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The Relationship Between Perceived Stress and Burnout Among University Students: The Mediating Role of Resilience

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ABSTRACT. This study explores the link between perceived stress and burnout among university students and examines whether resilience mediates this relationship. Data were collected from 157 Hungarian minority students enrolled at a Romanian university using convenience and snowball sampling, which may introduce selection bias due to non-random participant recruitment. Participants completed the Perceived Stress Scale (PSS), Maslach Burnout Inventory-Student Survey (MBI-SS), and Connor-Davidson Resilience Scale (CD-RISC), all in Hungarian. All participants provided informed consent. Results showed a positive association between perceived stress and burnout, and a negative association between resilience and both perceived stress and burnout. Mediation analysis indicated that resilience partially mediates the relationship between perceived stress and burnout. These findings highlight resilience as a protective factor that mitigates the adverse impact of stress on student burnout. Moreover, results underscore the importance of targeted interventions for minority student populations in Eastern Europe.

Keywords: perceived stress, burnout, resilience, university students, protective factor

INTRODUCTION

University students encounter multiple stressors, including academic pressure, time constraints, and performance expectations. When these demands exceed available coping resources, stress can escalate and lead to burnout—a condition characterized by emotional exhaustion, cynicism toward studies,

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and reduced academic efficacy. While stress is a well-established predictor of burnout, individual psychological resources, such as resilience—the ability to adapt and recover from adversity—may help mitigate its effects.

Research on stress, burnout, and resilience has grown substantially in recent years, but far less is known about how these processes operate within Eastern European contexts. Hungarian minority students in Romania represent a distinct group whose academic experience may be shaped by additional cultural and systemic challenges, including language barriers, minority identity stress, and navigating dual cultural expectations (e.g., Benet-Martínez & Haritatos, 2005; Verkuyten, 2018). These factors could amplify vulnerability to academic burnout. Understanding how resilience operates in this group can inform culturally sensitive interventions.

Understanding the role of resilience—a capacity to adapt positively in the face of adversity—is particularly relevant in this context. Resilience may buffer the negative effects of perceived stress and protect students from burnout; however, evidence from minority student populations in Central and Eastern Europe remains scarce. Addressing this gap is important both for theoretical advancement and for designing culturally sensitive mental health interventions.

This study investigates whether resilience mediates the relationship between perceived stress and burnout among Hungarian minority university students in Romania. By focusing on this underexplored population, the research contributes to the literature on minority student well-being and offers practical implications for higher education support services within multicultural academic settings.

Theoretical Background

Academic burnout among university students has become a critical issue due to its psychological, behavioral and academic consequences (Dyrbye et al., 2014; Isa et al., 2021), including emotional exhaustion, cynicism, and reduced academic efficacy (Maslach & Leiter, 2016). Burnout is commonly defined as a syndrome that often emerges as a consequence of chronic stress—persistent demands that exceed an individual's coping resources (Maslach & Leiter, 2016). For university students, these stressors include heavy workloads, performance pressure, and uncertainty about future careers. When stress remains unmanaged, it can lead to severe outcomes such as depression, poor academic achievement, and even dropout or suicidal ideation (Dyrbye et al., 2014; Talih et al., 2018). Understanding the antecedents of burnout is therefore essential for supporting student well-being.

Perceived stress, refers to the subjective appraisal of life situations as unpredictable, overwhelming or uncontrollable (Cohen et al., 1995). This appraisal activates physiological and psychological responses that, over time, erode coping capacity. Chronic stress depletes emotional and cognitive resources, fostering feelings of inefficacy and detachment—core components of burnout (Isa et al., 2021). Empirical studies consistently demonstrate that higher perceived stress predicts greater burnout (Cohen et al., 1995; Stauder & Konkoly Thege, 2006). Moreover, sustained stress erodes cognitive, emotional, and motivational resources necessary for effective academic functioning (Pascoe et al., 2019; Ribeiro et al., 2017).

Resilience is a multifaceted construct broadly defined as an individual's capacity to successfully adapt to stress, adversity or trauma (Masten, 2001). Contemporary models conceptualize resilience not only as a stable personal trait but also as a dynamic process shaped by interactions between individual characteristics and environmental resources (Fletcher & Sarkar, 2013; Southwick et al., 2014).

