

Assessment of climacteric symptoms among Filipino women ages 40 years and above seen at a tertiary hospital in Metro Manila*

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ABSTRACT

Background: The common climacteric symptoms experienced by women 40 years and above can be classified into vasomotor, physical, psychological and sexual complaints. This may be associated with sociodemographic factors. The timing of menopause is also believed to be associated with sociodemographic factors.

Objectives: To determine the prevalence and associated factors of climacteric symptoms experienced by women ages 40 years and above seen at a Tertiary Hospital in Metro Manila.

Methods: By using Modified Menopause Rating Scale questionnaire (*Rahman, et al.*), 360 Filipino women aged 40 years and above were interviewed and were asked of their sociodemographic data and presence of climacteric symptoms (divided into somatic, psychological and urogenital domain).

Results: Majority of the participants had menopause at age 51, with mean age at menopause of 48.4 ± 3.58 (SD) years. The most prevalent symptom reported was joint and muscular discomfort (65-75%) and this was more common among perimenopausal women. This was also the most common reason for absence at work of the participants. There was no significant association found between sociodemographic factors and climacteric symptoms, as well as with the timing of menopause.

Conclusions: Unlike other studies in different countries, no significant association was found on this study between sociodemographic factor and climacteric symptoms. Sociodemographic factors also did not show any significant association with the timing of menopause.

Keywords: climacteric, menopause, menopause rating scale, menopausal symptoms

INTRODUCTION

One of the turning points in a woman's life is when they reach the middle age, as it comes along with many changes not only physically, but also changes that affects the quality of their lives. Menopause is a phase in every woman's life that is inevitable and can occur either spontaneously or secondary to other conditions.¹ It is defined as complete cessation of menstruation for 12 months or more.² The average age of menopause on western countries is at 51 years.³ On the other hand, based on the latest study regarding the average age of menopause among Filipino women, (done > 20 years ago) the estimated age is at 48 years.⁴ The average life expectancy of Filipino women is 72 years-old (WHO, 2015). With those average ages of menopause, more than a third of a woman's life will be spent after menopause.³

The age of menopause is believed to be a significant factor in a woman's health because reproductive health is considered as a reflection of overall health. For that reason, women with early menopause are expected to be less healthy than those with late menopause. Due to its limited studies to prove this theory, the National Institute of Health has conducted a study entitled "The SWAN Song: Study of Women's Health Across the Nation's Recurring Themes", which aimed to assess how menopause per se and the process of the menopause transition may affect future health risks and outcomes. This study started in 1994 and it has contributed a remarkable insights regarding many determinants and interactions that predict health and also disease risk in midlife women. It was found out in this study that the major factors that influence risk include race/ethnicity, socioeconomic status and adverse life events and body mass index, particularly metabolically unhealthy obesity.

As a woman enters menopause state, ovarian hormone production eventually ceases and the nature of relationships between hormones, body size, ethnicity,

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metabolic status and cardiovascular diseases symptoms risk differ.⁵ Many symptoms can be attributed to loss of ovarian reproductive function such as physical symptoms that may be debilitating. It includes hot flushes, night sweats, urogenital atrophy, sexual dysfunction, mood changes, bone loss and metabolic changes that predispose to cardiovascular disease and diabetes.¹

REVIEW OF RELATED LITERATURE

THE PHYSICAL AND BEHAVIORAL EFFECT OF MENOPAUSE

The common climacteric symptoms experienced by menopause women can be classified into vasomotor, physical, psychological and sexual complaints. Another health issues to be addressed in the menopausal women especially those with long-term estrogen deficiency are cardiovascular changes and bone mineral content changes that would lead to osteoporosis.⁷

Women entering menopause usually experience vasomotor symptoms. Usually, in late perimenopause and first postmenopausal years, hot flushes occur in which a woman experience sudden episode of vasodilation in the face and neck lasting for 1-5 minutes followed by profuse sweating. But there are some women who still experience hot flushes and other vasomotor symptoms even after years of menopause. These symptoms are associated with the declining levels of estrogens and inhibin B, as well as increasing FSH levels. However, these can only partially explain the disturbed thermoregulation. Other symptoms include sleep disturbance, mood disorders, muscles and joint pains.¹

Another climacteric symptoms that seemingly affect the quality of life of a woman are the genitourinary symptoms. These include vaginal dryness, dyspareunia, vulvar pruritus and recurrent urogenital infections. Such symptoms are associated with vulvovaginal and urinary tract atrophy, which are due to estrogen deficiency.¹ In menopause, moisture content in the vagina is low and the pH increases (>5). The mucosa may exhibit inflammation and small petechiae.³ On the other side, unlike vasomotor symptoms such as hot flushes and night sweats, the genitourinary symptoms mentioned above which are experienced by menopause persist throughout postmenopausal years. In addition, a menopause woman cannot get away from osteoporosis due to estrogen deficiency resulting indirectly to increased bone resorption and decreased bone formation.¹ It can be noted for the first time when menstrual cycle becomes irregular in the perimenopause from 1.5 years before the menopause to 1.5 years after menopause.³

WOMEN'S AWARENESS OF MENOPAUSE

Many women enter into this phase without

having sufficient knowledge about the various symptoms they may have to deal with. That is why some women perceive menopause as a nightmare. A lot of women faces menopause with basic fears, confusion and discouragement due to lack of understanding of the physical changes in their body. They do not have the idea about the options available to prevent the debilitating complications of menopause. On the other hand, there are some communities or societies where women are well educated and have adequate knowledge about menopausal symptoms. These women are able to tolerate the complications of menopause with positive approach and with the use of appropriate treatments.

