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Resilience of psychology students as a factor in preventing professional burnout during war

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Abstract

The Ukrainian system of psychological assistance faces the threat of losing an entire generation of specialists because of professional burnout in the active phase of the military conflict. Researchers identified resilience as a key buffer between traumatic stress and professional self-preservation. The aim of the study was to provide a thorough theoretical and empirical justification of psychological resilience as a factor in preventing professional burnout in psychology students. The study involved 320 students of master's programmes in psychology from different Ukrainian higher education institutions. The study employed standardized psychometric tools: the Resilience Scale, the Burnout Inventory, the Emotion Regulation Questionnaire, and the Traumatic Exposure Severity Scale. All techniques were adapted and showed satisfactory reliability rates. The study found that resilience was a significant mediator between traumatic exposure and burnout. There was a strong negative correlation between resilience and burnout. The targeted resilience programme yielded statistically significant improvements in the experimental group with a large effect size. The results confirm the key role of resilience as a buffer against burnout in wartime, while revealing its limited protective effectiveness under extremely intense stress. The identification of three resilience profiles and the identification of emotional regulation as the most powerful component justify the need for differentiated educational interventions. Therefore, the integration of targeted resilience development into the training of psychology students is critical for maintaining the human resource potential of the psychological service. The effectiveness of targeted development of psychological resilience, in particular its key component –emotional regulation, is empirically confirmed. It is a critically important factor in preventing professional burnout among psychology students studying in wartime, which helps to preserve the human resource potential of the psychological service.

Keywords: Longitudinal study; Mental health professionals; Professional burnout; Protective factors; Psychological resilience; War trauma

1. Introduction

The full-scale military invasion of Ukraine in February 2022 has placed an unprecedented burden on the country's mental health system (Korniiko et al., 2024). Mental health professionals work under prolonged stress, constantly confronted with grief and severe post-traumatic symptoms (Popovych et al., 2022), leading to elevated levels of professional burnout (Mulska et al., 2022). This crisis is particularly acute during professional training, characterized by the phenomenon of shared trauma (Leshem et al., 2025), where the traditional boundaries between the practitioner's personal safety and the client's trauma are blurred.

Psychology students in clinical placements show a high risk of early burnout and secondary traumatization (Sarraf-Yazdi et al., 2021). Recent evidence suggests that students affected by the invasion are at risk of "professional attrition" even before formal entry into the workforce (Snoubar et al., 2025). For students still building their professional identity, the destruction of usual balance mechanisms due to military threats often leads to premature professional dropout. Therefore, identifying factors that restrain burnout has strategic importance for preserving the human resource potential of psychological services (Chen et al., 2022).

Current discourse increasingly conceptualizes resilience not merely as a fixed personal trait, but as a multidimensional adaptive process shaped by cognitive, affective, temporal, and contextual

factors that support individuals' capacity to respond to educational challenges (Akkan & Horzum, 2024; Çelik et al., 2023; Eren et al., 2025). In the Ukrainian context, resilience acts as a critical buffer that determines whether traumatic exposure translates into chronic exhaustion or functional adaptation (Troy et al., 2023). However, a significant gap remains in research regarding how resilience components, specifically emotion regulation strategies, interact with burnout trajectories over time in active conflict zones. By identifying specific "risk profiles" among students, this research aims to provide an empirical foundation for university-based support systems to ensure the sustainability of future specialists (Smout et al., 2022).

1.1. Burnout among Mental Health Professionals in Wartime Contexts

Professional burnout is understood as a consequence of chronic organisational and emotional stress resulting from excessive demands and insufficient resources (Warlick et al., 2021). In wartime, the classic three-dimensional model of burnout (emotional exhaustion, depersonalisation, reduced personal efficacy) is amplified by secondary traumatisation (Emerson et al., 2023), creating a unique trauma-exhaustion syndrome among helping professions in conflict zones.

