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Factors influence the severity of premenopause syndrome

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A B S T R A C T

Background: Premenopause syndrome triggers more severe physical and psychological problems and the emergence of various diseases. The limited research on the factors causing the severity of Premenopause syndrome has resulted in a lack of efforts to address the causative factors.

Purpose: This study aims to explore factors that influence the severity of premenopause syndrome.

Method: This is an analytic observational study with a cross-sectional design. Eighty-eight women aged 40-45 years were included in this study. The knowledge, attitude, age of menarche, use of hormonal contraceptives, and symptoms of premenopause syndrome observed in this study—data analysis using chi-square and multiple logistic regression.

Results: Factors that influence the severity of premenopause syndrome are knowledge, attitude, age of menarche, and use of hormonal contraceptives ($p<0.001$). Knowledge is the most dominant factor (Exp(B) = 25.983; $p<0.05$)

Conclusion: These results underscore the importance of increasing the knowledge of premenopause women to reduce the severity.

INTRODUCTION

Premenopause is a phase transition (5-10 years) before menopause. This period is also known as the climacteric period. In this period, the decline rate of the hormones estrogen and progesterone results in changes in physical and psychological significance, irregular menstrual cycles, prolonged and relatively more menstrual bleeding, hot flushes, decreased sexual desire, anxiety, and problems sleeping.[1] The number of women entering menopause worldwide is estimated to reach 1.2 billion in 2030.[2] In Indonesia, the number of women entering menopause is expected to reach 14 million or about 7.4% of the population in 2022, with the average age of menopause being around 48 years. Premenopause syndrome triggers more severe physical and psychological problems and the emergence of various diseases such as heart and blood vessels, diabetes mellitus, and cancer.[3–6] The limited research on the factors causing the severity of premenopause syndrome has resulted in a lack of efforts to address the causative factors. Handling is more focused on the symptoms that appear.[7–9]

Research on factors influencing the severity of premenopause syndrome on the variables of knowledge, attitude, age of menarche, and use of hormonal contraception is still limited. Research that has been conducted, including lifestyles, such as alcohol consumption, use of hormone replacement therapy, and diet, does not answer the causes in developing countries, including Indonesia.[10–12] Several previous studies that explored knowledge and attitudes focused more on readiness to face menopause, early menopause, degenerative diseases, hormone replacement therapy management, and lifestyle.[6,13–19] In Indonesia, hormonal contraception is the most widely used choice. Several studies reported that a protocol is needed to be followed in the use of hormonal contraception at the age of >40 years.[5,6,15,20] The age of menarche is thought to be related to premenopause syndrome. The earlier the age of menarche, the sooner the symptoms of premenopause syndrome occur.[21]

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The importance of knowledge about premenopause for women is considerable, considering the lots of women who experience anxiety and fear face phase. This is because the presumption that menopause is a door to old age is not desired.[22] At the local level, many women visit public health centers with complaints related to physical and psychological premenopause.[23] In a social and psychological context, stigma against menopause is a time of sadness and loss of beauty. This matter can cause psychological trauma and depression in women who experience premenopause.[24,25] This study aims to explore factors that influence the severity of premenopause syndrome.

METHOD

Study Design

This is an observational study with a cross-sectional design.[26]

Settings and Respondents

Data was collected from November 2023 to June 2024 in Public Health Center Delitua, Deli Serdang Regency. The population of this study were premenopause women aged 40-45 years in the Delitua Health Center Working Area. The sample selection in this research used the accidental sampling method on 88 women aged 40-45 years. Inclusion criteria are willingness to be a respondent, not pregnant, and never having had a total hysterectomy. Meanwhile, the exclusion criteria are withdrawn as a participant during the study period.

The Variable, Instrument, and Measurement

The independent variables are knowledge, attitudes, age of menarche, and use of hormonal contraception. At the same time, the dependent variable is the severity of premenopause syndrome. The research instrument used a questionnaire with knowledge and attitude and a modified menopause index to assess premenopause syndrome symptoms, which was validated and reliable. Data collection was carried out through direct interviews with respondents.[26–29]

Data Analysis

Data analysis using chi-square and multiple logistic regression to determine the factors that influence the severity of premenopause syndrome and the dominant factors.[26]

Ethical Consideration

All participants received oral and written information about the study. Participants were informed about the guarantees of confidentiality, and they signed a written consent form before each interview. This study received approval from the ethical committee of the Medistra Health Institute Lubuk Pakam, number 019.D/KEP-MLP/VII/2024.