In general, women living in rural areas can complicate the menopause experience due to several reasons such as geographical isolation, lack of confidentiality and anonymity, stress from multiple roles, poverty and limited health care and support services.⁷ Easy access to health care and support system is very important in addressing the issues of women regarding menopause. Adequate information and education on menopause may help the community prepare themselves for the physical and behavioral changes in women entering the period of menopause. With sufficient knowledge regarding menopause, the attitudes and practices of women towards menopause will be positive.

FACTORS AFFECTING THE TIMING OF MENOPAUSE

Based on Berek and Novak's Gynecology (2007), the age at menopause is genetically determined and is not affected by race, socioeconomic status, age at menarche or number or prior ovulations. One factor that is consistently associated with early menopause is smoking due to its toxic effect on the ovaries. Moreover, women who are exposed to chemotherapy or radiation are also likely to have early menopause.¹⁰ On the other hand, based on the study of S. Davis *et al.* (2015), the timing of menopause is affected by a complex interplay of genetic, epigenetic, socioeconomic and lifestyle factors. In fact, approximately 50% of the interindividual variability in age at menopause is related to genetic effects. It has been found that women with mothers or other first-degree relatives were 6-12 fold more likely to also undergo early menopause.¹

Socioeconomic Status

According to the SWAN study, socioeconomic status is a factor in the early occurrence of menopause. Women of low socioeconomic status are believed to more likely experience early menopause. Moreover, increased depressive symptoms and menopausal symptoms can be associated with low socioeconomic status. The economic well being, educational background and financial security of women are related to the outcomes

and risks.⁵ This was also observed in the study of Gold (2011). The socioeconomic status was measured by the woman's educational attainment or by her husband's occupation. But it is believed that education was more strongly associated with age at natural menopause than occupation.¹¹

Parity

Increasing parity has been associated with later age at menopause, which is associated with the theory that natural menopause occurs after depletion of oocytes. This is particularly among women of higher socioeconomic status.¹¹

Physical activity

Few studies have examined the effect of exercise on age at menopause. Physical activity is associated with decreased concentrations of reproductive hormones and it also affects the frequency of ovulation. Therefore, later age at natural menopause is expected with women who are physically active compared to women who live a sedentary life.¹¹

Smoking

Berek *et. al* (2007) mentioned that factors which are toxic to the ovary often result in an earlier age of menopause and this includes smoking.¹⁰ Several studies have observed this finding and one of those was the study conducted in Norway (Mikkelsen *et. al*, 2007). A cross-sectional study was done which primarily aimed to investigate the association between early menopause and current, past active and passive smoking. The subjects included a sub-sample of 2123 postmenopausal women born in 1940-41. Study showed that early menopause, defined as menopause at age of less than 45 years, has a strong association with current smoking. Cessation of smoking for more than 10 years before menopause has significant reduction of risk of early menopause. Therefore, the study suggested that the earlier a woman quits smoking, the more protected she is from early menopause. In addition, early menopause was significantly associated with passive smoking.¹⁴

FACTORS AFFECTING THE PREVALENCE OF MENOPAUSAL SYMPTOMS

Body Mass Index

In SWAN study, it was proven that body weight is correlated to hormone levels and can be associated with the outcome experienced by the menopause women. Based on this study, higher body mass index (BMI) is associated with worse vasomotor symptoms as women traverse the menopause. However, this may vary as a

woman becomes postmenopausal. Obese women have a lesser decline in estradiol even as they transition to menopausal state. It is due to the peripheral conversion of fats or adipose tissue to estrogen. BMI is also associated with the mood, symptoms and hormones, as well as the metabolic syndrome and cardiovascular risk factors.⁵

Marital status

In the study of Tsehay (2014), findings have shown no significant difference in the prevalence of menopausal symptoms across marital status. This lack of significant difference among Ethiopians may be attributed to the fact that the culture they have adapted may have influenced them relatively in the same way and pattern regardless of their marital status. On the other hand, this contradicted the previous study conducted in Saudi Arabia, where in married women has shown almost 4x more symptoms than single women. This was somehow attributed to a different life history, including sexual activity, use of birth control and cultural differences.¹³

Intake of Pills

Oral contraceptive pills are beneficial for non-smoking, healthy perimenopausal women. It has been found to relieve vasomotor symptoms in perimenopausal women and also decrease the risk of postmenopausal hip fractures, and regularize menses in women with abnormal uterine bleeding. Hence, it enhances the quality of life of perimenopausal women.¹⁶

MENOPAUSAL SYMPTOMS PREVALENT AMONG DIFFERENT NATIONS

Across nations, there were various menopausal symptoms that are more prevalent. In Pakistan and Saudi Arabia, the most prevalent symptoms experienced by the menopausal women were hot flushes and excessive sweating. These women were 45 years and above of age.^{2,15} On the other hand, among Filipino women, with an average age of menopause at 48 years, the most prevalent symptom was headache while the least prevalent was hot flush.⁴ In Malaysia, the most prevalent menopausal symptoms were joint and muscular discomfort. The age of menopause of Malaysian women was higher compared to other Asian countries, which was 51.3 years old.⁹ Other signs and symptoms experienced by menopausal women across nations were sleep disturbances, urinary frequency, vaginal dryness, poor memory, anxiety and depression.²

