birth control, tends to be chosen by WUS to delay the child. The type of research carried out is qualitative with descriptive approach. The informant in this study was WUS

who used injectable hormonal contraceptives. Informants were selected with a purposive approach and in this study, 7 WUS main informants were obtained, while supporting informants were cadres and midwives. The use of PMS-related birth control is considered to reduce PMS symptoms. The use of birth control is associated with the light weight of PMS because informants do not get menstruation or menstruation becomes more frequent.

**Keywords:** Premenstrual Syndrome, Injectable Contraceptives, Women of Childbearing Age

### **Background**

The menstrual cycle is a continuous process of hormonal changes that lead to the formation of the endometrium, ovulation and shedding of the uterine wall if pregnancy does not occur. Menstruation or menstruation is bleeding that occurs repeatedly every month in a woman's uterus due to the shedding of the uterine wall. The phases that occur in the menstrual cycle include the follicular phase, the ovulation phase and the luteal phase.

Premenstrual syndrome (PMS) is a recurrent luteal phase disorder characterized by irritability, anxiety, emotional lability, depression, edema, breast tenderness, and headache, occurring for 7 to 10 days before and usually ending several hours after the onset of menstruation. The diagnosis is clinical and is often based on recording the woman's daily symptoms.

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Premenstrual syndrome is associated with the use of hormonal contraceptives. Hormonal contraceptives include injection, pill and implant methods. The use of hormonal contraceptives is associated with side effects that can occur in WUS, one of which is limited use of injectable contraceptives, namely menstrual disorders, vaginal discharge, galactorrhea, acne, hair loss, changes in body weight, changes in libido (Sulistyawati, 2013) [6].

Changes in hormone levels (estrogen and progesterone) can affect chemicals in the brain, especially serotonin, which affect mood. These symptoms are triggered by rising and falling levels of estrogen and progesterone. Estrogen-suppressing gonadotropin-releasing hormone significantly reduces PMS symptoms. Cyclic effects of estrogen and progesterone on the serotonin, -aminobutyric acid, and dopamine systems are likely to be the cause of mood swings. (Nworie, 2018) [3].

Physiological factors were identified as significant predictors of premenstrual syndrome. Physiological factors do not have a direct influence on premenstrual coping, but indirectly influence premenstrual syndrome. The need for strategies to control physiological factors should help to identify the symptoms of premenstrual syndrome. It is important to consider psychological factors including perceived stress, menstrual attitudes and premenstrual syndrome in developing a program to improve the ability and quality of premenstrual health coping related to menstruation. (Chae *et al*, 2017) [1].

Based on data from the 2017 IDHS, the number of couples of childbearing age reached 37 million with active family planning participants reaching 23 million. Contraceptive methods used include injection method reaching 62.77%, IUD 7.15%, implant 6.99%, MOW 2.87% pill 1.24% and condom 1.22%.

Data from Central Java Province 2020, the number of couples of childbearing age reached 5.9 million, the number of active family planning participants reached 65.3%. The number of active family planning participants in Banyumas Regency in 2019 was 235,451 (74.1%) from 317,803 PUS. The number of injection family planning users reached 46.7%, IUD 16.8%, pills 10.3%, MOW 4.2%, and 18.8% implants. (Ministry of Health of the Republic of Indonesia, 2020; Banyumas District Health Office, 2020). The West Purwokerto Subdistrict (43.1%) and the Sumbang Subdistrict in Banyumas Regency are areas that have injection family planning acceptors.

This study wants to examine PMS symptoms related to physical and psychological aspects and the impact of PMS on women using injectable hormonal contraceptives. The use of injections as a contraceptive method can be related to PMS symptoms felt in women of childbearing age, PMS can also have an impact on productivity.

**Methods**

The approach in this research is through a descriptive study approach. This study is to identify women of childbearing age who use injectable hormonal contraception. Data collection techniques were carried out through structured interviews.

This research was conducted in West Purwokerto and Sumbang sub-districts, through several stages, namely the preparation stage, implementation stage, and interpretation stage. At the preparatory stage, it begins with taking care of licensing to related parties and research informants as well as preparing research instruments with a period of about 3 weeks.