1.2. Early Professional Burnout among Psychology Students

Students are exposed to traumatic material during practical training, sometimes without adequate preparation or supervision (Sancak Aydın & Nalbant, 2026). Research has shown that secondary traumatic stress, compassion fatigue, and vicarious trauma are significant risks for trainees in clinical psychology (Sarraf-Yazdi et al., 2021). These conditions can accelerate burnout and lead to abandonment of the profession. The lack of systematic data on students' resilience in wartime complicates the development of effective educational and preventive programmes (Hamka, 2023; Wiedermann et al., 2023).

1.3. Theoretical Models of Resilience

Resilience in this study is defined not as a static trait but as a dynamic process of successful adaptation to significant stress (Troy et al., 2023). In the academic literature, resilience has been defined as the process of successful adaptation to significant stress (Liu et al., 2021). Influential frameworks include Masten's (2001) "ordinary magic" perspective, Bonanno's (2004) work on trauma resilience, and the Connor-Davidson model (Connor & Davidson, 2003). Resilience encompasses emotional regulation, cognitive flexibility, self-efficacy, and the ability to preserve internal resources (Panourgia et al., 2022; Smout et al., 2022). Some scholars have emphasized the relationality of resilience, critiquing individualistic approaches (Kałwak & Weihgold, 2022). Others have extended resilience frameworks to educational leadership and teacher performance (Hamka, 2023). Recent work has integrated resilience into broader models of impulsivity and psychological traits (Huang et al., 2024).

1.4. The Buffering Role of Resilience

According to Lazarus and Folkman's (1987) transactional theory of stress and coping, individuals first engage in primary appraisal (evaluating the threat of a stressor, such as war trauma) and then secondary appraisal (assessing their coping resources and options). Resilience acts as a key resource during secondary appraisal, facilitating adaptive coping strategies (e.g., cognitive reappraisal, seeking social support) and reducing maladaptive responses (e.g., avoidance, emotion suppression). When personal and contextual resources are insufficient to buffer sustained demands and chronic stress, individuals may become more vulnerable to burnout (İlya, 2023; Sarzhanova & Nurgabdeshov, 2025; Tóth & Jagodics, 2025).

1.5. Gap in the Current Literature

Despite growing interest in resilience, three important gaps remain. First, there is little evidence on how resilience models function under conditions of chronic and extreme trauma, such as a protracted war. Most existing studies have examined resilience in response to discrete traumatic events or short-term stressors, leaving open the question of whether the same mechanisms operate

