

THE ROLE OF NEUROTICISM AND DEPRESSIVE SYMPTOMS IN MODULATING MIGRAINE BURDEN: A CROSS-SECTIONAL STUDY

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Background. Migraine is one of the most prevalent and disabling neurological disorders worldwide, carrying a substantial clinical, social, and economic burden. Beyond its biological underpinnings, psychological and personality factors are increasingly recognized as modulators of disease severity and chronification. The primary aim was to investigate the role of psychological and personality variables in modulating migraine severity within a biopsychosocial framework, focusing on an integrated migraine–depression–neuroticism model to assess the joint and independent contributions of these factors as predictors of headache burden and quality-of-life impairment.

Methods. This cross-sectional, observational, single-center study enrolled 402 patients (aged 18–70 years) attending the Headache Outpatient Clinic of Policlinico Umberto I, Rome, with diagnoses of migraine without aura (n=222), migraine with aura (n=98), or chronic migraine (n=82) according to ICHD-3 criteria. The sample was predominantly female (n=318; 79.1%). Exclusion criteria included neurological comorbidities, uncontrolled systemic conditions, and language barriers. Data collected between 2022 and 2026 via structured interviews and validated questionnaires (HIT-6, PHQ-9, MDQ, PVQ, Big Five Inventory) were analyzed using descriptive statistics, One-Way ANOVA, Spearman correlations, multiple linear regression, and General Linear Model (GLM).

Results. Migraine severity (HIT-6) correlated significantly with depressive symptomatology (rho=0.293; $p<0.001$) and with neuroticism (rho=0.124; p=0.016). Neuroticism also correlated positively with PHQ total score (rho=0.371; $p<0.001$), suggesting a role of emotional vulnerability in perceived headache burden. Multiple linear regression identified neuroticism as an independent predictor of HIT-6 score (B=1.306; p=0.032). In the multivariate GLM, pain intensity, conscientiousness, and agency were significantly associated with HIT-6, while extraversion was significantly associated with PHQ total score.

Conclusions. Depression and neuroticism were both associated with migraine severity through distinct mechanisms. While depression showed a significant positive correlation with headache burden, neuroticism emerged as the primary independent contributor in multivariate models, with the depression–severity association attenuating after controlling for personality variables. This suggests that part of the depressive burden in migraineurs may be mediated by stable personality traits—particularly emotional vulnerability inherent to neuroticism. These findings support a multidimensional approach to migraine assessment and highlight the need for integrated therapeutic strategies addressing emotional, depressive, and personality-related aspects alongside neurological treatment.