The Mental Health and Perimenopause Syndrome and Health Information Accessibility among Elderly in Semarang Municipality, Indonesia

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Abstract

Introduction: Menopause is a period of menstrual cessation that occurs in women aged 48 to 55 years. Menopause is the cessation of ovulation caused by the absence of an oocyte response to the ovaries (ovaries) characterized by a decrease in estrogen and progesterone. Menopausal women or even peri-menopause become anxious about their partner, namely husband. Menopausal or perimenopausal women will become insecure if there is a change in the attitude of the husband toward his wife after entering this period. There needs to be a model to prepare menopausal women to face the detrimental effects of the reduction of estrogen both in terms of physical and psychological changes. The objective of this study is to identify and to explain the symptom of menopause and to explore their internet accessibility in searching for health information.

Method**:** The study was conducted to identify the characteristics of menopausal women aged 55 years old and over. This study took place in 2 villages, namely Sampangan and Bendan Ngisor, Semarang City. This study is an explanatory research with a cross-sectional study design. The data was collected in 2018 and by using simple random sampling, there were 191 respondents involved in this study. This study examines the socio-demographic characteristic, Saliva Alpha-Amilase (SAA), Menopause Rating Scale (MRS) and the internet accessibility for health information.

Result**:** Changes due to menopause can occur in all aspects of individual life ranging from the physical, psychological and social aspects. The average age of menopause women was 61.73+6.36 years old. The average score of SAA was 29.05±35.06. The most important perimenopause syndromes were discomfort in joints and muscles, physical and mental fatigue, easy to get angry and sleep problem. Additionally, the internet accessibility rate of women to search for health information was very low.

Keywords: *perimenopause, internet literacy, elderly*

1. Introduction

Menopause is defined as the permanent cessation of menstruation due to loss of ovarian follicular activity. This happens when there is successive amenorrhea, where there are no pathological conditions or psychological abnormalities for 12 months (Sherman, 2005). Menopause is a period of menstruation that occurs in women aged 45 to 55 years. This period is very complex for women because it is related to their physical and psychological conditions. Perimenopause is a phase in the aging process, which is when women experience a transition between the reproductive period and the non-reproductive period. In other words, women will experience menopause in this phase.

Perimenopause involves three stages: premenopause (regular menstrual cycle with ≥12 menstruation during the last 12 months), menopausal transition (multiple menstruations but <12 during the last 12 months), and early menopause (no menstruation for the past 12 months). During perimenopause, women may experience symptoms such as hot flashes and night sweats, insomnia, vaginal dryness, mood disorders, and so on. Although most symptoms are not life-threatening, they may actually have a negative impact on the quality of life as well as physical and mental health of perimenopausal women (Li et al, 2016).

According to projections carried out by the United Nations (UN) looking at Indonesia's absolute population in the future, this country will have a population of more than 270 million by 2025, more than

285 million in 2035 and 290 million in 2045. However, only after 2050 will the Indonesian population decline.

On the other hand, in 2020, the number of elderly is predicted to be 10 percent of the total population. Consequently, Indonesia will become a country with an aging population structure. Thus, the number of women entering the menopausal age will subsequently increase (Central Bereau of Statistic (BPS), 2018). Each year, 25 million women are expected to enter the menopausal period worldwide. Globally, the number of women aged 50 years would increase, from 500 million to more than 1 billion in 2030. According to WHO, the number of menopausal women in Asia will jump from 107 million in 2025 (World Health Organization, 2009).

Popular medical literature assumes that the transitional process to menopause is stressful. A recent study of depressed mood during the menopausal transition links negative life events and factors with menopausal transition. Nowadays, no studies have focused on the effect of depressed mood that women endure with during this transition phase. To elaborate, the menopausal transition is a period of changes in menstrual patterns, fluctuations in hormone levels, and symptoms that interfere with some women. Research by Saranya and Hemavathy (2015) found that there was a significant relationship between stress levels in menopausal women and demographic variables such as type of work etc. Menopause symptoms have an important impact on daily activities both in social and sexual life of menopausal women. In addition to the physiological changes seen in the menopausal years, middle-age-women often go through social transitions with increased stress levels which may require additional coping mechanisms (Saranya & Hemavathy, 2015). Even though there are many studies focused on the epidemiology of perimenopausal syndrome, there is an inconsistency when it comes to relationship between perimenopause syndrome and depression. Therefore, this relationship between perimenopausal syndrome and depression needs to be further clarified (Li et al, 2016). For this reason, this study endeavors to identify and to explain the symptom of menopause and to explore menopausal women's usage of internet to search for health information.

2. Objectives

The objective of this study is to identify and to explain the symptom of menopause and to explore Menopausal women's usage of internet to search for health information.

