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Psychosocial adjustment to illness and resilience in inflammatory bowel disease outpatients: cross-sectional evidence from Serbia

BACKGROUND
This study aimed to examine psychosocial adjustment to illness and resilience among outpatients with inflammatory bowel disease (IBD) in Serbia and to evaluate the predictive role of resilience.

PARTICIPANTS AND PROCEDURE
A cross-sectional survey was conducted among 109 IBD outpatients (47 with Crohn's disease and 62 with ulcerative colitis). Participants completed standardized measures of resilience and psychosocial adjustment across multiple life domains, along with sociodemographic data. Statistical analyses included descriptive statistics, correlations, and multivariate regression to assess associations between resilience and psychosocial adjustment.

RESULTS
Participants demonstrated moderate to high levels of resilience and psychosocial adjustment. The highest adjustment scores were observed in personal health care, illness-related behavior, and treatment comprehension, whereas vocational and domestic domains were more affected. Regression analysis revealed that resilience significantly predicted psychosocial adjustment across several domains (i.e., personal health care, emotional response and hope for recovery, physician-provided information, treatment comprehension, social environment, and psychological distress). Notably, resilience was inversely associated with reliance on physician-provided illness information.

CONCLUSIONS
Resilience emerged as a key predictor of psychosocial adjustment in IBD, influencing emotional, social, and cognitive domains of functioning. Strengthening resilience and adaptive coping capacities should be considered essential components of comprehensive IBD care, complementing medical interventions and enhancing overall functioning and long-term outcomes. Future research should examine longitudinal effects of resilience and evaluate targeted interventions aimed at improving quality of life in IBD populations.

KEY WORDS
inflammatory bowel disease; resilience; psychosocial adjustment; chronic illness; quality of life

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AUTHORS' CONTRIBUTIONS – A: Study design · B: Data collection · C: Statistical analysis · D: Data interpretation · E: Manuscript preparation · F: Literature search · G: Funds collection

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BACKGROUND

Inflammatory bowel diseases (IBD), encompassing ulcerative colitis and Crohn's disease, are chronic, relapsing disorders characterized by recurrent gastrointestinal inflammation (Ferrarese et al., 2025). Although the precise pathogenesis of IBD remains unclear, it involves intricate interactions among genetic, environmental, microbial, and immune components (Wang et al., 2026). The global prevalence of IBD is estimated at 0.3–1% in developed countries (Ng et al., 2017; Silangcruz et al., 2021), although national epidemiological data for Serbia remain limited (Trikoš, 2018). Clinically, IBD presents with abdominal pain, persistent diarrhea, and weight loss, accompanied by extraintestinal complications (e.g., arthritis, uveitis) and, in severe cases, perforation, obstruction, or malignancy (Xu et al., 2022). These manifestations significantly impair daily functioning and contribute to increased healthcare utilization (Byron et al., 2020; Xu et al., 2022). Despite major therapeutic advances, individuals with IBD continue to experience marked reductions in psychological well-being and social functioning (Byron et al., 2020; Gomez et al., 2023; Irving et al., 2021). Although research has predominantly emphasized pathophysiological and medical aspects of the disease, psychosocial aspects remain comparatively understudied. A growing body of evidence demonstrates elevated rates of depression and anxiety among individuals with IBD, as well as disruptions in family, social, and professional roles (Argyriou et al., 2017; Cheng et al., 2022; Paulides et al., 2020; Taft et al., 2017; Thapwong et al., 2022). These findings underscore the need to integrate psychosocial perspectives into clinical care, emphasizing adaptive capacity and resilience in coping with the challenges of chronic illness.

