Poltekita: Jurnal Ilmu Kesehatan
http://ojs.polkespalupress.id/index.php/JIK

Vol.18 No.1 May 2024: Hal. 86-93
p-ISSN: 1907-459X e-ISSN: 2527-7170

Original Article

History of Types and Length of Contraceptive Methods Use with Pre-Menopausal Complaints in Pre-Menopausal Women

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ABSTRACT

Menopausal events are associated with decreased production of reproductive hormones, namely progesterone and estrogen. Both hormones in synthetic form are also present in some types of hormonal contraceptive methods. This study aims to determine the relationship between the history of the type of method and the length of use of contraceptives with the intensity of menopausal complaints. The design used is correlational analytics with a cross-sectional approach. A sample of 174 premenopausal women was selected by proportional random sampling. Information on the type and duration of contraceptive use was taken through interviews, and the intensity of premenopausal complaints was measured using the MRS (Menopause Rating Scale) questionnaire. Data analysis using regression methods was performed with STATA Statistics version 12.0, with statistical significance set at P < 0.05. Data analysis showed the associations between contraceptive types and pre-menopausal complaints (p-value 0.025) and between the length of contraceptive use and pre-menopausal complaints (p-value 0.021). The study recommends that contraceptive users consider the type and length of their methods, and healthcare providers should offer detailed counseling on how contraceptive choices might affect pre-menopausal symptoms. Future research should continue exploring the connection between contraceptive use and pre-menopausal complaints for more tailored guidance in the choice of contraceptive methods.

Keywords : *Contraceptive Method, Length Of Contraceptive Use, Menopause*

https://doi.org/10.33860/jik.v18i1.2963

INTRODUCTION

One of the stages of life that every woman goes through is menopause. Menopause is characterized by the end of the menstrual cycle. Menopause is the most anxious time in life for some women. Worries surround women's minds as they enter this phase. This concern comes from the thought that she will be unhealthy, out of shape, and not as beautiful as when she was still menstruating, so she may experience a change in attitude from her life partner/husband. The part of the climacterium before menopause is called premenopause, and the part after menopause is called postmenopause[1]. Syalfina's research (2017) shows that 75% of women who experience menopause perceive menopause as a problem or disorder, while the other 25% do not mind it[2]. Some menopausal women experience menopause symptoms that are severe enough to affect their daily activities which in turn can reduce their quality of life[3]. Climacteric symptoms generally appear in some women at the age of 40 years in the premenopausal period and the peak is reached at the age of 50 years, namely the menopause period. Climacteric symptoms include physical symptoms (*hot flushes, night sweats, vaginal dryness*, reduced skin elasticity, joint pain, urinary incontinence, decreased sexual arousal, and pain and discomfort during intercourse) as well as psychological symptoms[4].

Susenas 2022 data shows that around three in ten women have had a health complaint in the past month. This figure increased compared to 2021 by 4.19% points. Disaggregation by age group shows that the

highest percentage of women who have health complaints in the past month is in the age group of 45-49 years, which is the age limit before menopause, which is 35.31%. As age groups increase, the percentage of women who have health complaints is getting bigger[5]. Life Expectancy Age of the Indonesian population reaches 71.85 years in 2022. This figure increased by 0.28 years compared to the previous year which was 71.57 years[5]. The increase in Life Expectancy Age that occurred in Indonesia resulted in an increase in the number of menopausal women.

When entering menopause, women experience menopausal complaints caused by declining levels of the hormone estrogen and can benefit from the hormones estrogen and progesterone contained in contraceptives that can function as a substitute for hormones that begin to decline in number[6]. Approximately 70% of menopausal women experience both physical complaints (vasomotor complaints, urogenital tract) and psychic. The severity or lightness of complaints varies from woman to woman. These complaints reach their peak before and after menopause.

Juliana's research (2021) revealed that there are several factors associated with menopausal complaints, including age, income, work, education, knowledge, husband support, history of contraceptive use, frequency of fruit and vegetable consumption, and frequency of consumption of fatty foods[7]. Sari's research (2021) explains that the length of contraceptive use used by respondents in their research is more than 5 years, which is 92.9%. The use of hormonal contraceptives over a long period of time of more than 5 years can have a negative effect on the life of female sexuality[4]. The results of this study are supported by the results of Isfaizah (2019) research, namely that the use of hormonal contraceptives for a long time will affect vaginal epithelial cells, reduce vaginal lubrication which causes pain during intercourse (dyspareunia), and reduce sexual dysfunction[8]. Fatimah (2021) in her research explained that the use of hormonal contraceptives can reduce menopausal complaints and is often used as a treatment for the premenopausal stage[9].