RESULTS

All respondents in this study were aged 40 years and above. Most respondents' education was high school, and they worked as housewives. 76.1% of respondents in this study first menstruated at the age of <12 years, most respondents in this study did not use hormonal contraception. The results of measuring attitude variables showed that most were in the negative category, while the results measuring the severity of menopause syndrome were in the severe category (Table 1).

Based on Table 2, more than half of women who have less knowledge, negative attitudes, menarche at the age of less than 12 years, and do not use hormonal contraception experience severe levels of menopausal syndrome. There is a relationship between knowledge, attitudes, age of menarche, and use of hormonal contraception with the severity of premenopause syndrome (p<0.0001). Based on Table 3, the variables Knowledge, attitude, age of menarche, and use of hormonal contraception influence the severity of premenopause syndrome, and the most dominant variable influencing the severity of premenopause syndrome is knowledge.

Table 1. Characteristics of Respondents

Characteristics	Result
Age, yo	
40-41	30 (34.1%)
42-43	20 (22.7%)
44-45	38 (43.2%)
Education	
Not completed in primary school	10 (11.4%)
Finished elementary school	7 (8.0%)
Finished middle school	8 (9.1%)
Finished high school	57 (64.8%)
Collage	6 (6.8%)
Employment	
Farmer	6 (6.8%)
Housewife	69 (78.4%)
Self-employed	8 (9.1%)
Civil servants	5 (5.7%)
Attitude Category	
Negative	50 (56.8%)
Positive	38 (43.2%)
Menarche	
<12 Years	67 (76.1%)
12-16 Years	21 (23.9%)
Use of Hormonal Contraception	
No	56 (63.6%)
Yes	32 (36.4%)
Premenopause Syndrome Level	
Severe	58 (65.9%)
Mild	30 (34.1%)

Table 2. Factors Influence the Severity of Premenopause Syndrome

Variable	Syndrome Premenopause		p-value
	Severe	Mild	
Knowledge			
Not good	56 (63.6%)	15 (17.0%)	0.0001
Good	2 (2.3%)	15 (17.0%)	
Attitude			
Negative	42 (47.7%)	8 (9.1%)	0.0001
Positive	16 (18.2%)	22 (25.0%)	
Menarche			
<12 Years	55 (62.5%)	12 (13.6%)	0.0001
12-16 Years	3 (3.4%)	18 (20.5%)	
Use of Hormonal Contraception			
No	45 (51.1%)	11 (12.5%)	0.0001
Yes	13 (14.8%)	19 (21.6%)	

DISCUSSION

This study highlights four variables that influence the severity of premenopausal syndrome: knowledge, attitude, age of menarche, and use of hormonal contraception. This study emphasizes the knowledge variable as the most dominant factor influencing the severity of premenopausal syndrome. In this study, the knowledge variables measured were understanding premenopause, physical and psychological changes, signs and symptoms, risk of degenerative diseases, how to reduce symptoms, and healthy lifestyles during premenopause. Knowledge plays a role in an individual's readiness to face menopause. Educational programs about premenopause can increase self-efficacy and self-acceptance of menopause. Adequate education provides a strong foundation for a deep understanding of physical and psychological changes during menopause and facilitates the development of analytical skills and mental readiness to face them.[30]

A study in Canada found that most premenopausal women had poor knowledge about health.[31] Another study showed that a lack of knowledge about when menstruation stops and efforts that can be made to reduce menopausal symptoms lead to low awareness of premenopausal syndrome.[18] Previous studies found that women who had average knowledge and attitudes showed average premenopausal syndrome awareness behaviors as well.[16] Comprehensive knowledge of premenopausal syndrome also has an impact on positive attitudes and responsiveness to the challenges of menopause. Studies show that women with better knowledge of sound tend to have more positive perceptions of menopause and experience better quality of life during the transition.[22] Conversely, a lack of knowledge can lead to perceptions of potential negative impacts on workability and psychological well-being during menopause.[32] Increasing knowledge helps individuals better prepare for the symptoms and changes that occur in themselves and increases efforts to prevent menopause syndrome, reducing the likelihood of experiencing significant symptoms.[33]

The findings of this study emphasize the influence of attitude on the severity of premenopausal syndrome. Mild premenopausal syndrome symptoms support the tendency of respondents to be positive. This positive attitude is essential because it reflects an individual's mental readiness to face physical and psychological changes and events during premenopause and menopause.[34,35] This finding is to the theory that attitudes result from the influence of an individual's response to experiences related to the situation.[36] However, this study also highlights that some premenopausal mothers show negative attitudes that can be influenced by low levels of knowledge and a lack of motivation to seek information about menopause.[15] Many of them do not participate in educational programs or health services available at health centers, so a lack of understanding can worsen their perception of the changes that occur during premenopause.