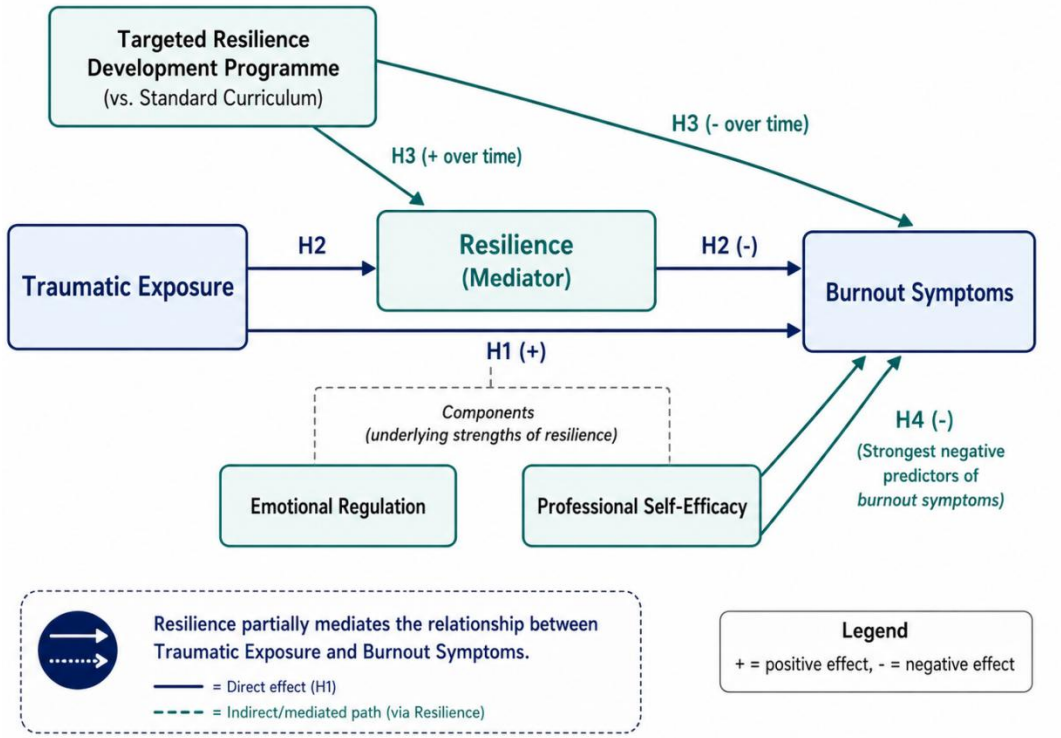
when stress is unrelenting and cumulative. Second, early professional burnout among students has been underexplored, especially in non-Western conflict settings. While burnout in practising psychologists is well documented, the trajectory from training to profession under wartime conditions remains largely unknown. Third, the dynamic and multidimensional nature of resilience has rarely been studied longitudinally in student samples. Cross-sectional designs cannot capture how resilience components (e.g., emotional regulation, self-efficacy) interact and change over time as trauma exposure accumulates. The present study addresses these gaps by (a) examining resilience as a mediator between traumatic exposure and burnout among Ukrainian psychology students over 18 months, (b) identifying which resilience components are most protective, and (c) testing a targeted intervention to modify resilience trajectories.

2. Conceptual Framework and Hypotheses

This study is grounded in Lazarus and Folkman's transactional theory of stress and coping. According to this theory, individuals first evaluate the significance and threat of a stressor through primary appraisal and then assess their coping resources through secondary appraisal. In this study, war-related traumatic exposure during clinical training is considered a significant stressor for psychology students. Resilience, including emotional regulation, cognitive flexibility, self-efficacy, and social support, functions as a key coping resource. When these resources are perceived as sufficient, students are more likely to use adaptive coping strategies; when they are insufficient, maladaptive coping may prevail and contribute to professional burnout.

Based on this theoretical framework, we propose the conceptual model illustrated in Figure 1. The model posits that traumatic exposure affects burnout both directly and indirectly through resilience. Additionally, specific components of resilience (emotional regulation and professional self-efficacy) are hypothesised to be the strongest protective factors.

Figure 1
Conceptual model of the relationships between traumatic exposure, resilience, and burnout



The following hypotheses were tested:

H1. Traumatic exposure will positively predict burnout symptoms among psychology students.

Rationale: Chronic exposure to trauma-related material during wartime clinical training is expected to increase emotional exhaustion, depersonalisation, and reduced efficacy (Emerson et al., 2023; Warlick et al., 2021).

H2. Resilience will mediate the relationship between traumatic exposure and burnout, such that higher resilience is associated with lower burnout after controlling for trauma level.

Rationale: According to the transactional model, resilience resources during secondary appraisal reduce the negative impact of stressors (Lazarus & Folkman, 1987; Troy et al., 2023). Partial mediation is expected because extreme trauma may also have direct effects.

H3. Participation in a targeted resilience development programme will lead to lower burnout levels and higher resilience over time compared to participation in a standard curriculum. *Rationale:* Previous intervention studies have shown that resilience skills can be trained, with effects persisting over several months (Brites et al., 2024; Jianping et al., 2024). The present study tests this in a wartime context.

H4. Among components of resilience, emotional regulation and professional self-efficacy will be the strongest negative predictors of burnout.

Rationale: Emotional regulation has been identified as a core mechanism of resilience (Gross & John, 2003; Razak et al., 2025), and self-efficacy supports sustained coping under stress (Nakhostin-Khayyat et al., 2024)

3. Methodology

3.1. Research Design

The study employed a three-wave quasi-experimental longitudinal design with an intervention group and a control group. Random assignment of participants to groups was not possible due to wartime conditions, university programme constraints, and ethical considerations (students could not be forced into or kept out of a potentially beneficial intervention). Data were collected at three time points over 18 months.