Within academic settings, resilience promotes adaptive coping strategies, effective emotion regulation, and positive appraisals of challenges, thereby helping students sustain well-being under pressure. Higher resilience is consistently linked to lower perceived stress and reduced burnout symptoms among student populations (García-Izquierdo et al., 2017; Sarrionandia et al., 2018).

A growing body of evidence suggests that resilience may buffer the impact of stress on burnout by reducing maladaptive stress responses and promoting adaptive coping mechanisms. Studies across various student populations demonstrate negative associations between resilience and both perceived stress and burnout, with resilience frequently emerging as a mediator in this relationship (Eaves & Payne, 2019; Duarte et al., 2022). These findings indicate that while stress increases vulnerability to burnout, resilience can partially counteract this effect—though typically not enough to eliminate it entirely, suggesting partial mediation.

Despite growing research on stress, burnout, and resilience, relatively little is known about these processes among minority student populations in Eastern Europe. Hungarian minority students in Romania represent a distinctive context for studying stress and burnout. These students often navigate dual cultural identities, language barriers, and systemic minority-specific challenges within higher education (Benet-Martínez & Haritatos, 2005; Paat, 2013; Verkuyten, 2018). Such factors may amplify stress and influence coping mechanisms, making resilience particularly relevant. Investigating this group provides theoretical insight into how cultural and contextual variables interact with psychological processes and offers practical guidance for culturally sensitive interventions.

The Present Study

The primary aim of the research was to investigate the relationship between perceived stress and burnout among Romanian university students. A secondary goal is to assess the association between resilience and both stress and burnout, as it is hypothesized that students with higher levels of resilience are better equipped to manage stress and are therefore less prone to burnout. Furthermore, the study seeks to determine whether resilience acts as a mediator between perceived stress and burnout—specifically, whether it can buffer or reduce the negative impact of stress on the development of burnout.

METHOD

Participants

A total of 157 university students participated in the study. The sample included individuals over the age of 18 from various academic fields and levels. All participants attended the Babes-Bolyai University, a higher education institution in Romania. Most participants were female (84.7%) and between the ages of 18 and 25 (M=21.5, SD=2.65). Most participants were students, while some both studied and worked. The participants were native Hungarian speakers living in Romania, a minority.

Procedure

The study employed a cross-sectional, quantitative design. Data were collected online via Google Forms, distributed through social media platforms to ensure accessibility. Participation was voluntary and anonymous, and informed consent was obtained in accordance with ethical guidelines.

For data analysis, correlational and mediation analyses were conducted using the PROCESS macro (Model 4) in SPSS. Resilience was specified as the mediator between perceived stress and burnout. To test the significance of the indirect effect, bootstrapping procedures with 5,000 resamples were applied, generating bias-corrected 95% confidence intervals for the mediation paths.

MEASURES

Demographics

Participants were asked to respond to several demographic questions: gender, age, year of study, higher education institution attendance.

The Perceived Stress Scale (PSS) assesses the extent to which individuals perceive situations as stressful. Participants completed the Hungarian version of the PSS (Stauder & Konkoly Thege, 2006), which contains 14 items rated on a 0-4 Likert scale, 0 means "never" and 4 means "very often". The questionnaire includes items such as: "*How often during the past month have you felt confident that you could solve your personal problems?*" or "*How often during the past month have you felt that your difficulties had piled up so high that you could no longer cope with them?*". Higher scores indicate greater perceived stress (Cronbach's $\alpha = .87$).

The Maslach Burnout Inventory - Student Survey (MBI-SS) measures burnout across emotional exhaustion, cynicism and reduced academic efficacy. The Hungarian version (Hazai et al., 2010) was completed by the participants. MBI-SS contains 15 items rated on a 0-6 Likert scale, 0 means "not at all", and 6 means "every day". Items in the questionnaire include, for example, "*I am already tired when I wake up in the morning if I have to face another day at university*" or "*I am less interested in my studies now than when I enrolled at university*". Higher scores reflect higher burnout (Cronbach's $\alpha = .67$).

