

Title: Food craving, vitamin A, and menstrual disorders: A comprehensive study on university female students

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Abstract: Menstrual disorders, influenced by dietary habits like high fat intake and low fruit and vegetable consumption, are a global public health issue. This study assessed the prevalence of dysmenorrhea, premenstrual syndrome (PMS), and irregular menstrual cycle (IMC) among female university students in Bangladesh, focusing on food cravings and low vitamin A intake as risk factors. In this comprehensive study, data from randomly selected female university students were collected using a structured questionnaire. The associations were analyzed through chi-square tests and multivariable logistic regression, reported as adjusted odds ratios (AOR). The most prevalent menstrual disorder was dysmenorrhea (68.3%) followed by PMS (33.8%), and IMC (24.3%). Food cravers for high-fat and sweet foods were likely to experience dysmenorrhea (AOR: 2.4, 95% CI: 1.5-3.9, $P < 0.001$), suffer from PMS (AOR: 3.9, 95% CI: 2.3-6.6, $P < 0.001$), and have IMC (AOR: 3.0, 95% CI: 1.6-5.3, $P < 0.001$) vs. subjects who didn't. Subjects consuming vitamin A-rich plant foods had 40% (AOR: 0.6, 95% CI: 0.4-0.9, $P < 0.01$) and 60% (AOR: 0.4, 95% CI: 0.2-0.6, $P < 0.001$) less likely suffering from dysmenorrhea and IMC vs. who didn't. Both underweight and overweight/obese subjects experienced more than 2-fold dysmenorrhea vs. normal-weight peers. The chance of IMC was nearly 3-fold among overweight/obese subjects. However, lower physical activity was associated with PMS and IMC whereas family history was associated with dysmenorrhea and PMS. Among the socio-demographic factors, maternal education, place of residence, and earlier menarche (≤ 12 years) were associated with dysmenorrhea while marital status was associated with IMC. This study indicates that increasing the intake of vitamin A-rich plant foods and reducing high-fat, sweet foods can lower the risk of dysmenorrhea and IMC. Additionally, it highlights the need for regular exercise to mitigate the increased risk of PMS and IMC.

Keywords: Menstrual disorders, Dysmenorrhea, Premenstrual syndrome (PMS), Irregular menstrual cycle (IMC), Dietary habits Food cravings, Physical activity, Socio-demographic factors

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