3. Materials and Methods

The study was conducted to identify the characteristics of menopausal women aged 50 years and older who own and actively use android portable phone. The respondents were selected by purposive sampling due to the limited amount of respondent who satisfies the inclusive criteria. This study took place in 2 villages, namely Sampangan and Bendan Ngisor, Semarang City. This study is an explanatory research with a cross-sectional study design. The data was collected in 2018 and by using simple random sampling, there were 191 respondents involved in this study. This study examines the socio-demographic characteristic, stress level, Menopause Rating Scale (MRS) and the accessibility of health information. The stress level was measured by using salivary alpha-amylase (Petrakova et al, 2015). Salivary amylase levels were estimated with COCORO METER salivary amylase monitor (Yamaguchi et al, 2004).

The MRS method examines the experience menopausal syndrome in general, physiological and psychological (Khatoon, Husain, Husain, & Hussain, 2018). Menopausal syndrome score was categorized into 6 categories: no syndrome, few, mild, moderate, severe and very severe (L A J Heinemann, Rosemeier, Potthoff, & Behre, 2000; Lothar A J Heinemann, Potthoff, & Schneider, 2003).

While the accessibility of health information by using internet was measured by using two questions as following "Do you search health information by internet from your android?" (Answer Yes or No) and "Have you experience search menopausal syndrome in internet?" (Answer Yes or No). The data was collected by interviewing respondent based on the structured set of questions. The frequency

distribution was done to describe all of variables. Data analysis implemented the descriptive statistics. The frequency distribution, average and standard deviation were employed to describe the variation of MRS result.

4. Results and Discussion

This study found that the average age of menopause women was 61.73+6.36 years old accounting for of 40.8% of the respondents. Kakkar et al, (2007) classified menopause women into 3 categories based on their age namely perimenopausal (35-45 years old), early menupause / menopause (46-51 years old) and postmenopausal (52-76 years old). To specify, the average age of the respondents involved belongs to the post-menopausal period (Kakkar, Kaur, Chopra, Kaur, & Kaur, 2007). It was reported that more than 80% of women above 45 years old experience these symptoms during transition period to menopause (Masjoudi, Amjadi, & Leyli, 2017).

There were 35.6% of interviewees with high school and college education while only 7% of them with below middle school education. Subjective symptom during the perimenopause period are influenced by the level of education, psychosocial factors, life habits, and family's economic status. Urban communities that have a level of education and knowledge of menopause and a relatively higher socio-economic level tend to be more complaints about perimenopause compared to rural communities (Suheimi, 2006).

Regarding stress level, it was measured by implementing the alpha-amylase. This study stated that the average was 29.05 with the standard deviation as 35.06. Hence, based on the SAA score, the respondents were not in stress condition (Yamaguchi et al, 2004). However, if we looked at the standard deviation as 35.06, considering the score as high as 64.11, it means that some of respondents underwent post psychological stress (Yamaguchi et al, 2004).

In the Table 1, almost all of symptoms were experienced from few to highly severe and more than 30% of elderly stated that they have these symptoms. The most common symptoms were discomfort in joints and muscles (88.0%), follows by physical and mental fatigue (75.9), easy to get angry (51.3%) and sleep problem (45.5%). It was found that syndromes that menopausal women experience as severe to highly severe in an ascending order were physical and mental fatigue (severe as 10.5%), easy to get angry (severe as 9.4%), Sleep symptom (highly severe as 7.9%). A research in Pakistani women resulted that the most commonly reported symptoms were hot flushes (90%) and sleep disturbances (89%) followed by palpitations (42%) whereas sexual problems (18%) and bladder symptoms (12%) were reported least frequently (Mazhar & Rasheed, 2009). During this transition, there will be various symptoms related to the menstrual cycle with the main manifestations of irregular menstruation accompanied with an increase in FSH levels to exceed 25 IU / L (Suheimi, 2006). These differences may be the result of physical and mental stress, availability of support and compliance mechanisms, socio-economic factors, cultural issues and even instrumental and methodological issues (Masjoudi et al, 2017; Suheimi, 2006).

The physiological syndrome were also expereinced from few to highly severe. There were more than 40% of respondents have physiological syndrome. The most leading symptoms were feeling paint (very severe as 7.9%), burning sensation and sweating at night (very severe as 7.9%), and feeling weak in physical and mental (severe as 11.5%). Regarding the psychological syndrome, there were more than 30% respondents undergo the psychological syndromes. The most important feeling are feeling of fear, anxiety and misfortune (very severe as 6.3%); and followed by having visual impairment (severe as 4.2%).