Psychosocial adjustment to illness reflects the degree to which individuals effectively manage the emotional, social, and functional challenges imposed by a medical condition (Derogatis, 1986). It encompasses multiple life domains, including engagement with healthcare, vocational and domestic roles, interpersonal and sexual relationships, social participation, and psychological well-being (Derogatis, 1986). In IBD, psychosocial adjustment is particularly complex due to the unpredictable disease course, pronounced physiological symptoms, and the substantial psychological burden. It is conceptualized as a multidimensional outcome, capturing patients' emotional, social, and functional adaptation to their illness and treatment, while also reflecting a dynamic process of adjustment over time (Haapamäki et al., 2018; Kiebels et al., 2010). Poor psychosocial adjustment in IBD has been associated with greater emotional distress, diminished self-esteem, and identity disruption (Matini & Ogden, 2016; Tang & Lin, 2024). Conversely, effective adjustment to the diagnosis and fluctuating demands of IBD is linked to lower emotional illness representation, fewer functional symptom overlaps, and improved quality of life (Kiebels et al., 2010; Philippou et al., 2022; Sehgal et al., 2020). Some studies have suggested that physical activity and exercise interventions may support psychosocial adjustment and quality of life in individuals with IBD (Achtenberg et al., 2025).

Given the complex biopsychosocial nature of IBD, examining resilience offers valuable insight into patients' capacity for adaptation and recovery. Resilience is conceptualized as a dynamic protective capacity that integrates cognitive, emotional, and social resources, enabling individuals to cope effectively with adversity and change (Ayed et al., 2019; Jin et al., 2023; Wagnild & Young, 1993). Within a stress-coping framework (Lazarus & Folkman, 1984), resilience functions by regulating negative emotions, promoting adaptive coping strategies, and mobilizing social support, thereby facilitating effective psychosocial adjustment across emotional, social, and functional domains. In IBD populations, resilience has been associated with reduced disease activity, better mental health, enhanced quality of life, and sustained social participation despite the uncertainty and relapsing nature of the disease (Ayed et al., 2019; Jin et al., 2023; Kilpatrick et al., 2015; Sehgal et al., 2017; Shen et al., 2025). Conceptually, psychosocial adjustment is treated as a multidimensional outcome, while resilience represents a dynamic process that actively promotes adaptation to the continuous and evolving demands imposed by IBD (Wagnild & Young, 1993; Xu et al., 2022).

Cultural, healthcare, and social determinants critically shape psychosocial adjustment and resilience in individuals with IBD (Hawkins et al., 2024; Xu et al., 2022). In Serbia, structural characteristics of the healthcare system with regard to IBD management, including prolonged waiting times for specialist consultations and diagnostic procedures, constrained clinical resources, and limited access to patient education and formal psychological support, may influence patients' engagement in self-management and coping processes. Sociocultural influences, such as elevated patient skepticism toward healthcare providers, social stigma associated with chronic illness, and financial or administrative constraints, further shape patients' lived experiences and the development of adaptive psychosocial strategies. Regional disparities may additionally limit access to specialized care for individuals living in smaller towns. By contrast, international evidence highlights the role of family functioning, peer support, and educational attainment in shaping psychosocial outcomes. For example, studies in China and Germany have demonstrated that familial dynamics and peer interactions can either facilitate or hinder adaptive processes (Fan et al., 2017; Palant & Himmel, 2019; Xu et al., 2022), while research in Ireland indicated that sociodemographic and disease-specific factors significantly predict quality of life and functional

autonomy (Dorrian et al., 2009). Collectively, these observations suggest that psychosocial mechanisms identified in other populations may not fully generalize to the Serbian context, highlighting both the novel contribution of this study and the need for context-specific research.

Despite increasing recognition of the psychosocial burden associated with IBD, the role of resilience in shaping multidimensional psychosocial adjustment has not been examined in Serbia. To our knowledge, this is the first study to investigate how resilience relates to multiple domains of psychosocial adjustment among Serbian IBD outpatients. Specifically, this study aimed to evaluate the predictive role of resilience, hypothesizing that higher resilience would be associated with better psychosocial adjustment to illness, including lower psychological distress and greater functional adaptation.