BKKBN of Kota Malang and the Social Office of Women's Empowerment, Child Protection, Population Control and Family Planning (Dinsos-P3AP2KB) Kota Malang have 6 Family Planning Village (KB) fostered in five sub-districts. Bunulrejo Village is designated as a pilot KB Village in Kota Malang. The total population of Bunulrejo Village is 24,533 people, of which 12,524 people are women. The number of female population in the age range of 40-50 (premenopause) is 1,589 people. Based on the background above, researchers are interested in conducting research to determine the relationship between the history of the type and duration of contraceptive use with menopausal complaints in premenopausal women.

METHOD

This study used a type of correlational analytical research with a cross-sectional approach. The research data collection was carried out in 2 RWs in Bunulrejo Village, Kota Malang during July and August 2023. The population of this study was all women in the premenopausal period (aged 35-52 years) as many as 308 people. After being calculated using *proportional random sampling* techniques, a sample of 174 people was taken from the population.

The independent variables in this study are the type of contraceptive method and the duration of contraceptive use. The dependent variable is the severity of menopausal complaints, categorized into no complaints, mild complaints, moderate complaints, severe, and very severe complaints. Data on the type and length of contraceptive use were collected through structured interviews with the participants.

The instrument used to identify the level or intensity of complaints in premenopausal women is the *Menopause Rating Scale* (MRS) questionnaire.[9] The MRS scale shows some evidence of its ability to measure the effect of medication on quality of life across the range of complaint intensity in women in the aging process[10]. The reliability and validity of the Menopause Rating Scale (MRS) in Indonesia demonstrated strong test-retest reliability, with ICC values ranging from 0.90 to 0.95, indicating consistent results over time. The Cronbach's alpha coefficients for the somatic-vegetative, psychological, and urogenital dimensions were 0.92, 0.93, and 0.95, respectively, indicating a high level of internal consistency. Additionally, the Kaiser–Meyer–Olkin value of 0.96, along with a statistically significant Bartlett's test of

sphericity, confirmed the appropriateness of the data for Exploratory Factor Analysis (EFA). Furthermore, the Confirmatory Factor Analysis (CFA) using a second-order model with three first-order factors showed excellent model fit, supporting the construct validity of the MRS. These results suggest that the MRS is a reliable and valid tool for evaluating menopausal symptoms in Indonesian women[11]. The categories in the MRS questionnaire are no complaints if the score is 0, mild complaints if the score is 1-11, moderate complaints if the score is 12-22, severe complaints if 23-33, and very severe complaints if the score is 34-44.

All statistical analyses were performed using STATA Statistics/Data Analysis software (version 12.0), with regression analysis applied to evaluate the relationships between the independent and dependent variables. A P-value of less than 0.05 was considered statistically significant, indicating that results with a P-value below this threshold were unlikely to occur by random chance. This approach allowed for a robust examination of the factors associated with menopausal complaints, providing insights into the impact of contraceptive methods and their duration of use.

All procedures were approved by the ethics committee of the Poltekkes Kemenkes Malang, and written informed consent was obtained from all participants. The code of ethics was obtained and passed from the ethics of the Poltekkes Kemenkes Malang.

RESULTS

Table 1. Characteristics of Respondents

Characteristics	f	%
Age		
< 40 y.o	72	41.38
40-50 y.o	92	52.87
> 50 y.o	10	5.75
Education		
Primary	56	0,6
Secondary	81	
Higher Education	37	3,4
Occupation		
Employed	67	38.51
Unemployed	107	61.49

According to the characteristics of the respondents in Table 1, the majority are in the 40–50 age range (52.87%), with a median age of around 45. Among the respondents, 61.49% are unemployed. Regarding education, most respondents have secondary education, while only 0.6% have primary education and 3.4% have higher education.

Table 2. Distribution of Contraceptive Types, Length of Use, and Pre-Menopausal Complaints

Variable	f	%
Types of Contraceptive Methods		
Combination	44	22,4
Progestin Only	58	40,8
Non-Hormonal	72	36,8
Length of Contraceptive Use		
≤ 5 years	107	61.49
> 5 years	67	38.51
Pre-Menopause Complaints		
None	107	61.49
Light	65	37.36
Moderate	2	1.15

Table 2 shows contraceptive methods are varied, with 40.8% using progestin-only methods, 36.8% using non-hormonal methods, and 22.4% using combination contraceptives. The length of contraceptive use for 61.49% of respondents is five years or less. Table 1 also shows that 61.49% of respondents report no pre-menopausal complaints, 37.36% report light complaints, and only 1.15% report moderate complaints.