At the implementation stage, activities include visiting informants, providing research information and informed consent, collecting data through in-depth interviews, observation and document review with a period of about 3 weeks. The main research informants were 7 child bearing women users of hormonal contraception. Supporting informants in this study were cadres and midwives. The next stage is the preparation of the results manually by transcribing the results of the interviews with informants, then coding and forming the themes to the stage of preparing the research report.

**Result**

**Informan Characteristiq**

The research was conducted on 7 key informants. Based on the results of the interview, it is known that the characteristics of the informants are as follows:

**Table 1**

NNo	Informant	Age	Hormonal Contraception and Duration of Use	Level of Education	Job/work
1	NJP	18	Injection (6 months)	Junior High School	housewife
2	FAP	25	Injection (3 months)	Senior High School	housewife
3	F	18	Injection (2 years)	Junior High School	housewife
4	B	44	Injection (10 years)	Elementary School	Seller
5	H	41	Injection (5 years)	Senior High School	housewife
6	S	41	Injection	Elementary	housewife

			(1 years)	School	
7	S	40	Injection (1 years)	Senior high school	housewife

Informants have nutritional status data related to BMI in the normal range as many as 3 informants, 3 informants are overweight and 1 informant is obese. Informants have an age range between 18 to 44 years. Informants have a parity of 1-3 children. All of the informants used injectable contraception with duration of use ranging from 3 months to 10 years.

The results of in-depth interviews by researchers with research informants were then analyzed using content analysis with thematic network approach.

**Table 2**

Global Theme	Organized Theme
Knowledge of PMS regarding its limitations, symptoms and effects	The exact limits of PMS are still not understood, but other informants can explain the limitations of PMS, namely symptoms felt before/before menstruation
	Symptoms that are felt related to PM according to their understanding are abdominal pain, dizziness, back and body aches, breast pain
Symptoms Of PMS felt	The informant stated that he suffers from PMS when he has a lot of thoughts, is tired, every time he menses
	Physical symptoms that are felt are abdominal pain, dizziness, stiff neck, aches, back pain, breast pain
	The psychological symptoms they felt were bad mood, quick to anger, more sensitive, but the informants also stated that they did not experience any psychological symptoms
	Changes in behavior that are felt when PMS is the informant becomes lazy
PMS and produktivity	Some of the informants stated that PMS could interfere with productivity, but some of the informants also stated that it had no effect because they continued to carry out activities
The use of hormonal contraception related to PMS is felt	The use of family planning related to PMS according to the informants was considered to be able to reduce PMS symptoms, but not too significantly, but some informants stated that there was no effect on the use of family planning with the severity of PMS because the informants did not get menstruation because they used injectable family planning. Some informants stated that PMS symptoms worsened because menstruation became more frequent

The results of this study can be informed that the informants stated that there were those who already understood about PMS but some of the informants did not know about the limits of PMS. The understanding of PMS related to symptoms felt only in the form of physical symptoms such as back pain, abdominal pain, dizziness, body aches and breast pain. Dizziness, body aches and breast pain.

The perceived psychological symptoms included a bad mood, irritability, more sensitivity, but the informants also stated that they did not experience any psychological symptoms. Changes in behavior felt by informants, among others, experienced a sense of laziness in carrying out activities because of a bad mood.

Productivity is associated with PMS, namely informants stated that PMS can interfere with productivity, but some informants also stated that it had no effect because they

continued to carry out activities. The use of family planning related to PMS according to the informants was considered to be able to reduce PMS symptoms, but not too significantly, but some informants stated that there was no effect on the use of family planning with the severity of PMS because the informants did not get menstruation because they used injectable family planning. Some informants stated that PMS symptoms aggravated because the menstruation they got became more frequent.