PARTICIPANTS AND PROCEDURE

STUDY DESIGN AND SETTING

This study employed a cross-sectional design aimed at examining the relationship between psychosocial adjustment and resilience among outpatients diagnosed with IBD. The research was conducted in Serbia between September and October 2025, in collaboration with the patient association for individuals with Crohn's disease and ulcerative colitis.

The study was conducted entirely online to facilitate broad participation of outpatients across the country. Following formal authorization from the relevant patient association, a Google Forms survey was distributed through its internal communication channels and official social media platforms. After providing written informed consent, participants completed standardized self-report measures assessing psychosocial adjustment to illness and resilience, followed by demographic questions.

All study procedures adhered to the ethical standards of the Declaration of Helsinki. The study protocol was reviewed and approved by the relevant institutional ethics body. All data were collected anonymously to maintain participant privacy, and participation was entirely voluntary. Formal institutional review board approval was not required, as the study was conducted outside clinical settings, involved only anonymous responses, and complied with relevant national guidelines for low-risk, non-interventional research (Petrović, 2015).

PARTICIPANTS AND ELIGIBILITY CRITERIA

The final sample comprised 109 outpatients diagnosed with IBD, including 21 males and 88 females, aged 18-67 years (*M* = 38.50, *SD* = 11.44). Of the total sample, 62 participants were diagnosed with ulcerative colitis and 47 with Crohn's disease. Regarding educational attainment, 64 participants held a university degree, while 45 had completed secondary education.

Eligibility criteria included: (a) being an adult (≥ 18 years), (b) having a confirmed medical diagnosis of either Crohn's disease or ulcerative colitis, and (c) being an outpatient capable of independently completing an online questionnaire. Individuals who were hospitalized or unable to complete the survey autonomously were excluded. Participants with other chronic or severe psychiatric conditions were also excluded to minimize potential confounding influences on psychosocial variables.

MEASURES

Psychosocial adjustment to illness. Psychosocial adjustment to illness was assessed using an adapted version of the Psychosocial Adjustment to Illness Scale – Self-Report (PAIS-SR; Derogatis, 1986), which evaluates adaptation across multiple life domains: healthcare orientation, vocational environment, domestic environment, sexual relationships, extended family relationships, social environment, and psychological distress. The sexual relationships subscale was omitted, as the study focused on domains most relevant to adaptation and well-being in individuals with IBD; in addition, this domain was considered less directly applicable to the outpatient sample and could involve sensitive information potentially affecting response accuracy. Items were rated on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). In the present study, the adapted PAIS-SR demonstrated good internal consistency across all domains, with Cronbach's α coefficients ranging from .63 to .90.

Resilience. Resilience was measured using the 25-item Resilience Scale (RS; Wagnild & Young, 1993), a unidimensional, self-report instrument assessing positive psychological resources and core characteristics of resilient individuals, including equanimity, perseverance, self-reliance, meaningfulness, and existential aloneness. Items were rated on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). A Serbian version was culturally adapted using a forward-backward translation procedure, followed by pilot testing to ensure clarity and comprehension. In the present study, the RS demonstrated excellent internal consistency (Cronbach's α = .92).

DATA ANALYSIS

Data were analyzed using IBM SPSS Statistics 22.0. Descriptive statistics, including means, standard deviations, and frequencies, were computed to sum-

marize participants' demographic characteristics and study variables. Pearson's correlations assessed bivariate relationships and potential multicollinearity. A multivariate analysis of covariance (MANCOVA) was used to examine the overall effect of resilience, treated as a continuous predictor, on multiple psychosocial adjustment indicators in IBD outpatients. MANCOVA was selected to account for the intercorrelations among dependent variables while simultaneously controlling for educational level, sex, age, and disease type, minimizing Type I error and providing an integrated assessment of resilience-related psychosocial adjustment. To complement this, separate linear regression analyses examined the predictive effect of resilience on each individual psychosocial adjustment domain, offering a detailed understanding of the magnitude and direction of these relationships. Together, these analyses offer both a holistic multivariate understanding and a domain-specific predictive insight into how resilience relates to psychosocial adjustment in IBD outpatients.