Changes in attitudes can be influenced by education and information obtained from various sources, such as mass media, electronic media, and health workers.[37] A study in Cambodia found that most premenopausal women had negative attitudes toward menopause. They consider menopause as a medical problem and an unpleasant time.[19] Several studies have found that negative attitudes towards premenopausal syndrome give rise to behaviors that do not support the handling of premenopausal syndrome problems.[15–18] Positive attitudes towards menopause can help reduce anxiety experienced by women during premenopause and increase readiness to face this transition more calmly and be ready to face premenopausal syndrome.[38]

The results of this study emphasize that most women with menarche age <12 years, experience severe premenopausal syndrome. Age of menarche or first menstruation is also known to affect the age of menopause, where earlier menarche tends to be associated with earlier menopause, and vice versa.[39] This suggests that these factors are interrelated in influencing the menopause transition in women, potentially affecting their experience and health as they enter this phase of life.[40] A review concluded that women who experience early menarche are at risk of developing non-alcoholic fatty liver disease during premenopause.[41] A study in the United Kingdom, Scandinavia, Australia, and Japan found that women who experience early menarche tend to experience premenopausal syndrome, early menopause, and chronic diseases.[42]-

Table 3. Dominant Factors Influence the Severity of Premenopause

Variable	*B*	*S.E.*	*Wald*	*Sig*	*Exp(B)*	*95% CI*
Knowledge	3.257	1.076	9.167	0.002	25.983	3.154-214.028
Attitude	1.994	0.758	6.910	0.009	7.343	1.661-32.469
Menarche	2.720	0.902	9.099	0.003	15.174	2.592-88.826
Use of Hormonal Contraception	1.946	0.792	6.036	0.014	6.998	1.482-33.047

Study in Norwegian also concluded that although the results were mixed, early menarche had a risk for early-menopause, breast cancer, and endometrial cancer due to exposure to estrogen and progestogen and the risk of chronic diseases.[43] The findings of this study concluded that special attention is needed for women who experience early menarche against the risk of premenopause syndrome, cancer, and chronic diseases.

This study found that women who did not use hormonal contraception tended to experience severe premenopause syndrome. The use of hormonal contraception was associated with an increased age of menopause. The occurrence of severe premenopause syndrome in women who did not use hormonal contraception was associated with age so that at the age of 40-45 years, they were in the premenopause period, followed by symptoms of premenopause syndrome compared to those who used hormonal contraception who were more likely to experience menopause at an older age. Hormonal contraception contains progesterone and estrogen, which affect the pituitary gland through the hypothalamus and inhibit follicle development and the ovulation process so the menstrual cycle can last longer.[44] Contraceptive factors, especially hormonal contraception, are also driving factors that can slow down the menopause process by inhibiting.[45] This shows the importance of considering the use of contraception in the context of healthy reproductive management in premenopause women.[46]

The use of hormonal contraception slows down the menopause process by suppressing ovarian function, which causes women who use this contraception to experience menopause at an older age.[47,48] Chronic diseases such as diabetes, cancer, or diseases that require long-term maintenance can affect the age of menopause, either accelerating or slowing it down, depending on the type and effect of the disease on the body.[6,49,50] A study in Bangladesh found that premenopause women who used hormonal contraception were at risk of developing heart and blood vessel disease.[5] The results of this study confirm that special attention is needed for women aged >40 years who use contraception, even though they experience mild premenopause syndrome. However, the use of hormonal contraception at that age needs attention, considering the risk of cardiovascular disease, cancer, and liver disease.

CONCLUSIONS AND RECOMMENDATION

Factors that influence the severity of premenopause syndrome are knowledge, attitude, age of menarche, and use of hormonal contraception. Knowledge is the most dominant factor influencing the severity of premenopause syndrome. Recommendations for further research are to create effective methods or models to improve premenopause women's knowledge and attitudes. Policymakers can use research findings as considerations in creating health promotion programs to improve the knowledge and attitudes of premenopause women.

