

## Original Research Article

# FACTORS AFFECTING AGE OF ONSET OF MENOPAUSE

### ABSTRACT

**Background:** Menopause is a natural process, occurring in women that marks the end of fertility among women. It is characterized by a cessation of menstruation, decline in ovarian activity and disturbances in periods along with vaginal dryness, mood swings and hot flashes. The age of menopause ranges in between 40 to 55 years. Although there are many factors affecting the age of menopause onset like metabolic syndrome, cytotoxic drugs, but there is no general agreement on them.

**Objectives:** To explore the factors affecting age of onset of menopause among Pakistani women.

**Methodology:** This cross-sectional-observation study was conducted on 139 women (aged at or above 40 years) presenting to the Outpatient Department of Obstetrics – Gynecology at Jinnah Medical College Hospital, Karachi – Pakistan from Nov 2020 to May 2021. Data was collected using a structured interview-based questionnaire containing inquiries pertaining to basic biodata, sociodemographic details, menstrual history, and probable factors affecting age of onset of menopause. Chi-square test was applied to check the association between the different factors and age of menopause.

**Results:** The mean age of the participants was found to be  $43.23 \pm 4.11$  SD years, while the mean age of onset of menopause was recorded to be  $49.21 \pm 3.83$  SD years. The associations between the marital status, body mass index, use of OCP and socio-economic factors with age of onset of menopause, were found to be statistically significant.

**Conclusion:** Menopausal age not only reflects the end of fertility era but also of aging as well. Age of menopause significantly effects physical and psychological health of women and is considered as a very important event in women's lives. Controllable factors like obesity, tobacco use, use of OCP plays a significant role in age of onset of natural menopause

**Keywords:** Menopause, Menarche, Pakistani and Menopausal Age.

## INTRODUCTION

Menopause is a vital phase in a women's life which marks the end of her fertility period.<sup>[1]</sup> It is described as the natural phenomenon in which cessation of menses occurs which is longer than a year. The cause of this normal aging process is decrease ovarian functioning and decline in hormones that occur in midlives of all women.<sup>[2-4]</sup> The termination of active menstruation cycles is not an illness nor is it due to any pathological reason.<sup>[5]</sup> This end of fertility phase in woman's life gradually passes through a prodromal stage which is termed as menopausal transition.<sup>[4]</sup>

The decline in ovarian functioning accompanied by hormonal depletion results in number of bodily problems like vaginal dryness, mood swings and hot flashes. Menopause not only causes somatic problems but also cause sexual and psychological problems which collectively significantly lessens women's quality of life.<sup>[5-7]</sup> sometimes, unnatural menopause can also be induced either by removal of uterus along with bilateral ovaries, known as surgical menopause and via treatment with cytotoxic drugs.<sup>[8]</sup>

With the improvement of health care facilities, nutritional advancements and widely accessible modern treatment lead to the more postmenopausal women and the subject of menopause has gained much importance.<sup>[9]</sup> 45 to 53 year age bracket is now considered to be the age natural menopause worldwide.<sup>[10-16]</sup>

Menopause influences not only on physical health but on other domains of health as well like psychological health and socio-cultural aspects.<sup>[17]</sup> Onset age of natural menopause is demonstrative of depletion in ovarian follicles reserves, which further depend upon different environmental and genetic factors.<sup>[18]</sup> The environmental factors can be controlled and they include use of nicotine, socioeconomic status, occupation and parity of women.<sup>[19]</sup>

## OBJECTIVES

To explore the factors affecting onset age of menopause among a Pakistani women.

## **METHODOLOGY**

This cross-sectional-observation study was conducted on 139 women (aged at or above 40 years) presenting to the Outpatient Department of Obstetrics – Gynecology at Jinnah Medical College Hospital, Karachi – Pakistan from Nov 2020 to May 2021. Data was collected using a structured interview-based proforma which contained questions regarding biodata, socio-demographic details, menstrual history, and probable factors affecting age of onset of menopause. Anthropometric parameters like height, weight, BMI, body fat and visceral fat was recorded via OMRON BF 508 body composition monitor.

### Inclusion criteria

1. Consenting individuals
2. Aged above 40 years

### Exclusion Criteria

1. “Women using hormone replacement therapy”
2. “Women with artificial/induced menopause”

### **Statistical Analysis**

Data was analyzed using SPSS v. 21.0. Chi-square test was applied to check the association between the different factors and age of menopause.

## **RESULTS**

The mean age of the participants was found to be  $43.23 \pm 4.11$  SD years, while the mean onset age of menopause was recorded as  $49.21 \pm 3.83$  SD years. Most of the women resided in urban

areas and fell within the middle socioeconomic bracket. The associations between the marital status, body mass index, use of OCP and socio-economic factors with age of onset of menopause, were found to be statistically significant.