The Connor-Davidson Resilience Scale (CD-RISC) is a 10-item scale measuring resilience, rated on a 0-4 Likert scale, 0 means "not true at all", while 4 means "almost always true". The Hungarian version (Járai et al., 2015) includes items such as: "*I always give my best effort, no matter what the task is*", or "*I am able to adapt to change*". Higher scores indicate greater resilience (Cronbach's $\alpha = .80$)

RESULTS

Descriptive statistics are presented in Table 1. Correlations supported all hypotheses.

Table 1. *Means, Standard Deviations, Skewness, and Kurtosis of the Variables (N=157)*

Variable	*M*	*SD*	*Skewness*	*Kurtosis*
The Perceived Stress Scale	31.00	8.57	-.48	.12
The Maslach Burnout Inventory - Student Survey	46.00	10.54	.46	-.27
The Connor-Davidson Resilience Scale	27.00	6.40	-.30	-.67

Regression analysis indicated that perceived stress positively predicted burnout ($B = 0.462$, $\beta = 0.375$, $p < .001$) (Table 2), suggesting that higher levels of perceived stress among university students were associated with increased symptoms of burnout. The standardized beta coefficient ($\beta = 0.375$) suggests a moderate effect size, confirming the strength of the relationship between stress and burnout.

Resilience negatively correlated with both stress (B = –0.317, β = –0.425, p < .001) **and burnout** (B = –0.266, β = –0.162, p = .043) (Table 2). Specifically, perceived stress showed a significant negative relationship with resilience (B = –0.317, β = –0.425, p < .001), implying that students experiencing higher stress reported lower levels of resilience. Additionally, resilience was significantly negatively associated with burnout (B = –0.266, β = –0.162, p = .043), suggesting that students with greater resilience experienced fewer symptoms of burnout.

Mediation analysis using PROCESS macro (Model 4) with 5,000 bootstrap samples revealed that resilience partially mediated the relationship between perceived stress and burnout. The unstandardized indirect effect was ab = –0.084, 95% CI [–0.162, –0.012], indicating that the indirect effect was statistically significant because the confidence interval did not include zero. The direct effect of perceived stress on burnout remained significant after accounting for resilience: B = 0.467, β = 0.379, p < .001), confirming partial mediation.

Table 2. *Mediation Analysis: The Relationship Between Perceived Stress, Burnout, and Resilience*

Relationship	B	SE	β	t	p	R^2	ΔR^2
Model 1: Perceived Stress → Burnout (Path c)	.462	.092	.375	5.042	< .001**	.141	.135
Model 2: Perceived Stress → Resilience (Path a)	-.317	.054	-.425	-5.844	< .001**	.181	.175
Model 3: Resilience → Burnout (Path b)	-.266	.130	-.162	-2.041	.043*	.141	.130
Model 3: Perceived Stress → Burnout (Path c')	.467	.101	.379	4.599	< .001**	.141	.130

N=157, *p<0.05, **p<0.01

These findings suggest that resilience acts as a **partial mediator**, mitigating but not eliminating the impact of stress on burnout.

DISCUSSION

The present study provides evidence that perceived stress significantly predicts academic burnout among university students and that resilience partially mediates this relationship. These findings align with previous research (Isa et al., 2021; García-Izquierdo et al., 2017) and extend the literature by examining a culturally distinctive population—Hungarian minority students in Romania.

Burnout develops when prolonged stress overwhelms coping resources. High perceived stress activates persistent physiological and psychological responses, such as heightened cortisol levels and negative cognitive appraisals, which gradually erode emotional energy and motivation. This depletion manifests as emotional exhaustion, cynicism toward academic tasks, and feelings of inefficacy—core dimensions of burnout (Maslach & Leiter, 2016). In academic settings, stressors such as heavy workloads, performance pressure, and uncertainty about future careers amplify this process, creating a cycle where stress perpetuates disengagement and reduced academic functioning.

Resilience operates as a protective factor by promoting adaptive coping strategies, emotional regulation, and positive reframing. Students with higher resilience are more likely to interpret challenges as manageable, maintain optimism, and mobilize social support, thereby reducing stress related harm. In this study, resilience partially mediated the stress–burnout link, indicating that while resilience buffers the negative impact of stress, it does not eliminate it entirely. This suggests that resilience alone cannot fully counteract systemic and institutional stressors, highlighting the need for multi-level interventions.