Table 3. The Association between Characteristics and Pre-Menopause Complaints

Characteristics	Pre-Menopause Complaints			p-value
	None	Light	Moderate	
Age				0.098
< 40 y.o	52 (72.22)	20 (27.78)	0	
40-50 y.o	47 (51.09)	43 (46.74)	2 (2.17)	
> 50 y.o	8 (80)	2 (20)	0	
Education				0.766
Primary	33 (58.93)	22 (39.29)	1 (1.79)	
Secondary	52 (64.20)	28 (34.57)	1 (1.23)	
Higher Education	22 (59.46)	15 (40.54)	0	
Occupation				0.299
Employed	37 (55.22)	20 (44.78)	0	
Unemployed	70 (65.42)	35 (32.71)	2 (1.87)	

Table 3 presents the age group with the highest proportion of no pre-menopausal complaints is >50 years, with 80% reporting no complaints. The 40-50 age group shows a more balanced distribution, with 51.09% reporting no complaints, 46.74% reporting mild complaints,

and 2.17% experiencing moderate complaints. Among those under 40 years, 72.22% report no complaints, with 27.78% reporting mild complaints and none experiencing moderate complaints. The p-value for the association between age and pre-menopausal complaints is 0.098, indicating that the result is not statistically significant.

There is a similar distribution of pre-menopausal complaints across different education levels. Primary education shows 58.93% with no complaints, 39.29% with mild complaints, and 1.79% with moderate complaints. Secondary education has 64.20% reporting no complaints, 34.57% with mild complaints, and 1.23% with moderate complaints. Higher education has 59.46% with no complaints and 40.54% with mild complaints, with no moderate complaints reported. The p-value for this association is 0.766, suggesting a lack of significant association.

Among employed participants, 55.22% report no complaints, 44.78% report mild complaints, and none report moderate complaints. Unemployed participants show a higher proportion of no complaints (65.42%), with 32.71% reporting mild complaints and 1.87% moderate complaints. The p-value for the association between occupation and pre-menopausal complaints is 0.299, indicating that the relationship is not statistically significant.

Table 4. The Association between Contraceptive Types, Length of Use, and Pre-Menopausal Complaints

Variable	Pre-Menopause Complaints			
	None	Light	Moderate	p-value
Types of Contraceptive Methods				0.025
Combination	19 (43.18)	24 (54.55)	1 (2.27)	
Progestin Only	41 (70.69)	16 (27.59)	1 (1.72)	
Non-Hormonal	47 (65.28)	25 (34.72)	0	
Length of Contraceptive Use				0.021
≤ 5 years	58 (54.21)	48 (44.86)	1 (0.93)	
> 5 years	49 (73.13)	17 (25.37)	1 (1.49)	

Table 4 presents an analysis of the association between different types of contraceptive methods, their length of use, and pre-menopausal complaints. Among the types of contraceptive methods, those who use combination contraceptives have the highest proportion of mild complaints (54.55%), while only 43.18% report no complaints, and 2.27% report moderate complaints. In contrast, the progestin-only group has the highest proportion of individuals with no complaints (70.69%), with 27.59% reporting mild complaints and 1.72% experiencing moderate complaints. For those using non-hormonal contraceptives, 65.28% report no complaints, with 34.72% experiencing mild complaints, and none reporting moderate complaints. The p-value for the association between contraceptive types and pre-menopausal complaints is 0.025, indicating a statistically significant relationship, suggesting that the choice of contraceptive method may influence the prevalence of pre-menopausal complaints.

Regarding the length of contraceptive use, individuals who have used contraceptives for five years or less have a relatively higher proportion of mild complaints (44.86%), while 54.21% report no complaints, and only 0.93% report moderate complaints. Those who have used contraceptives for more than five years generally report fewer complaints, with 73.13% having no complaints, 25.37% reporting mild complaints, and 1.49% experiencing moderate complaints. The p-value for this association is 0.021, indicating a statistically significant link between the length of contraceptive use and pre-menopausal complaints.

