Higher Symptom Burden Following Mild Traumatic Brain Injury Negatively Affects Quality of Life – A Cross-Sectional Comparative Study

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Introduction. Close to 31% of individuals who suffer from a mild traumatic brain injury (mTBI) report persistent symptoms three months post-injury. Physical, cognitive, emotional, and sleep-related disturbances can affect quality of life (QoL). We examined the relationship between symptom severity, QoL, and time since injury in individuals with persistent symptoms after mTBI.

Methods. Individuals between 40-80 years with mTBI were recruited through a Neurology clinic, with controls enrolled from the community. Demographics were collected. Participants completed the WHOQOL-BREF, assessing physical, psychological, social, and environmental QoL, and the Post Concussion Symptom Scale (PCSS), measuring four symptom domains. Mann-Whitney U tests compared groups, and Spearman's rank correlations examined relationships between time since injury, PCSS, and QoL domains in the mTBI group.

Results. This convenience sample included 21 controls and 18 individuals with mTBI (mean age 55.22±11.76). Significant differences in PCSS scores were seen (mTBI: 54.50, IQR 60; controls: 3.00, IQR 5.5) ($p < 0.001$). QoL in each domain was significantly lower in the mTBI group $p < 0.001$). PCSS scores in all domains correlated with poorer physical and environmental QoL ($p < 0.05$). Additionally, higher scores in physical and affective PCSS domains correlated with worse psychological QoL ($p < 0.05$). Time since injury showed no associations with PCSS or QoL.

Conclusions. Higher symptom burden following mTBI affects physical QoL by limiting work capacity and environmental QoL due to decreased ability to participate in leisure activities. Limitations include small sample size and variability in BMI, education, and comorbidities. Lack of improvement in symptom burden over time highlights the chronic nature of these challenges.