OBJECTIVES

To determine the prevalence and associated factors of climacteric symptoms experienced by women ages

40 years and above seen at a Tertiary Hospital in Metro Manila

SPECIFIC OBJECTIVES:

1. To determine the prevalence of climacteric symptoms among the respondents
2. To determine the socio-demographic factors associated with climacteric symptoms
3. To determine the average age at menopause of the respondents
4. To determine the socio-demographic factors associated with timing of menopause
5. To determine the incidence of loss of productivity among the respondents suffering from climacteric symptoms

MATERIALS AND METHODOLOGY

A. Materials

1. Study design

Cross-sectional study

This study involved data collected from the questionnaire or survey form to assess the prevalence of climacteric symptoms among middle age women subclassified into 2: (1) Premenopause (2) Perimenopause, (3) Menopause.

This study also involved analysis of correlation of climacteric symptoms and different variables that may affect or contribute to the prevalence of such symptoms and timing of menopause.

Sampling design - Simple Random Sampling

Women ages 40 years and above seen at the waiting area of outpatient department in our institution were chosen randomly and entirely by chance.

Data collection was in questionnaire/survey form.

2. Inclusion criteria

Included in this study were women between ages 40 years and above seen in the waiting area of our institution's out-patient department (OPD) who gave consent to participate in the survey. These included patients with or without specific gynecologic complaints and also companions of patients.

3. Exclusion criteria

Excluded in this study are pregnant and breastfeeding women, menopause women induced by surgery (bilateral oophorectomy), chemotherapy or radiation and who are currently taking hormonal replacement therapy.

4. Definition of terms

a) Menopause means cessation of menses for a full 12 months without a specific cause such as pregnancy or breast-feeding according to the standards of the world health organization (WHO)⁵

b) Perimenopause refers to a variable time beginning a few years before and continuing after the event of menopause.¹⁰ It also refers to a state prior to menopause in which a woman had menstruation in the previous/last 2-12 months but not in the previous/last 2 months, OR a when a woman experiences increasing menstrual irregularity but without skipping menstrual period (7 days difference from the beginning of a given cycle to the next, experienced after the previously regular cycle).⁷

c) Premenopause refers to a state in which there are minor changes in cycle length, particularly decreasing length of the cycle.⁷ In other study, it refers to a time when menses had occurred in the past 3 months with no decreased predictability.¹⁰

d) Climacteric refers to a phase in the women's life, which marks the transition from the reproductive phase to the non-reproductive state. This phase includes the perimenopause by extending for a longer variable period before and after the menopause.⁸

Limitations of the study

This study assessed whether the participant experienced the symptoms asked or not. The severity of the symptoms experienced by the participants were not measured or assessed.

6. Informed consent

B. Methodology

This was a descriptive study that was conducted from months of October to November 2016. Participants were given a consent form and the content of the form was explained to them in Filipino language to make sure that they have understood it. After signing the consent form, a code was assigned to each participant. Before the interview, the height and weight of the participant was measured to compute for the body mass index. The primary investigator did one-on-one interview with each participant in a cubicle where privacy was observed. The survey or questionnaire used was adapted from different studies. This was the "Modified Rating Scale", which was validated and proven to be a valuable tool for assessing health related quality of life of women in the menopausal transition and was used worldwide. This was also translated into different languages.¹⁶ The questionnaire included questions regarding sociodemographic data, menopausal status and symptoms experienced by the participants.

Questionnaires were divided into two sections such as follows:

- (1) Socio-demographic data of the participants, which include age, body mass index, marital status, socioeconomic status (educational level), history of smoking and history of intake oral contraceptive pills, menopausal status
- (2) Assessment of menopausal symptoms composed of 11 items and divided into three subscales:
 - a. Somatic, which includes hot flushes, heart discomfort/palpitation, sleeping problems and muscle and joint problems.
 - b. Psychological-depressive mood, irritability, anxiety and physical and mental exhaustion
 - c. Urogenital-sexual problems, bladder problems and dryness of the vagina⁷

This questionnaire was translated to Filipino language so that those respondents who were unable or had difficulty understanding English language were able to answer the questions correctly and accurately. Informed consent was given. The name of the participant was not written in the questionnaire/survey form and a code was assigned to each participant.

Data Analysis

Data analysis was performed in Stata SE version 13. Quantitative variables were summarized as mean and standard deviation for quantitative variables, while qualitative variables were tabulated as frequency and percentage. Age of menopause was estimated with 95% confidence level. Association between different factors and menopausal symptoms were analyzed using Fisher's exact test. The level of significance was set at 5%.

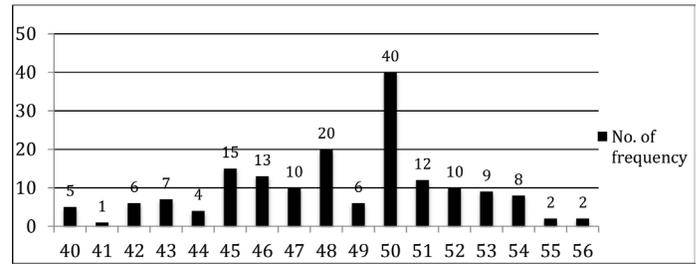
C. Sample size

Using Epi Info Version 7, the minimum sample size requirement is 360 based on percentage of postmenopausal = 37.4% (Rahman *et. al*, 2010) with alpha level = 5% and margin of error = 5%.

