

Abstract 6

Assessing the relationship between menstrual pattern and BMI among Advanced Level female students of schools in Jaffna Educational Zone

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Background and objective: Menstrual problems are common in adolescent girls. Menstrual patterns can be influenced by hormonal, genetic and underlying health factors. These patterns have an impact on body mass index (BMI), contributing to obesity and metabolic disorders. Aim of the study is to assess the relationship between menstrual patterns and BMI.

Methods: A school-based descriptive cross-sectional study was conducted among Grade 12 female students in the Jaffna educational zone. The study population comprised all female students in selected schools. Using cluster sampling, 24 clusters were randomly chosen to obtain a final sample of 478 participants. Data were collected using a self-administered questionnaire to assess socio-demographic characteristics, and menstrual patterns. Height and weight were measured. BMI was calculated and categorized according to Asia-Pacific standards. Data entry and analysis were done using SPSS. Descriptive statistics, correlation analysis and chi-square tests were applied to determine associations between menstrual patterns and BMI, with $p < 0.05$ considered statistically significant.

Results: Among 478 participants, a 100% response rate was obtained for menstrual pattern-related data, while 96.2% provided anthropometric measurements. The mean age of the participants was 17.81 years (SD=0.532), ranging from 16 to 19 years. The mean age at menarche was 12.86 years (SD=1.086), with approximately one-third (36%) attaining menarche at 13 years. Greater proportion of participants (71.5%) reported regular menstrual cycles. Majority of adolescents (74.5%) had a normal menstrual cycle length (21–35 days). Most participants (31.4%) reported a menstrual duration of 5 days. Body Mass Index revealed that 45.2% fell within the normal range, 32.4% were underweight, while, 11.1% were categorized as overweight and 11.3% as obese. The mean BMI was 20.72 (SD=3.816) kg/m² and the median was 20.34 (IQR=17.86-22.83) kg/m². BMI showed a significant association with early menarche ($p=0.001$) and menstrual irregularities ($p=0.014$), but not with menstrual cycle length ($p=0.383$) or duration of menstruation ($p=0.911$).

Conclusion: Menstrual patterns appear to influence BMI, highlighting the importance of menstrual health in adolescents. A concerning prevalence of overweight and obesity supports the need for early identification of menstrual and nutritional issues. The study recommends routine screening for obesity and abnormal menstrual patterns, as well as promoting healthy lifestyles.

Keywords: menstrual pattern, menarche age, menstrual irregularity, adolescent obesity, Jaffna