Table 1 Perimenopause syndrome using MRS

Syndrome	No Syndrome (%)	Mild %	Moderate %	Severe %	very Severe %
Hot flushes, sweating	62.8	23.0	7.9	4.7	1.6
Discomfort in the heart (unusual awareness of heart beat, heart skipping, heart racing, tightness)	58.6	17.8	16.8	4.7	2.1
Sleep problem	54.5	14.7	14.1	8.9	7.9
Feeling depressed	56.0	23.0	12.0	6.3	2.6
Easy to get angry (feeling nervous, inner tension, feeling aggressive)	48.7	24.1	14.7	9.4	3.1
Anxiety (inner restlessness, feeling 'panicky')	46.1	32.5	15.7	3.7	2.1
Physical and mental fatigue	24.1	29.3	31.9	10.5	4.2
Problems related to sexual relations	68.6	15.2	7.3	6.8	2.1
Uterine and urinary tract related problems (difficulty in urinating, increased need to urinate, bladder incontinence)	70.7	14.7	5.8	4.7	4.2
Vaginal dryness (sensation of dryness or burning in the vagina, difficulty with intercourse)	77.5	8.4	5.2	5.8	3.1
Discomfort in joints and muscles (pain in the joints, rheumatoid complaints)	22.0	17.8	28.3	14.1	18.8

Oxidative stress is also involved in the pathogenesis of menopausal symptoms, such as vasomotor disturbances. These disturbances include hot flashes or night sweats. Hot flashes is defined as a sudden feeling of warmth usually over the face, neck, and chest. During a hot flash, the metabolic rate temporarily increases, which often results in sweating, panic, and irritability (Freedman, 1998; Kroneneberg, 1990). Throughout menopause, there are repeated episodes of such vasomotor disturbances, which results in a prolonged increase of the metabolic rate. This augmentation has been shown to contribute to the formation of oxidative stress by placing a hindrance on antioxidants and their function in neutralizing ROS (Kroneneberg, 1990).

Concerning the knowledge and the information access from the internet, it was found that the average score of perimenopause knowledge was 6.62 $\pm$ 1.59 with the maximum score as 11. This score depicted that the knowledge of elderly women was quite low. However, the low score does not necessarily mean that they do not acknowledge the symptoms. They might ignore the usual symptoms. As a qualitative research in Kenya found that the majority of interviewed women had no idea what the term perimenopause was even they experienced the symptoms. It can be said that only 16% percent of participants seemed to have prior knowledge of the term 'perimenopause' and their sources are the doctors whom they visited, church fellowships and their friends. The lack of awareness in perimenopause phase was also reported when the focus group discussions were conducted (Olubandwa, 2014). If women enter their old age with a proper set of knowledge about menopause process, they can be better prepared for all possibilities accompanied by the period (Suheimi, 2006).

Table 2 Physiologies syndrome

Syndrome	No syndrome (%)	Mild %	Moderate %	severe %	very Severe %
Having indigestion, flatulence, nausea and frequent exhaustion	57.6	17.8	14.1	6.8	3.7
Experiencing pain that can be reduced	45.0	23.6	14.1	9.4	7.9
Experiencing ringing in the ears, bells, sighing, ringing	54.5	18.3	15.7	7.9	3.7
Have a feeling of fear, anxiety and misfortune	56.0	24.1	14.1	3.7	2.1
Having visual impairment	39.8	27.8	19.9	7.3	5.2
Feeling weak in physical and mental	24.1	34.0	25.7	11.5	4.7
Having skin problems, changing nails becomes soft, easily cracked or broken	48.7	32.5	13.1	4.2	1.6
Feel the sensation of electric shock under the skin and head	57.6	17.8	14.1	6.8	3.7
Experiencing a burning sensation and sweating at night	45.0	23.6	14.1	9.4	7.9
Having indigestion, flatulence, nausea and frequent exhaustion	73.3	15.7	7.9	2.1	1.1
Experiencing pain that can be reduced	74.4	15.2	5.8	1.6	3.1
Experiencing ringing in the ears, bells, sighing, ringing	31.9	37.7	22.0	6.8	1.6
Have a feeling of fear, anxiety and misfortune	44.5	23.0	16.8	9.4	6.3
Having visual impairment	56.0	20.9	15.2	3.7	4.2
Submission in physical and mental energy	63.9	15.2	13.1	4.2	3.7
Having skin problems, changing nails becomes soft, easily cracked or broken	59.7	20.4	13.6	3.7	2.6

Dealing with the current development of communication technology, most respondents accounting for 78.0% were able to search for health information on their gadgets with the internet connection. However, there were less than half of the respondents accounting for 42.9% who searched for perimenopause. It can be said that it is crucial to enhance the importance of knowledge in this group of women. To illustrate, by increasing the knowledge in health sector, it can have a better impact on behavior and mindset change which consequently serves as a tool to improve women's health status.

5. Conclusion

Changes due to menopause can occur in all aspects of individual life varied from physical, psychological to social aspects. To clarify, these changes are confusing therefore not everyone would be able to cope and to adjust themselves accordingly, which may lead to physical, mental and social problems. This study found that the most leading peri-menopause syndrome were discomfort in joints and muscles, physical and mental fatigue, easy to get angry and sleep problem. It should further elaborate methods or tools to keep the syndrome score in a low range. Not to mention that the internet usage rate to search for health information was quite low.