Assumptions for MANCOVA were evaluated and met: multivariate normality was assessed via Mahalanobis distances with no extreme outliers detected, and homogeneity of covariance matrices was confirmed using Box's M test ($p > .05$). Regression assumptions were also checked: scatterplots indicated linear relationships, residuals were approximately normally distributed (Shapiro-Wilk test, all $p > .05$), homoskedasticity was observed, and a variance inflation factor (VIF) of 1.0 confirmed absence of multicollinearity. Effect sizes were reported as partial eta squared (η^2_p) for MANCOVA and standardized beta coefficients (β) for regression analyses. All tests were two-tailed, and statistical significance was set at $p < .05$, with 95% confidence intervals (CI).

RESULTS

DESCRIPTIVE STATISTICS AND BIVARIATE ASSOCIATIONS

Descriptive statistics and internal consistency indices for the PAIS-SR subscales and resilience are presented in Table 1. Participants reported moderate to high resilience ($M = 3.91$, $SD = 0.74$), and PAIS-SR subscale scores indicated generally adaptive psychosocial adjustment. Internal consistency was acceptable to excellent across all measures (Cronbach's α = .63-.92).

Across the sample, higher resilience was broadly associated with more adaptive psychosocial adjustment, including greater engagement in personal health care orientation, more positive emotional response and hope for recovery, enhanced treatment comprehension, stronger social connectedness, more supportive extended family relationships, and higher satisfaction with medical services, while being inversely associated with psychological distress and physician-provided illness information (see Table 1).

Table 1

Descriptive statistics and bivariate associations

Variables	*M* (*SD*)	α	2	3	4	5	6	7	8	9	10	11	12
1. PAIS-SR													
1.1. PHCO	4.16 (0.78)	.72	.39**	.03	.18	.07	.17	.36**	.01	.00	.06	.03	.30**
1.2. IRB	4.15 (0.82)	.71		−.02	.24*	−.03	.04	.11	−.02	−.05	.13	−.07	.18
1.3. SMC	3.88 (0.89)	.86			.15	−.59**	.70**	−.03	.23*	.21*	.20*	−.18	.25**
1.4. ERHR	3.68 (0.88)	.76				.19*	.30**	−.12	.20*	.32**	.36**	−.32**	.48**
1.5. PPI	2.33 (0.94)	.85					−.61**	.16	−.14	−.25**	−.29**	−.28**	−.27**
1.6. TC	4.13 (0.78)	.73						−.04	.13	.28**	.18	−.19	.39**
1.7. VE	3.50 (1.01)	.72							.48**	−.28	−.40**	.40**	−.17
1.8. DE	3.39 (0.88)	.79								.17	.45**	−.37**	.18
1.9. EFR	2.54 (0.91)	.63									.34**	.03	.28**
1.10. SE	3.38 (1.17)	.90										−.32**	.53**
1.11. PD	2.92 (1.01)	.85											−.37**
2. RS	3.91 (0.74)	.92											

Note. $^*p < .05$, $^{**}p < .01$; PAIS-SR – Psychosocial Adjustment Scale-Self Report; PHCO – personal health care orientation; IRB – illness-related behavior; SMC – satisfaction with medical care; ERHR – emotional response and hope for recovery; PPI – physician-provided information; TC – treatment comprehension; VE – vocational environment; DE – domestic environment; EFR – extended family relationships; SE – social environment; PD – psychological distress; RS – resilience.