3.2. Research Process

Wave 1 (baseline assessment; May – November 2023). A cross-sectional survey of 320 master's students was conducted to establish baseline levels of resilience, burnout, emotion regulation, and traumatic exposure. After the baseline assessment, the intervention and control groups were formed based on university affiliation and programme availability.

Wave 2 (intervention and monitoring; December 2023 – June 2024). The intervention group received a targeted resilience development programme (described below in the Intervention subsection). The control group followed the standard curriculum without any additional resilience training. A repeat measurement was conducted after six months to assess interim changes.

Wave 3 (follow-up evaluation; May – July 2025). Final measurement was conducted 12 months after the baseline to assess long-term effects of the intervention and to test the mediation hypothesis.

3.3. Participants

The sample consisted of 320 master's students in psychology from four public universities in Ukraine. Inclusion criteria were: (a) second-year master's student, (b) active practical training involving contact with traumatised clients during the war. The mean age of the participants was 22.3 years (SD = 1.7). The intervention group comprised 185 students (78% women, mean age 22.4 ± 1.6), and the control group comprised 135 students (76% women, mean age 22.2 ± 1.8). There were no statistically significant demographic differences between groups at baseline. The unequal group sizes resulted from different numbers of students available and willing to participate in the intervention across universities.

An a priori power analysis using G*Power 3.1 for repeated-measures ANOVA indicated a required minimum of 279 participants (power = 0.95, α = .05, effect size = 0.20). For structural equation modelling [SEM] and hierarchical linear modelling [HLM], the achieved sample of 320 exceeds recommended minimums (e.g., 10–20 cases per estimated parameter; Kline, 2016).

3.4. Measures

All instruments were translated into Ukrainian and back-translated by independent bilingual translators. Cognitive interviews with 15 expert psychologists were conducted to confirm contextual validity in wartime. Pilot testing was performed on a separate sample of 45 psychology students. Reliability coefficients (Cronbach's α and McDonald's ω) for each scale across the three waves ranged from .78 to .91, indicating satisfactory internal consistency. Detailed reliability statistics for each wave are presented in Appendix 1.

3.4.1. Psychological resilience

The Connor-Davidson Resilience Scale [CD-RISC-25] (Connor & Davidson, 2003) was used to measure overall psychological resilience. The scale contains 25 items rated on a 5-point Likert scale (0 = not true at all to 4 = true nearly all the time). It assesses five subscales: personal competence (8 items), trust in one's instincts/tolerance of negative affect (7 items), positive acceptance of change (5 items), control (3 items), and spiritual influences (2 items). Total scores range from 0 to 100, with higher scores indicating greater resilience. In this study, the Ukrainian adaptation demonstrated excellent reliability (α range = .86–.89; ω range = .88–.91 across waves).

3.4.2. Professional burnout

The Maslach Burnout Inventory – Student Survey [MBI-SS] (Yavuz & Dogan, 2014) was adapted for psychology trainees in wartime. The original MBI-SS measures three dimensions: emotional exhaustion (5 items), depersonalisation (4 items), and reduced professional efficacy (6 items), rated on a 7-point frequency scale (0 = never to 6 = every day). In this study, we added three additional items to capture secondary trauma-related burnout specific to wartime clinical practice. The added items are: (a) "I feel numb after listening to a client's war story", (b) "I have intrusive images of my clients' traumatic experiences", and (c) "I avoid discussing war-related topics even when clinically relevant". These items were developed through expert consultation and pilot testing. The modified scale (total 18 items) showed satisfactory reliability (α range = .84–.88; ω range = .85–.89 across waves).