DISCUSSION

Pre-menopause, or the menopausal transition, is a stage where new symptoms can lead to challenging treatment decisions for healthcare providers. Women commonly seek medical advice for issues like hot flashes, vaginal and sexual changes, mood and sleep disturbances, and irregular bleeding patterns. Pre-menopause is the time when a woman's body undergoes physiological changes leading up to her final menstrual period (FMP). This stage begins with menstrual cycle irregularities and continues until menopause, defined as one year after a woman has stopped having periods. The length of perimenopause varies, but the median duration is about four years. The fluctuating hormone levels during this time can cause a range of symptoms that complicate clinical management for healthcare providers. Up to 90% of women consult medical

professionals for guidance on managing menopausal symptoms, highlighting the global relevance of this transition period[12].

A pre-menopause period is characterized by several changes in the hormonal environment of a woman: a decrease in the number of primordial follicles is shown due to low levels of inhibin B and Anti-Müllerian Hormone (AMH) and the ovaries begin to decrease in weight and size. This is related to an increase in follicle-stimulating hormone (FSH) levels due to a decrease in estradiol (E2) and inhibin B in serum, which is the basis of its negative feedback, while progesterone levels control luteinizing hormone (LH)[13].

The relationship between factors such as age, education, and occupation to the presence of pre-menopausal complaints is not taken into consideration, so it is necessary to look for other factors in providing explanations and education to women who experience pre-menopausal complaints[14]. Higher education indicates a better understanding of menopause and access to health services but not the prevention of pre-menopause itself. Whereas most of the participants in this study were unemployed, thus illustrating their low economic potential, this explains that they do not have the stressful work pressure that leads to pre-menopause.

The results showed that there was a significant relationship between the history of contraceptive types and menopausal complaints in premenopausal women at the research site. The results of this study support the results of research by Siti Fatimah (2021) entitled Factors Related to Premenopausal Complaints which states that there is a significant relationship between the history of contraceptive use and pre-menopausal complaints[9]. Hormonal contraceptives available in Indonesia contain a combination of hormones, namely estrogen and progesterone, and other types that only contain progestin hormones (progestin only). The combination of estrogen and progesterone suppresses ovarian function so that the ovaries do not produce eggs and prevent ovulation. Without ovulation, it is impossible to conceive or fertilize. Runiari (2019) in his research states that the use of hormonal birth control progesterone alone tends to cause a significant increase in body weight, as a result of metabolizing carbohydrates and sugar into fat, so that a lot of fat accumulates under the skin[15].

The choice of contraceptive use decisions in pre-menopause needs to be considered, recommendations for the use of short-term hormonal contraceptives and condoms in long-term use, permanent contraception can also be used[16].

The results of this study stated that most premenopausal women experience mild complaints, namely in the form of physical and mental fatigue with decreased performance in general and muscle joint problems. In line with Runiari's research above, the use of hormonal birth control progestins is at risk of weight gain that will affect the body performance of premenopausal women. Respondents with a history of acceptors of progestin-only hormonal contraceptive methods showed a greater number in the category of mild premenopausal complaints, some even experienced moderate premenopausal complaints, which were not experienced by respondents with a history of users of combined hormonal contraceptive methods (estrogen and progesterone) or non-hormonal. The main role of progesterone in the menstrual cycle is to prepare the female body to support pregnancy and care for pregnancy in the event of fertilization. Progesterone will be maintained high in the blood so that the endometrial lining in the uterus remains thickened and can provide an atmosphere conducive to pregnancy, and calm the uterus so that abortion does not occur until labor arrives. In the case of the use of progestin contraceptives, progesterone introduced into the acceptor's body will keep the uterus in the luteal phase, which begins after ovulation and continues until the first day of menstruation in the next cycle. When this progestin contraceptive is discontinued when approaching menopause, the endometrial lining will gradually thin and cause the birth canal to become 'dry', resulting in more premenopausal complaints felt by former acceptors of this method. This is supported by the results of the study where most of the respondents in this study are working. The results of Widjayanti's research (2021) stated that physical activity that is too heavy causes fatigue which will further aggravate menopausal complaints felt by acceptors[17].

The results of this study also explained that respondents with a history of hormonal birth control acceptors combined between progesterone and estrogen mostly did not feel premenopausal complaints. This phenomenon

can be caused because the combination of progesterone and synthetic estrogen in the female body will create a balance of progesterone and natural estrogen so that at the time before the premenopausal phase, the levels of these two hormones that are still left in the body of the former acceptor will help adapt to premenopausal symptoms longer than the former acceptor of progestin-only contraceptives. Gradually the acceptor of combined hormonal birth control is also predicted to feel premenopausal complaints along with the reduced levels of these two hormones in the female body.

