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ORIGINAL ARTICLE

**Vulnerability factors for pediatric disorders of gut–brain interaction and implications for functional impairment**

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**Abstract**

Objectives

To evaluate the frequency and number of vulnerability factors for the development of pain-predominant disorders of gut–brain interaction (p-DGBI) in a well-defined cohort of pediatric patients and examine associations with pain severity and functional impairment.

Methods

Retrospective cross-sectional study of patients evaluated in a multidisciplinary abdominal pain program at a pediatric tertiary care center.

Results

Two hundred and fifty-two patients were included, 70.6% female, mean age 13.6 ± 3.1 years; 37.3% had functional abdominal pain (FAP), 31.7% irritable bowel syndrome (IBS), and 31.0% functional dyspepsia (FD). At least one vulnerability was reported by 91.3%, with a mean of 2.2 ± 1.1 per patient, including early life events (42.9%), mental health problems (51.2%), a family history of mental health (52.4%), or chronic pain (55.2%) conditions. Functional disability scores were higher in patients with more vulnerability factors (*p* = 0.004). There was no association of increased number of vulnerability factors with pain intensity A triggering event precipitating p-DGBI symptoms was reported by 63.9% of patients: gastrointestinal infections (41.0%), extra-intestinal infections (16.1%), psychological stress (15.5%), concussion (8.7%), onset of organic disease (7.5%), medication reaction (5.0%), surgery (4.3%), or physical injury (3.7%).

Conclusions

Results support the biopsychosocial model suggesting that patients with p-DGBI are inherently susceptible to developing chronic pain due to biologic vulnerabilities and environmental factors. While infections remain the most reported trigger of p-DGBI symptoms, this study newly identifies other triggers. The association of increased number of vulnerability factors with worse functioning raises the question if there may be a cumulative adverse effect of multiple vulnerability factors.

**CONFLICT OF INTEREST STATEMENT**

The authors declare no conflicts of interest.