

Factors influencing the age at natural menopause in Sinhalese women

R. Jayasekara¹

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Summary

In this preliminary study, the median age at natural menopause for Sinhalese women was determined as 51.12 years and the effects of socio-demographic, menstrual and reproductive factors on the age at natural menopause were studied. The age at menarche, the socio-economic class and age of the subjects at their first live births did not have a significant predictive value in establishing age at onset of natural menopause. However women who had no live births or one birth, reached menopause significantly earlier than those who had two or more live births. The effects of a prolonged menopause on women is discussed.

Key Words: Natural menopause, sinhalese, number of live births.

Introduction

The length of the female biological reproductive lifespan is a vital source of differential fertility to the student of biology. In Sri Lanka, there is a paucity of information on this period of fertility, the definition of its senescence and the influence of biological and socio-economic factors on it. The trend towards earlier menarche during the last century in industrialised societies is well documented (1). This is purported to be associated with improved nutrition, health and socio-economic conditions. This has led to speculation about the age at which menopause occurs and whether it too may be influenced by such factors.

Menopause, which is characterised by a depletion of oocytes and waning ovarian function, according to some studies, appears predetermined with an apparent lack of biological, cultural and environmental influences (2, 3, 4, 5). Other studies however,

showed that a number of environmental factors did influence it, like parity (6, 7, 8, 9), age at menarche (6, 8) and race (6, 10). Oral contraceptive use (11), obesity (6, 12) and smoking (13, 14, 15, 16) have been some of the other factors studied. Other diverse socio-demographic factors (6, 9, 11, 15) too have been shown to have an effect on ovarian function.

In this preliminary study, an attempt is made to record the results of a survey on the age at natural menopause of Sri Lankan women of a particular ethnic group and the possible influence of some socio-demographic factors on its onset. Such basic information is useful for a developing country like Sri Lanka, as the country itself attempts to establish its health standards and formulate its general health policies, particularly in family planning and the care of the elderly.

Population and Methods

The study sample consisted of adult Sinhalese females (the majority ethnic group in Sri Lanka). The subjects were residents of Colombo and its suburbs. Five hundred and twenty (520) subjects in the age range 45-55 years were interviewed at random, from the population of Sinhalese women, by a team of medical students. The *status quo* method was used, where the main question asked was, have you attained menopause? for which the answer was yes or no. A woman was considered naturally menopausal if the interval since the last menses was greater than three months. The three month limit was adopted to enable the subject to define whether she was "menopausal" or "not". If the answer was yes, it was verified whether she was pregnant, lactating, had a hysterectomy or was afflicted by any other disease or disorder or was malnourished.

¹ Human Genetics Unit, Faculty of Medicine, University of Colombo, Colombo 8.

Fifty two (52) women were excluded from the study as they had either a hysterectomy or a disease which may have contributed to the cessation of menstruation. Other information that was recorded included her date of birth, the socio-economic status (17), number of live births, recalled age at menarche and age at first live birth. The descriptive data of the study sample are shown in Tables 1, 2, and 3.

Table 1. Distribution of sample (n = 468) by age and menstrual status

Age	Menstrual Status			
	Yes		No	
	N	%	N	%
< 45 yr	123	82.6	59	18.6
45 - 49 yr	25	16.6	81	25.5
50 - 54 yr	2	1.4	76	23.9
≥ 55 yr	-	-	102	32.1

The median age at menopause for the sample was calculated using probit analysis (18) and the effects on the age at menarche, of her socio-economic class, her age at the first live birth and the number of live births, on the onset of menopause were determined for the subjects (n = 318) who responded "yes" to the question, "Have you attained menopause?" by an estimation of the relative median potency. These calculations were carried out using the SPSS-X programme (SPSS-X 1988) on the AMDAHL

Table 2. Distribution of sample (n = 468) by socio-economic class

Class	N	%
I	22	4.7
II	118	25.2
III	328	70.1

Table 3. Distribution of sample (n = 318) by number of live births

Live Births	N	%
0	12	3.8
1	22	6.9
2	45	14.1
3	38	11.9
4	34	10.7
5	44	13.8
6	38	11.9
7	41	12.9
8	20	6.4
9	24	7.6

main frame computer at the University of Newcastle-upon-Tyne U.K.