RESULTS

There were 360 women aged 40 years and above who completed the survey. Graph 1 showed that among these women, 39 (10.8%) were premenopausal, 140 (39.6%) were perimenopausal and 169 (46.9%) were postmenopausal. Among the group of postmenopause/menopause, majority had menopause at 50 years (23.7%).

The average age at menopause was 47-48 years with 95% confidence interval. To be exact, the mean age at menopause was **48.4 ± 3.58 (SD)** years and **median of 48 years**.



Graph 1. Age at menopause of the participants

Table 1 showed that most of the participants were married that comprised 253 (70.1%) while only 36 (10%) were single. Meanwhile, in terms of body mass index, 120 (33%) had normal weight, 93 (25.8%) were overweight and 95 (26.4%) were obese. Majority was high school graduate (42.5%) while 35% graduated from college. In addition, 11% were elementary graduate and 8% finished post-graduate course and the rest of 3% had no formal education.

Mostly, 272 (75.6%) had 2 or more children. A greater part of the respondents, 223 (61.9%) were non-smoking, 40 (11%) were currently smoking, but 4(1.1%) of them already stopped smoking for more than 10 years and the rest were passive smokers. The ages of participants at menopause who stopped smoking for more than 10 years were 49, 51 (2) and 52. Meanwhile, almost 2/3 of all had a sedentary lifestyle and 1/3 claimed to have regular exercise. There were only 57 (15.8%) who were currently taking oral contraceptive pills.

Prevalence of climacteric symptoms among the respondents

The frequency of climacteric symptoms among all the participants was shown on Table 2. Among premenopause (n=39), physical and mental exhaustion was the most prevalent symptom, followed by sleeping problem. Women at this age group rarely experienced the rest of the climacteric symptoms. Meanwhile, joint and muscular discomfort was the most frequent symptom experienced by perimenopause and menopause. In fact, almost 75% of the perimenopause suffered from joint and muscular discomfort while more than 65% of menopause suffered from it. Irritability was also a common problem among 60% of perimenopause. On the other hand, half of the menopausal women experienced physical and mental exhaustion. Most of the somatic subscale symptoms especially joint and muscular discomfort occurred in the perimenopausal women compared to pre- and postmenopausal women. Moreover, there were also more psychological subscale symptoms especially irritability found on perimenopausal compared to pre- and postmenopausal. Sexual problem was also affecting 48-50% of the perimenopausal and menopausal women.

Table 1. Sociodemographic data of respondents

Sociodemographic Data (N=360)	Mean + SD or n (%)
Age (years) 48.4 ± 3.58	
Body Mass Index	
Underweight (<18.5)	24 (6.7)
Normal (18.5-22.9)	120 (33.3)
Overweight (>23)	93 (25.8)
Obese I (>25)	95 (26.4)
Obese II (>30)	28 (7.8)
Marital status	
Single	36 (10)
Married	253 (70.1)
Widow	46 (12.8)
Separated	25 (6.9)
Educational level	
No formal education	11 (3.1)
Elementary	41 (11.4)
High school	153 (42.5)
College	126 (35)
Post-graduate	29 (8.1)
Number of children	
None	53 (14.7)
1	35 (9.7)
2 or more	272 (75.6)
Smoking history	
Non-smoking	223 (61.9)
<10 years	16 (4.4)
≥10 years	24 (6.7)
Stopped smoking for >10 years	4 (1.1)
Passive smoker	93 (25.8)
History of intake of OCPs	
No intake of OCPs	303 (84.2)
Currently taking OCPs	57 (15.8)

The association between the socio-demographic and climacteric symptoms

The climacteric symptoms experienced by the participants were correlated with selected variables such as body mass index, marital status and intake of pills. Results showed in Table 3.1 that body mass index (BMI) has no significant association with the climacteric symptoms experienced by the respondents. But based on this study, it was shown that regardless of the BMI, 60-70% experienced joint and muscular discomfort. Among the underweight group, half of them experienced heart discomfort. Meanwhile, symptom of irritability affected 50-60% of obese. In addition, more than 50% of morbidly

obese group experienced hot flushes and sweating, and also sexual problems.

To further see if there is association between BMI and climacteric symptoms, the respondents were grouped according to menopausal status. It was shown in Table 3.1.1. that among premenopause, joint and muscular discomfort was still the most prevalent symptom experienced by the respondents regardless of the BMI. But it was most frequent in the group of obese. On the other hand, it was noticeable that 50% of the premenopausal women who were underweight experienced hot flash or sweating. Actually, hot flash was found on all premenopause. But it was found more on the morbidly obese, comprising 58.3 % of all the morbidly obese premenopause. Results also showed that there were only two symptoms found on the underweight group and those were hot flash and irritability.

On the other side, it was shown in Table 3.1.2 that somatic and psychological symptoms were more prominent among perimenopause who were underweight. Meanwhile, no significant association between BMI and climacteric symptoms were found among obese women. But overall, it can be noticed that all climacteric symptoms were mostly found in the group of menopause.

Table 3.1.3 showed that among the group of menopause, joint and muscular discomfort was still the most prevalent symptom regardless of the body mass index. But among obese women, the other two prominent symptoms aside from joint and muscular discomfort were physical and mental exhaustion, sexual problem and irritability.

However, there were no significant association found between BMI and climacteric symptoms with regards to menopausal status.

On Table 3.2, it was shown that the marital status has also not shown a significant difference in the climacteric symptoms experienced by the respondents. But among married women (n=253), more than 65% suffered from joint and muscular discomfort.