Table 2

Multivariate effects of resilience on psychosocial adjustment in IBD outpatients

Effect	Values	F	df	p	η^2_p
Resilience					
Pillai's trace	0.51	9.18	11	< .001	.51
Wilks' lambda	0.49	9.18	11	< .001	.51
Hotelling's trace	1.04	9.18	11	< .001	.51
Roy's largest root	1.04	9.87	11	< .001	.51

Table 3

Univariate ANCOVA results for psychosocial adjustment indicators

Variables	df	F	p	η^2_p
Resilience				
PHCO	1	10.30	.002	.09
IRB	1	3.49	.060	.03
SMC	1	6.98	.009	.06
ERHR	1	31.37	< .001	.23
PPI	1	8.21	.005	.07
TC	1	18.99	< .001	.15
VE	1	3.38	.070	.03
DE	1	3.49	.060	.03
EFR	1	9.49	.003	.08
SE	1	41.29	< .001	.28
PD	1	16.22	< .001	.13

Note. PHCO – personal health care orientation; IRB – illness-related behavior; SMC – satisfaction with medical care; ERHR – emotional response and hope for recovery; PPI – physician-provided information; TC – treatment comprehension; VE – vocational environment; DE – domestic environment; EFR – extended family relationships; SE – social environment; PD – psychological distress.

Table 4

Linear regression of psychosocial adjustment indicators predicted by resilience

Dependent variable	β	t	p	R^2
PHCO	.30	3.21	.002	.09
SMC	.25	2.64	.009	.06
ERHR	.48	5.60	< .001	.23
PPI	–.27	–2.87	.005	.07
TC	.39	4.36	< .001	.15
EFR	.28	3.08	.003	.08
SE	.53	6.42	< .001	.28
PD	–.36	–4.03	< .001	.13

Note. PHCO – personal health care orientation; SMC – satisfaction with medical care; ERHR – emotional response and hope for recovery; PPI – physician-provided information; TC – treatment comprehension; EFR – extended family relationships; SE – social environment; PD – psychological distress.

EFFECTS OF RESILIENCE ON PSYCHOSOCIAL ADJUSTMENT TO ILLNESS

The MANCOVA results indicate that resilience has a significant overall effect on psychosocial adjustment to illness in IBD outpatients. The multivariate effect Pillai's trace = 0.51, $F(11, 97) = 9.18$, $p < .001$, $\eta^2_p = .51$ suggests a robust multivariate association (see Table 2). This effect size ($\eta^2_p = .51$) can be considered very large in psychosocial research, indicating that resilience explains over half of the combined variance in psychosocial adjustment domains. Follow-up univariate analyses (Table 3) revealed the largest effect sizes for social environment ($\eta^2_p = .28$), emotional adjustment and hope for recovery ($\eta^2_p = .23$), and treatment comprehension ($\eta^2_p = .15$). Educational level, sex, age, and disease type were initially included as covariates, but none significantly contributed to the model and were subsequently excluded from the final analyses. Practically, these findings suggest that resilience plays a major role in supporting emotional, social, and treatment-related adaptation in IBD outpatients.

REGRESSION OF RESILIENCE ON PSYCHOSOCIAL ADJUSTMENT TO ILLNESS INDICATORS

Linear regression analyses examined the predictive effects of resilience on psychosocial adjustment indicators. Each domain was examined in a separate model, with resilience entered as the sole predictor. The results showed that higher resilience significantly predicted greater personal health care orientation (β = .30, $p = .002$), satisfaction with medical

care (β = .25, p = .009), emotional response and hope for recovery (β = .48, p < .001), treatment comprehension (β = .39, p < .001), extended family relationships (β = .28, p = .003), and social environment (β = .53, p < .001), while predicting lower psychological distress (β = −.36, p < .001) and dissatisfaction with physician-provided information (β = −.27, p = .005) (see Table 4).

DISCUSSION

Despite the chronic and relapsing nature of IBD, participants in the present study exhibited moderate to high resilience and generally adaptive psychosocial adjustment, with resilience showing significant associations with indicators of psychological and social functioning in the context of the disease. Participants demonstrated moderate to high levels of psychosocial adjustment to illness, with the highest scores in domains related to personal health care orientation, illness-related behavior, and treatment comprehension, reflecting engagement in self-management and an understanding of therapeutic processes. These findings are clinically relevant, as effective disease management has been linked to improved clinical outcomes and greater psychosocial adaptation (Tran & Muligan, 2019; Xu et al., 2022).