The inclusion of Hungarian minority students in Romania adds a novel dimension to the understanding of stress and burnout. These students often navigate dual cultural identities, language barriers, and potential marginalization within the educational system. Such factors may intensify stress and influence coping strategies, making resilience particularly critical for this population. By focusing on this group, the study underscores the importance of culturally sensitive approaches to student mental health and demonstrates that resilience-building interventions should consider cultural identity and minority-specific challenges.

Given the partial mediation, resilience training should be integrated into student support services but complemented by institutional reforms that reduce academic pressure. Programs such as mindfulness-based stress reduction, peer support groups, and resilience workshops can strengthen individual coping capacities. Simultaneously, universities should address structural stressors by revising workload expectations, improving access to mental health resources, and fostering inclusive environments that support minority students.

Limitations and Future Research

Several limitations should be acknowledged. First, the cross-sectional design restricts causal interpretations. Future research should employ longitudinal or experimental designs to clarify the temporal dynamics between stress, resilience, and burnout.

Second, the sample consisted exclusively of Hungarian minority students in Romania, additionally, were drawn from only one university, which limits generalizability to other cultural or educational contexts. While this focus provides valuable insight into a unique population, cultural specificity means findings may not apply to broader student groups. Future studies should include diverse samples across different regions and cultural backgrounds. Third, the gender distribution was highly unbalanced, with 84.7% female participants. Gender differences in stress perception and coping strategies may influence burnout risk, so future research should aim for more balanced samples or examine gender as a moderator.

Fourth, the internal consistency of the Maslach Burnout Inventory–Student Survey (MBI-SS) was relatively low ($\alpha = .67$), which may affect the precision of burnout measurement. Researchers should consider alternative instruments or additional reliability checks in future studies.

Fifth, all measures relied on self-reported data, which may introduce social desirability or recall bias. Finally, future research should explore additional moderators and mediators, such as social support, academic self-efficacy, and coping styles, to provide a more comprehensive understanding of the mechanisms underlying stress and burnout. Longitudinal designs and culturally sensitive interventions will be essential for advancing this field.

CONCLUSION AND IMPLICATIONS

This study provides compelling evidence that perceived stress significantly contributes to academic burnout among university students, and that resilience serves as a partial mediator in this relationship. The findings underscore the importance of resilience as a psychological buffer that can mitigate—but not entirely eliminate—the adverse effects of stress on student well-being. While students with higher resilience reported lower levels of burnout, the persistent direct effect of stress on burnout highlights the multifaceted nature of academic strain and the need for comprehensive support strategies.

For Hungarian minority students in Romania, these findings carry particular relevance. This population faces unique cultural and systemic challenges, such as language barriers, identity-related stressors, and limited access to tailored support, that may intensify academic strain.

The implications of these findings are twofold. First, they emphasize the critical role of resilience-building interventions in higher education settings. Programs aimed at enhancing students' coping mechanisms—such as resilience training, mindfulness-based stress reduction, and peer support initiatives—may serve as effective tools in reducing burnout and promoting psychological well-being. These interventions should be integrated into Eastern European university

support services and tailored to the specific needs of minority student populations, particularly Hungarian-speaking students in Romania, who may face additional cultural and systemic stressors.

Second, the results point to the necessity of addressing institutional and environmental contributors to student stress. While individual-level interventions are valuable, they must be complemented by systemic changes that reduce academic pressure, improve access to mental health resources, and foster inclusive, supportive learning environments. Universities in Eastern Europe should consider revising academic policies, workload expectations, and student support frameworks to create a more balanced and health-promoting educational experience.

Future research should build on these findings by employing longitudinal designs to explore causal pathways and by examining additional moderating variables such as social support, academic self-efficacy, and cultural identity. Expanding the sample to include diverse student populations across different cultural and educational contexts will enhance the generalizability of the results.

In conclusion, this study highlights the dual importance of strengthening individual resilience and reforming institutional practices to combat academic burnout. By adopting a holistic approach that addresses both personal and systemic factors, universities can better support student mental health and academic success, particularly for minority students navigating unique cultural challenges in Eastern Europe.

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