3.4.3. Emotion regulation

Two complementary measures were used. The Emotion Regulation Questionnaire [ERQ] (Gross & John, 2003) consists of 10 items rated on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree), measuring two strategies: cognitive reappraisal (6 items, α = .82–.85) and expressive suppression (4 items, α = .78–.81). The Difficulties in Emotion Regulation Scale-16 [DERS-16] (Lawlor et al., 2021) is a 16-item short form rated on a 5-point scale (1 = almost never to 5 = almost always), assessing six domains: non-acceptance of emotional responses, difficulties engaging in goal-directed behaviour, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. The DERS-16 total score showed high reliability (α = .88–.90; ω = .89–.91).

3.4.4. The Traumatic Exposure Severity Scale [TESS]

TESS was developed for this study to quantify occupational traumatic stress during practical training. The scale contains 15 items rated on a 4-point scale (0 = never to 3 = very often), measuring the frequency and intensity of contact with different types of traumatic events (e.g., hearing detailed accounts of violence, witnessing clients' emotional breakdowns, working with bereaved families). Exploratory factor analysis [EFA] on a pilot sample (n = 45) supported a one-factor solution explaining 58% of the variance. Confirmatory factor analysis [CFA] on the main sample (n = 320) showed acceptable fit: CFI = 0.92, RMSEA = 0.07. Factor loadings ranged from 0.62 to 0.84. Average variance extracted [AVE] was 0.55, and composite reliability [CR] was 0.92, indicating adequate convergent validity. Internal consistency was high (α = .87–.89; ω = .88–.90 across waves).

3.4.5. Secondary traumatic stress.

The Secondary Traumatic Stress Scale [STSS] (Bride et al., 2004) was used as an additional dependent variable to validate the burnout findings. The STSS contains 17 items rated on a 5-point frequency scale (1 = never to 5 = very often), measuring three subscales: intrusion (5 items), avoidance (7 items), and hyperarousal (5 items). The scale assesses symptoms directly related to indirect trauma exposure through work with traumatised clients. In this study, the STSS helped determine whether the resilience intervention also reduced secondary trauma symptoms beyond general burnout. Reliability was good (α = .86–.88; ω = .87–.89 across waves).

3.5. Intervention Programme

The intervention group received a 12-week resilience training programme. Each session lasted 90 minutes and was delivered weekly in small groups (8–12 participants). Sessions were led by three clinical psychologists with at least five years of experience in trauma-focused interventions. Facilitators received a two-day standardised training on the programme manual.

Table 1
The programme consisted of four modules:

Module	*Focus*	*Sessions*	*Techniques*
1	Emotional regulation	4	Cognitive reappraisal, mindful awareness, distress tolerance
2	Professional self-efficacy	3	Realistic goal setting, problem-solving under uncertainty, role-playing clinical scenarios
3	Cognitive flexibility	3	Restructuring trauma-related beliefs, perspective-taking, meaning-making
4	Social support utilisation	2	Building peer supervision networks, seeking mentorship, balancing empathy with self-protection

Each session included psychoeducation, group discussion, skills practice, and homework assignments. Booster sessions (one 60 minute session) were provided at months 3 and 6 after the intervention. The control group followed the standard curriculum without any additional resilience training.

3.6. Data Analysis Methods

The overall attrition rate across three waves was 15% (48 of 320 participants). Missingness was not systematically related to baseline resilience or burnout (Little's MCAR test: χ^2 = 34.2, df = 29, p = .23). Missing data were handled using full information maximum likelihood [FIML] under the missing-at-random assumption. The primary analytical strategy included multilevel modelling [HLM] for change trajectories, latent growth curve modelling [LGCM] to compare groups, structural equation modelling with bootstrapping (5000 samples) to test mediation, and latent class analysis [LCA] to identify resilience profiles with model selection based on BIC, AIC, entropy, and the LMR test. Analyses were conducted in R 4.3 (packages lavaan, nlme, psych) and SPSS 29. Model fit was evaluated using CFI > 0.90, RMSEA < 0.08, and SRMR < 0.08.