Lower scores in vocational and domestic domains suggest that, despite generally adaptive functioning, chronic illness continues to pose challenges to patients' social and professional roles, consistent with previous research (Ito et al., 2008; Le Berre et al., 2019; Mattila et al., 2022). Interestingly, psychological distress was relatively low in this sample, contrasting with earlier studies that reported higher distress levels among IBD outpatients (Bernhofer et al., 2017; Byron et al., 2020; Dai et al., 2022). Prior evidence indicates that effective adjustment to IBD and its evolving demands is associated with fewer overlapping symptoms and improved quality of life (Kiebels et al., 2010; Philippou et al., 2022; Sehgal et al., 2017, 2020). The moderately high average resilience observed in this study is consistent with a potential role as a psychological buffer and is associated with coping with the chronic and relapsing challenges of IBD. Previous research has demonstrated that higher psychological resilience is independently associated with lower disease activity and fewer IBD-related surgeries among patients with Crohn's disease (Sehgal et al., 2017). In contrast to our findings, several studies have reported lower resilience levels among IBD outpatients, highlighting potential variability across patient populations and underscoring the importance of targeted interventions aimed at strengthening resilience (Cococcia et al., 2021; Dai et al., 2022; Dorrian et al., 2009).

Consistent with our hypothesis, resilience was significantly associated with better psychological and social functioning in IBD, exhibiting robust multivariate and predictive effects across psychosocial adjustment domains and underscoring its relevance within the context of chronic disease management. Higher resilience levels predicted greater engagement in personal health care, enhanced social participation, more positive emotional responses and hope for recovery, better understanding of treatment, and improved relationships with extended family members. It should be noted that the relatively low reliability of the extended family relationships subscale may have attenuated the observed associations for this domain. Moreover, resilience was associated with greater satisfaction with medical services and lower levels of psychological distress. These findings support the conceptualization of resilience as a significant psychological resource associated with emotional, social, and functional coping in individuals with chronic illness (Alsheikh & Alqudah, 2023).

Taken together, these findings align with previous evidence highlighting resilience as a broad adaptive capacity across chronic conditions, particularly in IBD populations, where higher resilience is associated with greater emotional stability, effective self-management, and sustained social functioning (Bannaga & Selinger, 2015; Xu et al., 2022). Resilient patients appear to be better equipped to navigate the psychological and behavioral demands of chronic illness, demonstrating enhanced self-regulation and greater psychological stability (Xu et al., 2022). Previous research similarly indicates that higher resilience is associated with reduced disease-related anxiety and depression, stronger treatment adherence, and improved quality of life among individuals with IBD (Bannaga & Selinger, 2015; Philippou et al., 2022; Sehgal et al., 2017; Taylor et al., 2018). Some studies highlight that resilient IBD patients often identify family as a primary source of strength and support, emphasizing the critical role of social connectedness in adaptive adjustment to chronic disease (Bernhofer et al., 2017; Dai et al., 2022).

It is important to highlight that resilience was negatively associated with physician-provided illness information, suggesting that individuals with lower resilience may rely more heavily on medical guidance and require greater informational support, whereas highly resilient patients may already possess higher illness awareness and self-efficacy, reducing their dependence on external information. However, alternative explanations should also be considered, such as differences in perceived communication quality, variations in satisfaction with medical care, characteristics of the measurement subscale, and contextual healthcare factors in Serbia. Available evidence indicates that the quality of patient-provider communication significantly impacts disease understanding, disease activity, and health-related quality of life (Ballou & Keefer, 2017;

Engel et al., 2021; Luo et al., 2021; Oliveira et al., 2007). Importantly, the right to clear and comprehensive medical information is legally guaranteed, underscoring the institutional recognition of communication as a fundamental component of patient care. In this context, the reciprocal relationship between patient and physician establishes the foundation of trust and collaboration, essential for effective information exchange, expression of concerns, and shared decision-making in diagnosis and treatment (Ballou & Keefer, 2017; Engel et al., 2021). These findings emphasize the need for tailored communication strategies that align with patients' psychological resources, fostering resilience and promoting better psychosocial adjustment.