Table 1 demonstrates the descriptive statistics of the sample population

Variables		Statistic
Age (years)		43.23 $\pm$ 3.52
Mean BMI (kg/m <sup>2</sup> )		31.79 $\pm$ 4.11
Waist to Hip Ratio		0.91 $\pm$ 0.05
Body fat (%)		43.79 $\pm$ 6.72
Visceral fat		8.91 $\pm$ 1.75
Triglycerides (mg/dl)		195.10 $\pm$ 63.37
Residential Status	Urban	81 (57.9%)
	Rural	69 (42.1%)
Marital Status	Married	119 (85.6%)
	Unmarried / Separated / Widowed	20 (14.4%)
Educational Status	Educated	80 (57.6%)
	Un-Educated	59 (42.4%)
Employment Status	Employed	36 (25.9%)
	Un-Employed	103 (74.1%)
Socioeconomic Status	Low	27 (19.1%)
	Middle	106 (76.6%)
	High	06 (4.3%)
Tobacco Use	Yes	04 (2.9%)
	No	135 (97.1%)
OCP Use	Yes	52 (37.4%)
	No	87 (62.6%)

<b>Psychological Distress</b>	<i>Yes</i>	41 (29.5%)
	<i>No</i>	98 (70.5%)

Table 2 shows the relationship of different factors with the age of onset of menopause.

<b>Parameter</b>		<b>Early Age of Menopause (<math>&lt; 50</math> years)</b>	<b>Late Age of Menopause (<math>&gt; 50</math> years)</b>	<b>P-Value</b>
<b>Residence</b>	Urban 81 (57.9%)	39 (48.1%)	42 (51.9%)	$<0.05$
	Rural 69 (42.1%)	37 (53.6%)	32 (46.4%)	$<0.05$
<b>BMI</b>	$< 30$ 37 (26.6%)	21 (56.7%)	16 (43.3%)	$<0.05$
	$> 30$ 102 (73.4%)	35 (34.3%)	67 (65.7%)	$>0.05$
<b>Marital Status</b>	Married 119 (85.6%)	38 (32%)	81 (68%)	$>0.05$
	Unmarried/Separated / Widowed 20 (14.4%)	13 (65%)	07 (35%)	$<0.05$
<b>Use of OCP</b>	Present 52 (37.4%)	37 (71.1%)	15 (28.9%)	$>0.05$
	Absent 87 (62.6%)	32 (36.8%)	55 (73.2%)	$<0.05$

## DISCUSSION

The present study did not find any significant correlation between residential status of participants and the onset age menopause. This result is very much different from the findings of Dasgupta and Ray <sup>[20]</sup> who found out that the average onset age of natural menopause of females

residing in rural setting was  $49.3 \pm 5.29$  years while those living in urban areas was at  $54.23 \pm 6.7$  years and this variance was reported as statistically significant.

Our study found out that the women with BMI more than 30 reach menopause sooner than those having lower BMI. This finding is proved to be statistically significant. This is in agreement with that of Bromberger *et al.*,<sup>[12]</sup> who reported that average age of onset of natural menopause as 50.9 years for females with high BMI while average onset age of natural menopause was found to be 52.6 years in females with low BMI. Gold *et al.*,<sup>[21]</sup> stated a non-existent relation between natural menopause and BMI.<sup>[22]</sup>

The current study found out that married women have later age of menopause than those of single women. The parallel outcomes were reported by Gold *et al.*<sup>[21]</sup> that single women (who were either divorced or widowed or separated) achieved menopause way more sooner than those married females. Same is reported by Reynolds and Obermeyer<sup>[23]</sup> as well.

The study reported that with the use of OCP, women achieved menopause sooner than those who never used any contraceptives. This key finding was “in line with that of Gold *et al.*<sup>[21]</sup> who also reported that the use of OCPs during fertility period was associated with younger age of onset of menopause. Findings contrary to this, were reported Palmer *et al.*<sup>[22]</sup> and Reynolds and Obermeyer<sup>[23]</sup>, who reported an inverse and no association between use of OCP and onset age of menopause”, respectively.

## **CONCLUSION**

Menopausal age not only reflects the end of fertility era but also of aging as well. Age of menopause significantly effects physical and psychological health of women and is considered as a very important event in women's lives. Controllable factors like obesity, tobacco use, use of OCP plays a significant role in age of onset of natural menopause.

## **Consent**

As per international standard or university standard, Participants' written consent has been collected and preserved by the author(s).

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UNDER PEER REVIEW