4. Results

4.1. Key Findings

Descriptive statistics demonstrate consistent trends in the distribution of the main variables (Table 2). Reliability coefficients of all instruments exceeded acceptable values (α = .78 − .91). Correlation analysis (see Table 3) revealed a strong negative relationship between resilience and burnout symptoms (r = −.51, p < .01). Participants with higher CD-RISC-25 scores demonstrated lower levels of emotional exhaustion and depersonalization on the MBI-SS scale. Multilevel modelling revealed significant differences in resilience trajectories between study waves (F(2,957) = 8.45, p < .001, η^2 = 0.12). Emotional regulation was identified as the most significant protective factor against burnout (β = −0.38, p < .001).

Table 2
Descriptive statistics of the main study variables

Indicator	*Group*	*Wave 1*	*Wave 2*	*Wave 3*	*p (between groups)*	*Cohen's d*
Resilience (CD-RISC-25)						
M ± SD	EG	68.3 ± 12.5	72.1 ± 11.8	75.6 ± 10.2	<.001	0.85
[95% CI]		[66.2-70.4]	[70.3-73.9]	[73.9-77.3]		
M ± SD	CG	67.9 ± 12.8	63.5 ± 13.5	59.8 ± 14.3		
[95% CI]		[65.7-70.1]	[61.2-65.8]	[57.3-62.3]		
Emotional exhaustion (MBI-SS)						
M ± SD	EG	24.8 ± 8.1	21.3 ± 7.4	18.7 ± 6.8	<.001	0.92
[95% CI]		[23.5-26.1]	[20.1-22.5]	[17.6-19.8]		
M ± SD	CG	24.3 ± 8.6	28.9 ± 9.3	32.4 ± 10.1		
[95% CI]		[22.8-25.8]	[27.3-30.5]	[30.7-34.1]		
Cognitive reappraisal (ERQ)						
M ± SD	EG	5.3 ± 1.3	5.8 ± 1.1	6.2 ± 0.9	<.001	0.78
[95% CI]		[5.1-5.5]	[5.6-6.0]	[6.0-6.4]		
M ± SD	CG	5.1 ± 1.5	4.7 ± 1.6	4.3 ± 1.7		
[95% CI]		[4.8-5.4]	[4.4-5.0]	[4.0-4.6]		
Traumatic exposure (TESS)						
M ± SD	EG	18.1 ± 6.0	19.3 ± 6.5	17.8 ± 6.8	.521	0.12
[95% CI]		[17.2-19.0]	[18.3-20.3]	[16.8-18.8]		
M ± SD	CG	18.6 ± 6.5	18.8 ± 7.2	18.1 ± 7.5		
[95% CI]		[17.5-19.7]	[17.6-20.0]	[16.8-19.4]		
Regulatory difficulties (DERS-16)						
M ± SD	EG	31.8 ± 10.1	28.4 ± 9.3	25.1 ± 8.6	<.001	0.95
[95% CI]		[30.3-33.3]	[27.0-29.8]	[23.8-26.4]		
M ± SD	CG	32.5 ± 10.8	37.2 ± 11.5	40.8 ± 12.3		
[95% CI]		[30.6-34.4]	[35.2-39.2]	[38.7-42.9]		
Secondary trauma (STSS)						
M ± SD	EG	28.1 ± 9.5	25.3 ± 8.7	22.8 ± 7.9	<.001	0.88
[95% CI]		[26.7-29.5]	[24.0-26.6]	[21.6-24.0]		
M ± SD	CG	28.8 ± 10.2	34.6 ± 11.1	38.9 ± 12.4		
[95% CI]		[27.0-30.6]	[32.7-36.5]	[36.8-41.0]		

Note. *p*-value calculated using multivariate ANOVA; Cohen's d reflects the effect size between groups at the third wave of the study; all scales demonstrated satisfactory reliability (ω = .82−.91)

Statistical analysis revealed significant intergroup differences in most of the studied indicators ($p < .001$). The most pronounced positive changes were observed in the EG for resilience and emotional burnout. The effect size indicates a high practical significance of the intervention. The only indicator that did not demonstrate statistically significant intergroup differences was the level of traumatic exposure ($p = .521$).