Results

The median age at menopause for the entire sample was 51.12 years with the range for 95% confidence limits being 50.17 years to 51.93 yrs. Table 4 shows the medians for the two menarcheal groups 10-13 yrs and 14-19 yrs which showed no significant differences.

Table 4. An analysis of the effect of the age at menarche on the age at menopause (n = 318)

Menarche yr	N	LD 50 50th Centile	ED 50	95 percent confidence limits
10 - 13	171	50.85 yr		49.57 51.99
14 - 19	147	51.45 yr		50.18 52.62

Relative median potency (0.988, 95 percent confidence limits 0.955 - 1.020)

The medians for the socio-economic classes I (professional), II (skilled manual) and III (unskilled manual) were calculated separately. Since they showed no significant differences, and the sample sizes were small, classes I and II were grouped together and their combined median was compared with that of class III. Socio-economic class did not have a significant effect on the median age at menopause (see Table 5).

Table 6 shows the median values for the two age groups 10-24 yr and 25-44 yr with regard to the

age at first live birth, which once again showed no effect on the age at natural menopause.

Table 7 shows the median ages at menopause for the two groups having 0-1 live births and 2-9 live births. A comparison of the differences between the two median values shows that each falls outside the 95% confidence limits of the other and this significant difference between the series was confirmed by estimates of the relative median potency (0.935, 95% confidence limits 0.862-0.997).

Table 5. An analysis of the effect of socio-economic class on the age at menopause (n = 318)

Socio-economic Class	N	LD 50 50th Centile	ED 50	95 percent confidence limits	
I & II	96	51.90 yr		50.38	53.39
III	222	50.76 yr		49.61	51.76

Relative median potency (1.022, 95 percent confidence limits 0.988 - 1.061)

Table 6. An analysis of the effect of age at first live birth on the age at menopause (n = 318)

Age at first live birth yr	N	LD 50 50th Centile	ED 50	95 percent confidence limits	
10 - 24	194	50.76 yr		49.61	51.79
23 - 44	124	52.04 yr		50.65	53.33

Relative median potency (0.975, 95 percent confidence limits 0.939 - 1.007)

Table 7. An analysis of the effects of the number of live births on the age at menopause (n = 318)

Number of live births	N	LD 50 50th Centile	ED 50	95 percent confidence limits	
0 - 1	23	48.04 yr		45.08	51.07
> / = 2	295	51.40 yr		50.46	52.22

Relative median potency (0.935, 95 percent confidence limits 0.862 - 0.997)

Discussion

Sri Lanka being a developing country, a median age at natural menopause of 51.12 yr was striking. A review of literature reveals that the average age at natural menopause in diverse populations worldwide ranges between 48 and 51 years (19, 20). There have even been reports of a trend toward increasing age at menopause in European populations (21). A delay in cessation of menstruation prolongs the length of the reproductive lifespan of the female and with it focuses on another aspect in the life of a Sinhalese woman.

A number of factors like the socio-economic class, the age at menarche, the age at the first live birth and the number of live births were investigated as potential influences on the onset of menopause. Sinhalese women who attained menarche later, reached menopause later and so did the women who had their first live birth after 25 years compared to those before that age. These trends were however not significant. As expected, women in the upper two socio-economic classes reached menopause later than those in the lower socio-economic class (manual skilled). This difference was once again not significant. A trend in the opposite direction has been observed in the age at menarche of Sinhalese girls (22, 23).

In this study, the number of live births appear to be the only factor which influences and delayed natural menopause, as seen in other studies (6, 7, 8). It was significant when the woman had either two or more live births. This is probably due to a prolongation of the duration of anovulatory ovarian cycles.

In view of the importance of menopause being an indicator of senescence of the reproductive system and a helpful marker in development after maturity, this study, although a preliminary one, is of importance to the country. Menopause being a scientifically defined arbitrary point on a continuum of events, shows a wide population variation and adds to our knowledge of this milestone in the life of a female. From a clinical point of view a

prolonged reproductive period may lead to important implications: for example, it may increase the risk of breast and cervical malignancies and may postpone post menopausal conditions like cardiovascular disorders and osteoporosis. The clinician needs to be receptive to the symptoms and signs of the onset of menopause.

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