On Table 3.3, it was also shown that regardless of the history of oral contraceptive pills (OCP) intake, the most prevalent climacteric symptom experienced by the respondents was joint and muscular discomfort (63%). Among those who were currently taking pills, another prevalent symptom was physical and mental exhaustion followed by heart discomfort, sexual problem and irritability. But results did not show any statistical significance.

The association between the sociodemographic factors and timing of menopause

Different characteristics or sociodemographic factors were also correlated with the timing of menopause, which

Table 2. Frequency of climacteric symptoms among the total number of respondents

Somatic	Premenopause (n = 39)	Perimenopause (n= 140)	Menopause (n= 169)	p value
Hot flushes, sweating	1 (2.6)	76 (50)	64 (30.9)	< 0.001
Heart discomfort	4 (10.3)	79 (52)	65 (38.5)	< 0.001
Sleeping problems	7 (18)	83 (54.6)	81 (48)	< 0.001
Joint and muscular discomfort	6 (15.4)	110 (72.4)	112 (66.3)	< 0.001
Psychological				
Depressive mood	1 (2.6)	64 (42.1)	52 (30.8)	< 0.001
Irritability	3 (7.7)	92 (60.5)	78 (46.2)	< 0.001
Anxiety	0	45 (29.6)	51 (30.2)	< 0.001
Physical and mental exhaustion	8 (20.5)	87 (57.2)	86 (50.9)	< 0.001
Urogenital				
Sexual problems	1 (2.6)	76 (50)	82 (48.5)	< 0.001
Bladder problems	1 (2.6)	29 (19.1)	42 (24.9)	0.002
Dryness of vagina	0	41 (27)	53 (31.4)	< 0.001

Table 3.1. Correlation of symptoms experienced by the respondents with body mass index (BMI)

Characteristics	Body mass index					p value
	Underweight (n=24)	Normal (n=120)	Overweight (n=93)	Obese I (n=95)	Obese II (n=28)	
Somatic						
Hot flushes, sweating	9 (37.5)	43 (35.8)	32 (34.4)	41 (43.2)	16 (57.1)	0.214
Heart discomfort	12 (50)	44 (36.7)	40 (43)	40 (42.1)	12 (42.9)	0.735
Sleeping problems	9 (37.5)	54 (45)	49 (52.7)	45 (47.4)	14 (50)	0.682
Joint and muscular discomfort	15 (62.5)	71 (59.2)	58 (62.4)	66 (69.5)	18 (64.3)	0.644
Psychological						
Depressive mood	7 (29.2)	37 (30.8)	31 (33.3)	29 (30.5)	13 (46.4)	0.578
Irritability	10 (41.7)	51 (42.5)	45 (48.4)	50 (52.6)	17 (60.7)	0.348
Anxiety	7 (29.2)	30 (25)	27 (29)	21 (22.1)	11 (39.3)	0.423
Physical and mental exhaustion	9 (37.5)	53 (44.2)	53 (57)	48 (50.5)	18 (64.3)	0.126
Urogenital						
Sexual problems	6 (25)	53 (44.2)	42 (45.2)	42 (44.2)	16 (57.1)	0.238
Bladder problems	5 (20.8)	26 (21.7)	16 (17.2)	20 (21.1)	5 (18.9)	0.941
Dryness of vagina	5 (20.8)	28 (23.3)	26 (28)	25 (26.3)	10 (35.7)	0.680

included body mass index, marital status, educational attainment, history of smoking, number of children or parity and physical activity.

Table 4 showed the correlation of timing of menopause with selected variables. Among the respondents who had early menopause at age 40-44 years, 7 out of 23 (30%) were overweight but did not show significant difference from normal weight and obese. On the other hand, about 65% of this group was married. History of smoking among these women also did not show significant difference, although

majority (56.5%) were non-smokers. On this study, early menopause at ages 40-44 years were found more on multiparous women. In fact, 87% of the respondents ages 40-44 were had 2 or more children.

On the other side, most of the respondents who had age at menopause at 45-49 years were high school graduate. Meanwhile, women who had late menopause at age 55-59 years were either college graduate or had finished a post-graduate course.

Lastly, results showed that more than 70% of the

Table 3.1.1. Correlation of symptoms experienced by the respondents with BMI among group of premenopause

Characteristics	Body mass index among premenopause					p value
	Underweight (n=10)	Normal (n=40)	Overweight (n=43)	Obese I (n=47)	Obese II (n=12)	
Somatic						
Hot flushes, sweating	5 (50)	19 (47.5)	21 (48.8)	24 (51.1)	7 (58.3)	0.982
Heart discomfort	0	1 (7.1)	1 (11.1)	1(10)	1(50)	0.451
Sleeping problems	0	3 (21.4)	2 (22.2)	2 (20)	0	1.000
Joint and muscular discomfort	0	3 (21.4)	1 (11.1)	2 (20)	0	1.000
Psychological						
Depressive mood	0	1 (7.1)	0	0	0	1.000
Irritability	1 (25)	1 (7.1)	0	1 (10)	0	0.604
Anxiety	0	0	0	0	2 (100)	0
Physical and mental exhaustion	0	3 (21.3)	1 (11.1)	4 (40)	0	0.470
Urogenital						
Sexual problems	0	0	0	1 (10)	0	0.641
Bladder problems	0	0	0	1(10)	0	0.641
Dryness of vagina	0	0	0	0	0	0