Table 3
Correlations between the main study variables (third wave)

Variable	*Group*	*1*	*2*	*3*	*4*	*5*
1. Resilience	EG	—				
	CG	—				
2. Emotional exhaustion	EG	−.35**	—			
	CG	−.58**	—			
3. Depersonalization	EG	−.28**	.45**	—		
	CG	−.52**	.75**	—		
4. Emotional regulation	EG	.55**	−.40**	−.32**	—	
	CG	.48**	−.55**	−.45**	—	
5. Traumatic exposure	EG	−.22*	.28**	.25**	−.18*	—
	CG	−.42**	.50**	.46**	−.35**	—

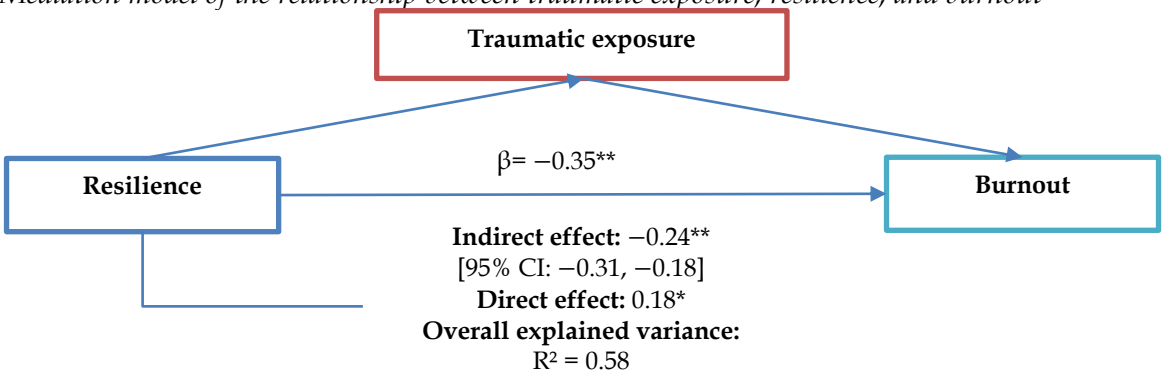
Note. *$p < .05$; **$p < .01$

Correlation analysis revealed significant between-group differences in the relationships between variables. In the EG, significantly weaker correlations were observed between traumatic exposure and burnout symptoms, as well as between resilience and burnout. The most pronounced differences were found in the relationship between depersonalization and emotional exhaustion (r = .45 in the EG versus r = .75 in the CG), which may indicate the effectiveness of the intervention in breaking this pathological relationship.

Mediation analysis (see Figure 2) confirmed the hypothesis of the mediated role of resilience in the relationship between traumatic exposure and burnout (indirect effect). The direct effect of traumatic exposure on burnout remained statistically significant (direct effect), indicating partial mediation. The obtained results indicate that resilience performs a protective function, reducing the negative impact of traumatic stress on the development of professional burnout.

Figure 2

Mediation model of the relationship between traumatic exposure, resilience, and burnout



Note. *p < .05; **p < .01; Indirect effect = −0.24; 95% CI [−0.31, −0.18].

The mediation model shows the role of resilience in the interaction between stress and burnout. Resilience partially mediates between traumatic exposure and burnout. The indirect effect was -0.24 and was statistically significant. The model explained 58% of the variance in burnout, indicating its high predictive power.

4.2. Identified Relationships

SEM demonstrated excellent fit indices for the comprehensive theoretical model (CFI = 0.94, RMSEA = 0.045, SRMR = 0.038). The model explained 58% of the variance in burnout symptoms, with emotional regulation (β = −0.42, p < .001) and personal competence (β = −0.35, p < .01) emerging as the most significant components of resilience (see Table 3).