REFERENCES

1. Christiane Northrup MD. *The Wisdom of Menopause: Creating Physical and Emotional Health During the Change*. Hay House; 2012.
2. World Health Organization. Menopause. Published 2022. https://www.who.int/news-room/fact-sheets/detail/menopause
3. Li Z, Cheng J, Wang L, Yan P, Liu X, Zhao D. Analysis of high risk factors and characteristics of coronary artery in premenopausal women with coronary artery disease. *Int J Med Exp Med*. 2015;8(9):16488-16495.
4. Kaminska MS, Schneider-Matyka D, Rachubinska K, Pancsyk M, Grochans E, Cybulska AM. Menopause Predisposes Women to Increased Risk of Cardiovascular Disease. *J Clin Med*. 2023;12:1-18. doi:doi.org/10.3390/jcm12227058
5. Hossain MG, Talukdar AI, Al-mahmud A, Zahid A, Mallik A, Nur RM. Oral Contraceptive Pill Use and Heart Disease Risk among Premenopausal Women. *Saudi J Biomed Res*. 2022;7(10):261-265. doi:10.36348/sjbr.2022.v07i10.001
6. Bijl MF Van der, Sunamura M, Hoeve N ter, Schreuder MM, Lenzen MJ, Lennep JER van. Effect of menstruation on the onset of acute coronary syndrome in premenopausal women: A case series. *Women's Heal*. 2023;37. doi:https://doi.org/10.1016/j.crwh.2023.e00486
7. Duralde ER, Sobel TH, Manson JE. Management of perimenopausal and menopausal symptoms. *BMJ*. 2023;382. doi:10.1136/bmj-2022-072612
8. Gao L, Faller J, Majmudar I, Nguyen P, Moodie M. Are interventions to improve cardiovascular disease risk factors in premenopausal women

effective ? A systematic review and meta- - analysis. *BMJ Open*. 2021;11:1-11. doi:10.1136/bmjopen-2020-042103