Table 3.1.2. Correlation of symptoms experienced by the respondents with BMI among group of perimenopause

Characteristics	Body mass index among perimenopause					p value
	Underweight (n=10)	Normal (n=66)	Overweight (n=41)	Obese I (n=38)	Obese II (n=14)	
Somatic						
Hot flushes, sweating	5 (50)	19 (47.5)	21 (48.8)	24 (51.1)	7 (58.3)	0.982
Heart discomfort	8 (80)	22 (55)	22 (51.2)	21 (44.7)	6 (50)	0.375
Sleeping problems	7 (70)	23 (57.5)	22 (51.2)	23 (48.9)	8 (66.7)	0.649
Joint and muscular discomfort	7 (70)	29 (72.5)	30 (69.8)	35 (74.5)	9 (75)	0.984
Psychological						
Depressive mood	5 (50)	16 (40)	18 (41.9)	20 (42.6)	5 (41.7)	0.988
Irritability	7 (70)	22 (55)	27 (62.8)	28 (59.6)	8 (66.7)	0.895
Anxiety	5 (50)	11 (27.5)	11 (25.6)	14 (29.8)	4 (33.3)	0.641
Physical and mental exhaustion	6 (60)	19 (47.5)	28 (65.1)	26 (55.3)	8 (66.7)	0.537
Urogenital						
Sexual problems	0	0	0	1 (10)	0	0.641
Bladder problems	2 (20)	10 (25)	5 (11.6)	8 (17)	4 (33.3)	0.344
Dryness of vagina	3 (30)	11 (27.5)	8 (18.6)	15 (31.9)	4 (33.3)	0.618

respondents who had early menopause live a sedentary life while those menopause who exercise regularly had menopause at 45-54 years of age (30-40%).

On the other hand, those women who had menopause at 50 years and above were of normal weight (44.3%). Most of them were also married (69.6%). But unlike those women with early menopause, most of the respondents with late menopause belonged to higher socioeconomic

status. Results showed that parity of more than 2 were found mostly in women with late menopause. In fact, 61 out of 79 (77.2%) women who had menopause at age 50-54 were multipara.

The incidence of loss of productivity among the respondents suffering from menopausal symptoms

The response to work of women suffering from

Table 3.1.3. Correlation of symptoms experienced by the respondents with BMI among group of menopause

Characteristics	Body mass index among menopause					p value
	Underweight (n=4)	Normal (n=14)	Overweight (n=9)	Obese I (n=10)	Obese II (n=2)	
Somatic						
Hot flushes, sweating	4 (40)	24 (36.4)	10 (24.4)	17 (44.7)	9 (64.3)	0.085
Heart discomfort	4 (40)	21 (31.8)	17 (41.5)	18 (47.4)	5 (35.7)	0.596
Sleeping problems	2 (20)	28 (42.4)	25 (61)	20 (52.6)	6 (42.9)	0.129
Joint and muscular discomfort	8 (80)	39 (59.1)	27 (65.9)	29 (76.3)	9 (64.3)	0.412
Psychological						
Depressive mood	2 (20)	20 (30.3)	13 (31.7)	9 (23.7)	8 (57.1)	0.231
Irritability	2 (20)	28 (42.4)	19 (43.9)	21 (55.3)	9 (64.3)	0.185
Anxiety	2 (20)	19 (28.8)	16 (39)	7 (18.4)	7 (50)	0.130
Physical and mental exhaustion	3 (30)	31 (57)	24 (58.5)	18 (47.4)	10 (71.4)	0.236
Urogenital						
Sexual problems	2 (20)	29 (43.9)	24 (58.5)	18 (47.4)	9 (64.3)	0.148
Bladder problems	3 (30)	16 (24.2)	11 (26.8)	11 (28.9)	1 (7.1)	0.551
Dryness of vagina	2 (20)	17 (25.8)	18 (43.9)	10 (26.3)	6 (42.9)	0.224

Table 3.2. Correlation of symptoms experienced by the respondents with marital status

Characteristics	Marital status				p value
	Single (n=36)	Married (n=253)	Widow (n=46)	Separated (n=25)	
Somatic					
Hot flushes, sweating	15 (58.3)	102 (40.3)	16 (34.8)	8 (32)	0.789
Heart discomfort	13 (36.1)	109 (43.2)	16 (34.8)	10 (40)	0.685
Sleeping problems	15 (41.7)	119 (47)	25 (54.4)	12 (48)	0.714
Joint and muscular discomfort	18 (50)	169 (66.8)	29 (63)	12 (48)	0.084
Psychological					
Depressive mood	9 (25)	83 (32.8)	16 (34.8)	9 (36)	0.754
Irritability	15 (41.70)	126 (49.8)	19 (41.3)	13 (52)	0.596
Anxiety	5 (13.9)	67 (26.5)	16 (34.8)	8 (32)	0.165
Physical and mental exhaustion	13 (36.1)	125 (49.4)	28 (60.9)	15 (60)	0.114
Urogenital					
Sexual problems	6 (16.7)	120 (47.4)	21 (45.7)	12 (48)	0.004
Bladder problems	8 (22.2)	45 (17.8)	14 (30.4)	5 (20)	0.257
Dryness of vagina	3 (8.3)	71 (28.1)	15 (32.6)	5 (20)	0.036

menopausal symptoms was shown in Table 5.