The results of this study also show that there is a significant relationship between a long history of contraceptive use and premenopausal complaints in respondents. Respondents who have used contraceptives for more than five years tend to feel premenopausal complaints, most of which are vegetative symptoms. This supports the results of research by Kusuma (2016) and Sari (2021) on the topic of the relationship between method and duration of use with subjective health complaints in acceptors, which states that respondents with a duration of contraceptive use of more than five years tend to have a 7.82 times greater risk of experiencing subjective health complaints than respondents with a duration of contraceptive use of more than five years[18 4]. The duration of use of contraceptives is coherent with the increasing levels of hormones in hormonal contraceptives in the body of a woman. Thus, former hormonal birth control acceptors who use contraception for more than five years should be the group that feels the most premenopausal complaints, because in the body there are still residual deposits of the hormones estrogen and progesterone. The premenopausal complaints felt by the respondents of this study were mostly physical and psychological complaints, compared to somatic complaints such as hot flashes, palpitations, and sexual problems. The results of Runiari's research (2019) stated that the use of progestin-injectable contraceptives should be used for a maximum of five years because if acceptors who use long-term progestin-injectable contraceptives for more than five years can experience partial estrogen deficiency, this can have a detrimental effect, namely a decrease in bone density so that it can increase the risk of osteoporosis during menopause.[15]

The results also showed that the use of contraceptives both hormonal and non-hormonal used less than or equal to five years and more than five years, stated that they experienced premenopausal complaints, and the rest only experienced mild complaints. This fact is in line with Sari's research (2021) entitled The relationship between the long history of hormonal contraceptive use and climacteric symptoms in women of menopausal age, proving that women with an average age of 50 years who use hormonal contraceptives for more than five years, will further increase complaints of climacteric symptoms[4]. This can be because almost half of the respondents of this study are still aged between 40-50 years, the age at which premenopausal complaints may still not be felt by many respondents.

A notable limitation of this study is the restricted sample size and geographic focus. With 174 premenopausal women from a single village, the results may not be fully representative of the wider premenopausal population, especially given the diverse factors influencing menopausal symptoms. This limitation could affect the generalizability of the findings to different regions, cultures, or socioeconomic backgrounds. Future research should aim to include larger and more diverse samples to address this issue.

The results of this study recommend that prospective family planning acceptors need to consider the type of contraceptive to be used, the duration of contraceptive use to the intensity of complaints that will be felt during premenopause. Family planning service providers need to conduct health education to prospective family planning acceptors that there is a relationship between the type of method and duration of contraceptive use with the intensity of complaints during premenopause. Comprehensive contraceptive counseling is an important aspect of a woman's overall health and well-being and should be addressed by every patient regardless of age.

Future studies should explore factors beyond age, education, and employment when examining pre-menopausal complaints. These factors might include lifestyle choices, diet, physical activity, mental health, and chronic health conditions. Stress at work is an important area for further research, as it could increase cortisol levels, leading to hormonal imbalances and exacerbating pre-menopausal symptoms. High-stress work environments might affect sleep, mood, and other health-related behaviors,

contributing to more severe pre-menopausal complaints. By broadening the scope of research, future studies can provide a more comprehensive understanding of the causes of pre-menopausal symptoms and guide more effective interventions, workplace policies, and management strategies.

CONCLUSION

The study suggests that contraceptive type and duration can influence pre-menopausal complaints. Progestin-only methods are associated with more pre-menopausal complaints compared to combination contraceptives, possibly due to the hormonal imbalances they cause. Likewise, long-term use of contraceptives (more than five years) tends to lead to more pre-menopausal complaints, suggesting that longer-term hormone exposure may contribute to increased symptoms. The study found that most pre-menopausal complaints were mild, with symptoms like physical and mental fatigue, and muscle and joint issues. This aligns with previous research indicating that hormonal contraceptives can lead to weight gain and decreased physical performance, potentially contributing to pre-menopausal complaints.

However, the study's limited sample size and focus on a single village limit the generalizability of the findings. Future research should include larger and more diverse samples to get a broader understanding of pre-menopausal complaints. Family planning providers should offer comprehensive contraceptive counseling, emphasizing the potential impact of contraceptive type and duration on pre-menopausal complaints. This will help women make informed choices and better manage pre-menopausal symptoms. Additionally, future studies should explore other factors contributing to pre-menopausal complaints, including work-related stress.

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