9. Alifah UN, Putri NR, Nugraheni A. Terapi Komplementer untuk Meningkatkan Kualitas Hidup Wanita Premenopause. *J Midwifery Sci Basic Appl Res*. 2023;5(1):8-16. https://doi.org/10.31983/jomisbar.v5i1.9740
10. Wang X, Wang L, Di J, Zhang X, Zhao G. Prevalence and risk factors for menopausal symptoms in middle-aged Chinese women: a community-based cross-sectional study. *J North Am Menopause Soc*. 2021;28(11):1271-1278. doi:10.1097/GME.0000000000001850
11. Li Z, Guo J ping, Huang L. Perimenopausal syndrome and hypertension during perimenopause in South China : prevalence, relationships and risk factors. *BMC Public Health*. 2024;24(215):1-17. doi:10.1186/s12905-024-03056-5
12. Li R xia, Ma M, Xiao X rong, Xu Y, Chen X ying, Li B. Perimenopausal syndrome and mood disorders in perimenopause: prevalence, severity, relationships, and risk factors. *Medicine (Baltimore)*. 2016;95(32):1-11. doi:doi: 10.1097/MD.0000000000004466.
13. Adeliani SR, Susilawati, Utami VW, Yuliasari D. The Relationship of Knowledge and Attitudes in Dealing With Menopause in Women Aged 40-45 Years. *J Kebidanan Malahayati*. 2023;9((2) April):312-321. doi:10.33024/jkm.v9i2.7827
14. Alshogran OY, Mahmoud FM, Alkhatatbeh MJ. Knowledge and awareness toward menopause and hormone therapy among premenopausal women in Jordan. *Climacteric*. 2021;24(2):1-8. doi:10.1080/13697137.2020.1813099
15. Tariq B, Phillips S, Biswakarma R, Talaulikar V, Harper JC. Women's Knowledge and Attitudes to the Menopause: A Comparison of Women over 40 Who Were in the Perimenopause, Post Menopause and Those Not in the Peri or Post Menopause. *BMC Womens Health*. 2023;23(1):1-16. doi:10.1186/s12905-023-02424-x
16. Dandannavar VS, Doe S, Kour H, Angolkar M. Knowledge, Attitude, Symptoms, and Management Practices among Middle- aged Menopausal Women : A Cross-sectional Study. *J Clin Diagnostic Res*. 2023;17(10):6-11. doi:10.7860/JCDR/2023/63375.18553
17. Ayers B, Forshaw M, Hunter MS. The impact of attitudes towards the menopause on women ' s symptom experience : A systematic review. *Maturitas*. 2010;65:28-36. doi:10.1016/j.maturitas.2009.10.016
18. Han M, Cheng Y, Ige GA, Ige OO. Attitude and knowledge of women between 45 and 65 years on menopause syndrome at the university college hospital, Ibadan, Nigeria. *JSTOR*. 2022;26(5):57-62. doi:10.29063/ajrh2022/v26i5.6
19. Thapa R, Yang Y. Attitude Toward and Associating Factors of Menopause : A Study on Cambodian Women. *SAGE Open*. 2022;1(15):1-15. doi:10.1177/21582440221129256
20. Grandi G, Vinci P Di, Sgandurra A, Feliciello L, Monari F, Facchinetti F. Contraception During Perimenopause : Practical Guidance. *Int J Women's Heal*. 2022;14(July):913-929. doi:10.2147/IJWH.S288070
21. Duzgun AA, Kok G, Sahin S, Guvenc G. Assessment of depression and sexual quality of life in postmenopausal women. *Perspect Psychiatr Care*. 2022;58(4):2029-2036. doi:https://doi.org/10.1111/ppc.13024
22. Harper JC, Phillips S, Biswakarma, et al. An online survey of perimenopausal women to determine their attitudes and knowledge of menopause. *Women's Heal*. 2022;18(1):1-18. doi:10.1177/17455057221106890
23. Eyre H, Alba PR, Gibson CJ, et al. Bridging information gaps in menopause status classification through natural language processing. *JAMIA opens*. 2024;7(1):1-8. doi:10.1093/jamiaopen/ooae013
24. Whiley LA, Wright A, Stutterheim SE, Grandy G. A part of being a woman, really": Menopause at work as "dirty" femininity. *Gender, Work Organ*. 2023;30(3):3-1157. doi:10.1111/gwao.12946
25. Herbert D, Bell RJ, Young K, Brown H, Coles JY, Davis SR. Australian women's understanding of menopause and its consequences: a qualitative study. *Climacteric*. 2020;24(6):1-7. doi:10.1080/13697137.2020.1791072
26. Sugiyono. *Metode Penelitian Kuantitatif Kualitatif Dan R&D*. Alfabeta; 2021.
27. Maki PM, Kornstein SG, Joffe H, et al. Guidelines for the evaluation and treatment of perimenopausal depression: summary and recommendations. *J North Am Menopause Soc*. 2018;25(10):1069-1085. doi:10.1097/GME.0000000000001174
28. Fang Y, Liu F, Zhang X, et al. Mapping global prevalence of menopausal symptoms among middle-aged women : a systematic review and meta-analysis. *BMC Public Health*. 2024;24(1767):1-22. doi:doi.org/10.1186/s12889-024-19280-5
29. Hirschberg AL, Tani E, Brismar K, Lundström E. Effects of drospirenone and norethisterone acetate combined with estradiol on mammographic density and proliferation of breast epithelial cells—A prospective randomized trial. *Maturitas*. 2019;126(April):18-24. doi:10.1016/j.maturitas.2019.04.205
30. Munn C, Vaughan L, Talaulikar V, Davies MC, Harper JC. Menopause knowledge and education

in women under 40: Results from an online survey. *Women's Heal*. 2022;18(Januari-Desember). doi:10.1177/17455057221139660