Among perimenopause and menopause, more than 10% miss work due to different climacteric symptoms, especially joint and muscular discomfort. Actually, 19 (12.5%) among perimenopause while 21 (12.4%) among menopause women were absent at work when climacteric symptoms occur.

DISCUSSION

There were 360 women aged 40 years and above who completed the survey, 169 of those were menopause already. Majority of the respondents who are menopause had their menopause at age 50 years. More than 20 years ago, in the study of Jalbuena (1994), the average age at menopause was 47-48 years. This implies that among

Table 3.3. Correlation of symptoms experienced by the respondents with history of intake of oral contraceptive pills

Characteristics	History of intake of OCPs		
	No intake of OCPs (n=303)	Currently taking pills (n=57)	p value
Somatic			
Hot flushes, sweating	119 (39.3)	22 (38.6)	0.524
Heart discomfort	117 (38.6)	31 (54.4)	0.029
Sleeping problems	143 (47.2)	28 (49.1)	0.451
Joint and muscular discomfort	192 (63.4)	36 (63.2)	0.544
Psychological			
Depressive mood	98 (32.3)	19 (33.3)	0.498
Irritability	143 (47.2)	30 (52.6)	0.271
Anxiety	78 (25.7)	18 (31.6)	0.224
Physical and mental exhaustion	145 (47.9)	36 (63.2)	0.024
Urogenital			
Sexual problems	128 (42.2)	31 (54.4)	0.061
Bladder problems	62 (20.5)	10 (17.5)	0.381
Dryness of vagina	77 (25.4)	17 (29.8)	0.293

our study population, the average age of Filipinos at menopause was now closer to Western countries' age at menopause, which is 51 years. It was also found out that on this study that the most prevalent climacteric symptom now among the participants was joint and muscular discomfort (65-75%). This was also the most common reason why the affected women missed their work. Moreover, almost 75% of these women belong to perimenopause group who were still active at work. Hence, this concern is relevant to address especially in women who are working to support their family. It was also noted that half of the menopausal women experienced physical and mental exhaustion. This finding on this study is important not only for the women themselves, but also for the people they live with. Being aware that physical and mental exhaustion is common symptom among menopausal women would prepare the family also to become more understanding, more patient and more caring for the women on menopausal years.

Each woman experiences different climacteric symptoms. In fact, there are some who do not experience any symptom at all even if they have reached perimenopausal years already. This study aimed to correlate the factors that may affect the prevalence of symptoms. In SWAN study, it was stated that the higher body mass index (BMI), the worse vasomotor symptoms could occur in women on perimenopausal years. It was explained that the relationship of BMI with climacteric symptoms especially vasomotor symptoms varies as a woman completes the transition into menopause due

to increased peripheral production of estrogen from hormone precursors of adipose tissue. Prior to menopause, there is only minimal contribution of adiposity to the total body estrogen pool until the time comes when the ovary becomes inactive after menopause. Vasomotor symptoms becomes more prominent in obese women perhaps due to increased insulation of the body by fat. On this study, it also showed that the higher body mass index, the worse vasomotor symptoms, as manifested by hot flushes or sweating. It showed that the group of morbidly obese women were the most number of women who experienced vasomotor symptom. But surprisingly, the group of menopause who were morbidly obese were the ones who experienced more of the vasomotor symptoms compared to perimenopause. However, these results showed no statistical significance.

Regarding marital status, there were various studies with different views such as in the study of Tsehay (2014), in which, no significant difference in the prevalence of menopausal symptoms among menopausal women. But there was also a study in Saudi Arabia that has shown a significant increase in the prevalence of symptoms among married women. On this study, 253 (70%) were married but statistics showed no significant difference in the prevalence of climacteric symptoms.

History of intake of pills was one of the selected variables to correlate with climacteric symptoms because it has been found to improve the quality of life among perimenopausal women, by providing relief of vasomotor symptoms and decreasing the risk of postmenopausal

Table 4. Correlation of Timing of Menopause with selected variables

Characteristics	Age at menopause				p value
	40-44 (n=23)	45-49 (n=64)	50-54 (n=79)	55-59 (n=4)	
Body mass index					
Underweight	1 (4.4)	4 (6.3)	6 (7.6)	0	0.413
Normal	6 (26.1)	25 (37.5)	35 (44.3)	1 (25)	
Overweight	7 (30.4)	17 (26.6)	15 (19)	2 (50)	
Obese I	6 (26.1)	12 (18.8)	20 (25.3)	0	
Obese II	3 (13)	7 (11)	3 (3.8)	1 (25)	
Marital status					
Single	2 (8.7)	7 (10.9)	7 (8.9)	0	0.971
Married	15 (65.2)	41 (64.1)	55 (69.6)	4 (100)	
Widow	6 (26.1)	13 (20.3)	14 (17.7)	0	
Separated	0	3 (4.7)	3 (3.8)	0	
Educational attainment					
No formal education	1 (4.4)	2 (3.1)	4 (5.1)	0	0.524
Elementary	3 (13)	5 (7.8)	15 (19)	0	
High school	11 (47.8)	34 (53.1)	29 (36.7)	2 (50)	
College	8 (34.8)	20 (31.3)	26 (32.9)	1 (25)	
Post-graduate	0	3 (4.7)	5 (6.3)	1 (25)	
History of smoking					
Non-smoking	13 (56.5)	38 (59.4)	49 (62)	4 (100)	0.985
<10 years	1 (4.4)	2 (3.1)	4 (5.1)	0	
≥10 years	2 (8.7)	8 (12.5)	7 (8.9)	0	
Stopped smoking for >10 years	0	1 (1.6)	1 (1.3)	0	
Passive smoker	7 (30.4)	15 (23.4)	18 (22.8)	0	
Parity					
None	1 (4.35)	11 (17.2)	11 (13.9)	0	0.083
1	2 (8.7)	5 (7.8)	7 (8.9)	1 (25)	
2 or more	20 (87)	48 (75)	61 (77.2)	2 (50)	

