STATISTICAL ANALYSIS ON AGE AT NATURAL MENOPAUSE OF WOMEN IN SRI LANKA

BY

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We certify that the candidate has incorporated all corrections, additions and amendments recommended by the examiners to the final version of the MPhill thesis.

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The work described in this thesis was carried out by me under the supervision of Prof. B.M.S.G. Banneheka and Prof. C. Abeysena and a report on this has not been submitted in whole or in part to any university or any other institution for another Degree/Diploma.

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STATISTICAL ANALYSIS ON AGE AT NATURAL MENOPAUSE OF WOMEN IN SRI LANKA

Kumaragewattage Deepika Vijayanthamali Fernando Siriwardana

ABSTRACT

Natural menopause is defined as the absence of menstruation for at least 12 consecutive months, not due to surgery or other obvious causes, such as extreme weight loss. In this study statistical analysis of Age at Natural Menopause (ANM) was done. A sample of post meopausal women under natural condisions, covering all provinces, were interviewed using a questionnaire designed to collect data on ANM and several explanatory variables, including factors reported to be associated with ANM. Observations of 914 women were used in the analysis. Composition of the sample consisted of 75.85% Sinhalese 16.28% Tamil and 7.87% Muslims. Composition of the sample consisted of 70.79% rural and 29.21% urban women. Sample mean, median and standard deviation of ANM were 48.349, 49, and 4.154 years respectively. Two-sample t-test showed no significant difference between mean ANMs of rural and urban sector women (p-value = 0.379). Chi-square tests of association indicated that ANM has bi-variate associations with race, number of days periods last, bleeding patterns, number of of still births/abortions, use of oral contraceptive, education level and body mass index at 0.05 level of significance, use of Depo-Provera/no-plant and use of Loop/LRT at 0.1 level of significance. Ordinal logistic regression using categorized ANM as the response variable indicated that race, bleeding patterns, no of still births/abortions, education level, body mass index, and interaction terms body mass index *race and bleeding patterns * no of still births/abortions together can adequately describe the odds of falling into different categories of ANM (Deviance p-value 0.465, Pearson p-value 0.564).

Based on the above factors, sample was divided in to subgroups out of which Statistical distributions were fitted for those with at least 30 observations. Accordingly distributions were fitted for only the subgroups describe below. ANM of the subgroup of Sri Lankan Sinhala women with BMI >= 18.5, still births/abortions < 3, low bleeding patterns and not followed higher studies, followed a Weibull distribution with shape parameter 17.07 and scale parameter 50.36(n=35, p>0.25) . ANM of the subgroup of Sri Lankan Sinhala women with BMI >= 18.5, still births/abortions < 3, medium/high bleeding patterns and followed higher studies, followed a smallest extreme value distribution with location parameter 51.93 and scale parameter 2.536 (n=47, p>0.25) . ANM of the subgroup of Sri Lankan Tamil/Muslim women with BMI >= 18.5, still births/abortions < 3, medium/high bleeding patterns and not followed higher studies, followed a smallest extreme value distribution with location parameter 50.54 and scale parameter 3.358 (n = 126, p>0.25) . ANM of the subgroup of Sri Lankan Sinhala women with BMI < 18.5, still births/abortions < 3, medium/high bleeding patterns and not followed higher studies, followed a logistic distribution with location parameter 46.50 and scale parameter 2.427(n=47,p>0.25) . According to the Chi square test of association, night sweats (p-value = 0.010), vaginal dryness (p-value = 0.002), backache (p-value = 0.021), lack of energy (p-value = 0.036) and memory impairment (p-value = 0.070) showed associations with ANM. Also, considerable proportions of women were suffering from heart problems (6.5%), hypertension (25%), diabetes (17%) and cholesterol problems (7%). However Chi square test showed no significant associations between ANM and health problems. Finally, based on the findings of this study a sample size of 9140 is estimated as suitable for future research on menopause for Sri Lankan women.