31. Szakun N, Liva S, Bodner ME, Wolff A, Kim M yeon, Cote AT. Prevalence of Sex-Speci fi c Cardiovascular Disease Risk Factors , Medical Risk , and Engagement in Health-Promoting Behaviours in Premenopausal Females. *CJC Open*. 2024;6(2):301-313. doi:10.1016/j.cjco.2023.11.003
32. Sathiyaseelan A, Patangia B, Hainary P. Meaning in Life in Menopause: A Narrative Literature Review on How Menopausal Women Make Sense of Their Life? *Indian J Psychiatr Nurs*. 2024;21(1):66-79. doi:10.4103/iopn.iopn_14_24
33. Dhillon TK, Gammage KL. Understanding the relationship between body image and menopause in South Asian Canadian women. *Body Image*. 2023;46:280–293. doi:10.1016/j.bodyim.2023.06.007
34. Özkan A, Çayircioglu S, Karagöz I, Kocatürk RR, Özcan ÖO, Karahan M. Investigation of the Relationship between Eating Attitudes, Self-Esteem, Anxiety, and Depression Levels of Postmenopausal Women. *J Neurobehav Sci*. 2021;8(3):233-239. doi:10.4103/jnbs.jnbs_40_21
35. Malaijerdi R, Amini L, Haghani H, Shahr HSA. Investigating the relationship between menopausal women's health anxiety and sexual performance and attitude towards menopause. *J Educ Health Promot*. 2023;12(1):1-7. doi:DOI: 10.4103/jehp.jehp_925_22
36. Wangui Ndung'u M. Influence of Personality Traits. *Publ J*. 2024;12(2):52-54. doi:https://doi.org/10.5281/zenodo.11082342
37. Edwards AL, Shaw PA, Halton CC, et al. It just makes me feel a little less alone. *J North Am Menopause Soc*. 2021;28(12):1374-1384. doi:10.1097/gme.0000000000001855
38. Refaei M, Mardanpour S, Masoumi SZ, Parsa P. Women's experiences in the transition to menopause: a qualitative research. *BMC Womens Health*. 2022;22(1):1-8. doi:10.1186/s12905-022-01633-0
39. Chung HF, Zhu D, Kuh AJDD, et al. Age at menarche and risk of vasomotor menopausal symptoms: a pooled analysis of six studies. *BJOG An Int J Obstet Gynecol*. 2021;128((3)):603–613. doi:10.1111/1471-0528.16393
40. Lambrinoudaki I, Armeni E, Goulis D, et al. Menopause, wellbeing and health: A care pathway from the European Menopause and Andropause Society. *Maturitas*. 2022;163:1–14. doi:10.1016/j.maturitas.2022.04.008
41. Carrieri L, Osella AR, Ciccacci F, Giannelli G, Scavo MP. Premenopausal Syndrome and NAFLD : A New Approach Based on Gender Medicine. *Biomedicines*. 2022;10:1-14. doi://doi.org/10.3390/ biomedicines10051184 Academic
42. Mishra GD, Pandeya N, Dobson AJ, et al. Early menarche , nulliparity and the risk for premature and early natural menopause. *Hum Reprod*. 2017;32(3):679-686. doi:10.1093/humrep/dew350
43. Bjelland EK, Hofvind S, Byberg L, Eskild A. The relation of age at menarche with age at natural menopause : a population study of 336 788 women in Norway. *Hum Reprod*. 2018;33(6):1149-1157. doi:10.1093/humrep/dey078
44. Hampson E. A brief guide to the menstrual cycle and oral contraceptive use for researchers in behavioral endocrinology. *Horm Behav*. 2020;119:1-8. doi:10.1016/j.yhbeh.2019.104655
45. Gérard C, Arnal JF, Jost M, et al. Profile of estetrol, a promising native estrogen for oral contraception and the relief of climacteric symptoms of menopause. *Expert Rev Clin Pharmacol*. 2022;15(2):121–137. doi:10.1080/17512433.2022.2054413
46. Ahinkorah BO, Jr JEH, Seidu AA, et al. Female adolescents' reproductive health decision-making capacity and contraceptive use in sub-Saharan Africa: What does the future hold? Oladimeji O, ed. *PLoS One*. 2020;15(10):1-20. doi:10.1371/journal.pone.0235601
47. Casto K V, Jordan T, Petersen N. Hormone-based models for comparing menstrual cycle and hormonal contraceptive effects on human resting-state functional connectivity. *Front Neuroendocrinol*. 2022;67(11):1-34. doi:10.1016/j.yfrne.2022.101036
48. Fitri SR, Manurung N. The relationship of hormonal contraception use with Menopause age in environment v of new kelurahan Bambu field of winning field. *Sci Midwifery*. 2020;8(2):82-86. https://midwifery.iocspublisher.org/index.php/midwifery/article/view/337
49. Davis SR, Baber RJ. Treating menopause — MHT and beyond. *Nat Rev Endocrinol*. 2022;18(8):490–502. doi:10.1038/s41574-022-00685-4
50. Darmastuti AS, Kasiati K, Cahya Laksana MA, Dewanti L. Pengaruh Strategi Konseling Berimbang Terhadap Peningkatan Pengetahuan dan Sikap tentang KB Pada Ibu Hamil. *Indones Midwifery Heal Sci J*. 2021;4(2):150-159. doi:10.20473/imhsj.v4i2.2020.150-159