Table 5. Response to work of women suffering from menopausal symptoms

Response to Work	Menopausal status		
	Premenopausal (n=39)	Perimenopausal (n=152)	Menopause (n=169)
Does not miss work	39 (100)	133 (87.5)	148 (87.6)
Absent at work	0	19 (12.5)	21 (12.4)

fracture. However, it was found on this study that there was no statistical significance that may support this theory. But this could be further studied because on this study, only 16% of the total participants were taking OCPs. Therefore, this could not perfectly explain the correlation between intake of pills and the symptoms.

The timing of menopause was still controversial.

Although it was already proven that it is genetically determined, there are lots of studies nowadays that strive to prove that there are various factors that may affect it. This study has selected variables such as educational attainment, parity, physical activity and smoking to correlate it with the timing of menopause.

Most of the respondents who had age at menopause

at 45-49 years were high school graduate. Meanwhile, women who had late menopause at age 55-59 years were either college graduate or had finished a post-graduate course. But there was no significant difference found on this variable. Parity has also been associated with later age of menopause. However, there was no statistical significance found on this study.

History of smoking is significant to know because it was already proven in previous studies that factors such as smoking which are toxic to the ovary often result in an earlier age of menopause.¹⁰ Ironically, present study showed that early menopause at ages 40-44 years were mostly found among those who were non-smoking, and those also who had late menopause were mostly non-smoking. Therefore, there was no significant association found. In contrast to the previous studies saying that cessation of smoking for more than 10 years decreases risk of early menopause, this was not found on this study. The ages at menopause of the respondents who stopped smoking for >10 years were 49, 51 and 52, which belong to average age at menopause among Filipinos. Therefore, no significant association was found between history of smoking and timing of menopause. As mentioned above, smoking has long been proven already that it can cause earlier cessation of menses due to its toxic effect to the ovary. The findings on this study was different may be because the data gathered regarding smoking history were not sufficient. The findings could be more significant if the data obtained were regarding how many pack years (cigarette sticks per day), not just the number of years of smoking. Some participants may have smoked for more than 10 years but not every day or may be they were just consuming 1-2 sticks per day. And some may be smoking for less than 10 years but consuming 10 sticks per day. Therefore, the number of pack years could give more significant results.

Lastly, the incidence of loss of productivity of women suffering from climacteric symptoms was only 12% each among perimenopausal and menopausal women. Although by looking at statistics, 12% seems to be a small number, it is still significant to address this concern to help these women to face this transition in their lives. It was found that the most common climacteric symptom causing their absence at work was joint and muscular discomfort. As mentioned, this was found more on the perimenopausal women who are still actively working whether on their profession or at home. Thus, addressing this symptom as early as premenopause period would help women to avoid missing their work or prevent possible complications. This study would help Filipino middle age women be aware of the common climacteric symptoms they have to face so they can seek help or consult with physicians who are experts on this significant transition in life.

CONCLUSION

The assessment of climacteric symptoms among Filipino women ages 40 years and above showed that the mean age of menopause was 48.4 ± 3.58 (SD) years. Majority of the participants who were menopause had their menopause at age 51 years. The most prevalent climacteric symptom experienced by them was joint and muscular discomfort, but this was more common among perimenopausal women. This was also the most common symptom that could not be endured by those women who miss their work. The somatic and psychological symptoms were found more on the perimenopausal group than the menopausal, while urogenital symptoms were experienced more by the menopausal group.

On the other hand, there were no significant association between sociodemographic factors and climacteric symptoms, as well as with the timing of menopause.

In terms of productivity, it has shown that only more than 10% of the respondents were affected to a point of missing their work when they experience climacteric symptoms.

RECOMMENDATIONS

There were various factors used to associate with timing of menopause such as body mass index, marital status, educational attainment, history of smoking and parity. But genetics was not included on this study. Although it was already proven in previous studies that timing of menopause is genetically determined, it could still be included in this study by adding question on the survey regarding the age at menopause of their mother or 1st degree relative.

Socioeconomic status has been one of the significant factors used in different countries to assess if it has significant association with the timing of menopause. It was measured by educational attainment, household income or husband's income. Most of the studies used educational attainment as a measure for the socioeconomic status and that was the reason why educational attainment was chosen to use in this study. But here in the Philippines, there are Filipinos who were not able to finish college degree or post-graduate course but was still able to succeed and became rich. On the other hand, there were also Filipinos who finished college but did not succeed and chose to live a simple life. Therefore, educational attainment is not a sufficient measure for the socioeconomic status of a person. This paper recommends including household income as a measure to assess the real socioeconomic status of the participant.

On the other hand, as mentioned above, the number

of pack years is more important than the number of years the participant is smoking. Therefore, this paper also recommends including the number of cigarette stick per day in the questionnaire.

Lastly, the assessment tool used was translated

to different languages and was validated in different countries. This paper recommends making the said tool to be validated in our country so other researchers can also use it. Translation of questionnaire to Filipino language should be done by the experts and be validated. ■

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