Taken together, the present findings highlight the robust multivariate association between resilience and psychosocial adjustment. While the observed effect sizes are meaningful, it is important to note that the psychosocial domains are interrelated, which may partially contribute to the magnitude of these overall effects. Moreover, as our study employed a cross-sectional design, the associations observed should be interpreted as statistical rather than causal.

Notably, sociodemographic factors such as educational level, age, and sex did not significantly influence psychosocial outcomes in this study, suggesting that the beneficial effects of resilience on psychosocial functioning are largely independent of these variables, in line with previous research (Ng et al., 2017). However, given the predominantly female composition of the sample and its modest size, these findings should be interpreted with caution. This contrasts with earlier studies that reported potential moderating effects of sociodemographic characteristics on adaptation and disease management, highlighting the importance of context-specific investigations and the need to focus on psychological resources such as resilience rather than demographic predictors alone (Napolitano et al., 2025).

Collectively, resilience and dimensions of psychosocial adjustment operate in parallel, with their interconnection suggesting that enhancing one domain may positively influence the other. Thus, promoting resilience represents a valuable clinical target for improving both physical and psychosocial well-being in individuals with IBD, and vice versa (Napolitano et al., 2025). From a clinical and public health perspective, our findings underscore the importance of systematically assessing resilience within IBD care. Notably, resilience should be regarded as a modifiable factor that contributes to adaptive functioning and quality of life, rather than a fixed personality trait. Interventions designed to strengthen coping resources through psychological support, psychosocial interventions, and targeted education delivered by a multidisciplinary team (e.g., gastroenterologists, IBD nurses, psychologists, and other health educators) may reduce psychological burden and enhance overall quality of life (Engel et al., 2021; Thapwong et al., 2022). Integrating resilience-based strategies into multidisciplinary treatment protocols may therefore represents a cost-effective and sustainable approach to optimize patient outcomes and promote long-term psychosocial adaptation in IBD. However, recommendations for resilience-based interventions should be considered preliminary, pending evidence from longitudinal or interventional studies.

CONCLUSIONS AND LIMITATIONS

This study highlights resilience as a significant determinant of psychosocial adjustment among individuals with IBD. Participants with higher resilience demonstrated better self-care, greater emotional stability, enhanced social integration, and improved treatment comprehension and satisfaction with medical care, along with lower psychological distress and higher satisfaction with medical information. These findings suggest that resilience significantly predicted psychosocial adjustment outcomes.

However, several limitations should be noted. Specific measures of resilience and psychosocial adjustment tailored to the IBD population were not used. Generic resilience tools often include items that fail to capture the unique experiences of IBD patients, such as managing flare-ups, coping with social stigma, and addressing disease-specific mental health challenges (Mendiolaza et al., 2025). Our sample was relatively small and predominantly female, which limits generalizability. Recruitment through a patient association and online survey may have introduced selection bias, potentially favoring individuals who are more engaged with their condition or more technologically proficient. The cross-sectional design precludes causal inference, and self-reported measures may be influenced by response bias. Moreover, clinical indicators of disease activity and duration were not assessed, although these factors may moderate the relationship between resilience and psychosocial adjustment. Additionally, other potential personal predictors beyond resilience were not examined. Finally, the study was unable to examine mediation or moderation mechanisms. Future longitudinal and mixed-method studies are warranted to examine dynamic changes in resilience across illness phases and to identify protective psychological mechanisms within different IBD subgroups, and investigate additional factors contributing to psychosocial adjustment to illness. The potential role of patient associations as a substitute for, or complement to, other forms of social support, such as family support, should also be investigated in promoting psychosocial adjustment.

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