



Investigation of the Relationship Between Sensory Processing Patterns, Biopsychosocial Status, and Menstrual Symptom Severity in University Students With Dysmenorrhoea

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Background and Aim. Dysmenorrhoea (menstrual pain) is common among university students, causing physical, social, and quality-of-life limitations. Evidence indicates that menstrual pain is a complex experience influenced by sensory processing. This study aimed to investigate the relationships between biopsychosocial status, sensory profile domains, and menstrual symptom severity in female students experiencing painful menstrual cycles.

Methods. This prospective study included 60 female university students (20.78 ± 1.24 years) with dysmenorrhoea at İzmir University of Economics (October 2025 – March 2026). Participants were evaluated using the Menstrual Symptom Questionnaire (MSQ), the Adolescent/Adult Sensory Profile, which categorises sensory processing patterns into four domains (Low Registration, Sensation Seeking, Sensory Sensitivity, and Sensation Avoiding), and the BETY-Biopsychosocial Questionnaire (BETY-BQ). Pain threshold was assessed using an algometer at six different points (m. levator ani, coccyx, umbilicus, mid-axillary, proximal adductor, and Pfannenstiel line). Data were analysed using Spearman's Correlation and Kruskal–Wallis tests.

Results. Significant positive moderate correlations were found between BETY-BQ scores (indicating poorer biopsychosocial status) and MSQ subdimensions (coping strategies: $\rho = .412$; negative effect: $\rho = .389$; menstrual pain: $\rho = .376$; all $p < .01$). The analysis revealed significant negative correlations between MSQ-coping strategies scores and pressure pain thresholds in all six assessed points (ρ ranging from $-.264$ to $-.389$, $p < .05$). A significant difference in BETY-BQ scores was observed among Sensory Sensitivity groups ($p = .018$). Post hoc pairwise comparisons were conducted using Dunn's test with Bonferroni correction. A significant difference was found between the 'typical' and 'definite' sensory sensitivity groups ($p < .05$).

Conclusions. The findings indicate that menstrual distress is significantly associated with a poorer biopsychosocial status and regional pain perception. Notably, students with 'definite' sensory sensitivity exhibit a significantly more impaired biopsychosocial profile. These findings highlight the importance of incorporating sensory processing assessments into dysmenorrhoea management strategies.

Keywords: Dysmenorrhoea; sensory profile; biopsychosocial status; menstrual cycle

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