Treatment alternatives such as hormonal therapy, antioxidant supplementation and lifestyle modification (including exercise) should be explored for their effectiveness in treating and preventing the symptoms and sequel of menopause.

6. Acknowledgements

Firstly, we would like to give highest appreciation to the Ministry of Research Technology and Higher education and Diponegoro University for either of their financial support or administrative support for the this study. Secondly, we would like to thanks all of the respondents and community leaders in the selected research area for their willingness and kindness during the data collection. Last but not least, we would like to express our gratitude to all of enumerators who have given their highest performance in the data collection process.

7. References

Bosch, J. A., Veerman, E. C. I., de Geus, E. J., & Proctor, G. B. (2011). α-Amylase as a reliable and convenient measure of sympathetic activity: don't start salivating just yet!. *Psychoneuroendocrinology*, *36*(4), 449–453. doi:10.1016/j.psyneuen.2010.12.019

Central Bereau of Statistic (BPS). (2018). *Statistik Indonesia 2018*. Retrieved from https://www.bps.go.id/publication/2018/07/03/5a963c1ea9b0fed6497d0845/statistik-indonesia-2018.html

Freedman, R. R. (1998). Biochemical, metabolic, and vascular mechanisms in menopausal hot flashes. *Fertility and Sterility*, *70*(2), 332–337. doi :10.1016/S0015-0282(98)00137-X.

Heinemann, L. A. J., Potthoff, P., & Schneider, H. P. G. (2003). International versions of the Menopause Rating Scale (MRS). *Health and Quality of Life Outcomes*, *1*, 28. doi:10.1186/1477-7525-1-28.

Heinemann, L. A. J., Rosemeier, H.-P., Potthoff, P., & Behre, H. M. (2000). The Menopause Rating Scale (MRS): reliability of scores of menopausal complaints AU - Schneider, H. P. G. *Climacteric*, *3*(1), 59–64. doi:10.3109/13697130009167600

Kakkar, V., Kaur, D., Chopra, K., Kaur, A., & Kaur, I. P. (2007). Assessment of the variation in menopausal symptoms with age, education and working/non-working status in north-Indian sub population using menopause rating scale (MRS). *Maturitas*, *57*(3), 306–314. doi:10.1016/j.maturitas.2007.02.026

Khatoon, A., Husain, S., Husain, S., & Hussain, S. (2018). An Overview of Menopausal Symptoms Using the Menopause Rating Scale in a Tertiary Care Center. *Journal of Mid-Life Health*, *9*(3), 150–154. doi:10.4103/jmh.JMH_31_18

Kroneneberg, F. (1990). Hot Flashes: Epidemiology and Physiologya. *Annals of the New York Academy of Sciences*, *592*(1), 52–86. doi:10.1111/j.1749-6632.1990.tb30316.x

Masjoudi, M., Amjadi, M. A., & Leyli, E. K. N. (2017). Severity and Frequency of Menopausal Symptoms in Middle Aged Women, Rasht, Iran. *Journal of Clinical and Diagnostic Research : JCDR*, *11*(8), QC17-QC21. doi:10.7860/JCDR/2017/26994.10515

Mazhar, S. B., & Rasheed, S. (2009). Menopause Rating Scale (MRS), A simple tool for assessment of climacteric symptoms in Pakistani women. *Ann. Pak. Inst. Med. Sci*, *5*(3), 158–161.

Olubandwa, D. A. A. D. O. – W. A. A. –. (2014). Knowledge of Perimenopausal Phase and Symptoms Women Experienced in Njoro District, Kenya. *International Journal of Humanities and Social Science*, *4*(3), 316–321.

Petrakova, L., Doering, B. K., Vits, S., Engler, H., Rief, W., Schedlowski, M., & Grigoleit, J.-S. (2015). Psychosocial Stress Increases Salivary Alpha-Amylase Activity Independently from Plasma Noradrenaline Levels. *PloS One*, *10*(8), e0134561–e0134561. doi:10.1371/journal.pone.0134561

Suheimi. (2006). Pola Hidup untuk Meningkatkan Kualitas Wanita Menopause. *Maj Obstet Ginekol Indones*, *30*(2), 82–91.

World Health Organization. (2009). *Women and Health : Today's Evidence Tomorrow's Agenda*. Retrieved from https://apps.who.int/iris/handle/10665/44168

Yamaguchi, M., Kanemori, T., Kanemaru, M., Takai, N., Mizuno, Y., & Yoshida, H. (2004). Performance Evaluation, *Biosensors & Bioelectronics*, *20*, 491-497. doi:10.1016/j.bios.2004.02.012