### Discussion

Both hormonal and non-hormonal contraceptive users reported experiencing PMS symptoms. In non-hormonal contraceptive users, at least 86.25% experienced PMS symptoms, 13.75% did not report any symptoms. Of users using hormonal contraception, 88.8% reported PMS symptoms and 11.2% did not have any symptoms. Approximately 86% of subjects showed moderate to severe PMS symptoms, although using hormonal contraceptive methods could theoretically reduce PMS symptoms. (Bakhshani *et al*, 2014)<sup>[2]</sup>

Premenstrual syndrome and its most severe form can be referred to as premenstrual dysphoric disorder (PMDD). There is an association between PMDD and changes in certain progesterone metabolites (pregnenolone and allopregnanolone) during the menstrual cycle. Neurotransmitters, particularly gamma-aminobutyric acid (GABA) and serotonin, appear to be involved in PMS/PMDD manifestations. GABA is an important regulator of stress, anxiety, and alertness, among other conditions, and the aforementioned progesterone metabolites (pregnenolone and allopregnanolone) act as positive modulators of the GABA system in the brain. Deficiency of these metabolites is associated with PMS/PMDD (Lete and Lapuente, 2016)<sup>[4]</sup>.

PMS-related factors include stress, physical activity, nutritional status and sleep disturbances. Stress will trigger the release of the hormone cortisol in the body. The more stressed the cortisol levels will be higher. It affects the activity of the hypothalamus and pituitary gland. The activity of the hypothalamus will be related to the pituitary in stimulating the release of FSH and LH and stimulate the ovaries to produce estrogen. If there is a disturbance in the hormones FSH and LH, it will affect the formation of the egg and affect a series of menstrual cycles.

Physical activity stimulates Gonadotropin Releasing Hormone (GnRH) and gonadotropin activity thereby lowering serum estrogen so that it does not stimulate the formation of the endometrium. Moderate and strenuous physical activity results in suppression of GnRH so that it is associated with diminishing FSH and LH secretion which causes the menstrual cycle.

Nutritional status plays an important role in influencing the function of reproductive organs. Menstrual cycle disorders are caused by impaired growth and development of the reproductive system which inhibits the release of GnRH which can reduce FSH and LH levels in individuals with poor nutritional status. Menstrual disorders are associated with the amount of body fat tissue in individuals with more nutritional status.

Lack of sleep can lead to malfunctions and activities of daily living, psychological and behavioral problems and obesity. Lack of sleep is also associated with irregular menstrual cycles and the incidence of PMS that affects women's

reproductive function. Insomnia can trigger inhibition of LH secretion and also trigger changes in the pattern of the menstrual cycle. (Romans *et al*, 2015)<sup>[5]</sup>

### Conclusion and Recommendations

Informants did not know about the limits of PMS. The understanding of PMS related to symptoms felt only in the form of physical symptoms such as back pain, abdominal pain, dizziness, body aches and breast pain. Dizziness, body aches and breast pain. The perceived psychological symptoms included a bad mood, irritability, more sensitivity, but the informants also stated that they did not experience any psychological symptoms. Changes in behavior felt experienced by informants a sense of laziness in carrying out activities because of a bad mood.

### References

1. Chae, Myung-Ock, Jeon, Hae Ok, Kim, Ahrin. A Structural Model for Premenstrual Coping in University Students: Based on Biopsychosocial Model J Korean Acad Nurs. 2017; 47(2):p257.
2. Mohammad Bakhshani, Mohsen Hosseinbor, Zahra Shahraki, Nahid Sakhavar Nour. Premenstrual Syndrome Symptomatology among Married Women of Fertile Age based on Methods of Contraception (Hormonal versus Non-Hormonal Methods of Contraception). Global Journal of Health Science. 2014; 6(2).
3. Kelechi Nworie. Premenstrual syndrome: Etiology, diagnosis and treatment. A mini literature review. January 2018. Journal of Obstetrics and Gynecological Investigations. 2018; 1(1):41-46. Doi:10.5114/jogi.2018.78010
4. Iñaki Lete, Oihane Lapuente. Contraceptive options for women with premenstrual dysphoric disorder: Current insights and a narrative review. Journal of Contraception. 2016; 7:117-125.
5. Roman SE, Kreindler D, Einstein G, Laredo S, Petrovich MJ, Stanley J. Sleep Quality and the Menstrual Cycle. Sleep Medicine. 2015; 16(4):489-495.
6. Sulistyawati, Ari. Pelayanan Keluarga Berencana. Jakarta: Salemba Medika, 2013.