Table 4

Regression analysis of burnout symptoms on resilience components in the EG

Predictor	*β*	*B*	*SE B*	*t*	*p*	*95% CI for B*	*sr²*	*VIF*
Emotional Regulation	−0.42	−0.38	0.07	−5.43	<.001	[−0.52; −0.24]	0.18	1.24
Personal Competence	−0.35	−0.31	0.08	−3.88	.002	[−0.47; −0.15]	0.12	1.31
Acceptance of Change	−0.28	−0.25	0.09	−2.78	.012	[−0.43; −0.07]	0.08	1.42
Control	−0.24	−0.21	0.10	−2.10	.045	[−0.41; −0.01]	0.04	1.53
Spiritual Influences	−0.15	−0.13	0.10	−1.30	.234	[−0.33; 0.07]	0.02	1.67

Note. β – standardized regression coefficient; B – unstandardized coefficient; SE B – standard error of the coefficient; sr² – partial variance (unique contribution of the predictor); VIF – variance inflation factor.

The obtained data indicate a differentiated contribution of individual components of resilience to the prevention of burnout. Emotional regulation and personal competence demonstrated the highest protective efficacy, which confirms their key importance in maintaining professional health. Acceptance of change and control also showed smaller but statistically significant effects. Spiritual influences did not demonstrate significant protection against burnout in this sample. The regression model as a whole confirms the hypothesis of the protective role of resilience, with its

different components having different predictive power. The obtained results indicate the need for a differentiated approach to the development of resilience in educational programmes for psychology students.

4.3. Unexpected and Differentiated Results

The analysis revealed several unexpected patterns that have important practical implications. Moderation analyses showed that the protective effect of resilience was significantly enhanced by practical experience working with traumatized clients ($\Delta R^2 = 0.08$, $p < .01$). The EG students with more than 6 months of practice demonstrated a stronger protective effect of resilience ($\beta = -0.58$, $p < .001$) compared to those with less experience ($\beta = -0.32$, $p < .05$).

Latent class analyses identified three distinct resilience profiles: Adaptive Regulators (42%), Difficulty Fighters (35%), and Risk Group (23%). The Risk Group profile demonstrated not only higher burnout rates, but also a specific pattern of maladaptation – a decrease in personal competence while maintaining control indicators, which indicates illusory compensation.

Correlation patterns were similar across waves: resilience was negatively associated with burnout (r range = –.48 to –.54), and traumatic exposure was positively associated with burnout (r range = 0.38 to 0.45). Full correlation matrices for all three waves are available from the corresponding author upon reasonable request. Reliability coefficients for each scale across waves (Cronbach's α and McDonald's ω) ranged from .78 to .91, as reported in the Measures section.

5. Discussion

5.1. Mediating Role of Resilience

Resilience partially mediated the relationship between traumatic exposure and burnout. Students with higher resilience reported lower burnout even at similar trauma levels, which aligns with previous studies on healthcare professionals (Archer et al., 2024; Michael et al., 2024) and extends findings from student samples (Mastrokoukou et al., 2024). However, the direct effect of trauma on burnout remained significant, suggesting that resilience alone cannot fully buffer extreme chronic war stress – a finding consistent with observations that prolonged trauma may overwhelm individual resources (Burlaka et al., 2025). The partial mediation effect is comparable to that reported by Rao et al. (2024) and Ma et al. (2024) in ecological contexts, though those studies found weaker relationships between emotional regulation and burnout, possibly due to the absence of chronic trauma. This suggests that in high-intensity conflict zones, the cognitive-affective processing of trauma requires more than just personality traits; it necessitates active, state-like regulatory efforts that can be depleted over time (Poon et al., 2025).

5.2. Intervention Effectiveness

The targeted resilience programme was associated with sustained improvements in resilience and reductions in burnout in the intervention group compared to the control group. Effect sizes were large (Cohen's $d = 0.85–0.95$), similar to those reported in other resilience training studies (Jianping et al., 2024; Kayalar & Hiçdurmaz, 2024). This indicates that resilience skills can be taught and maintained even under wartime conditions, supporting the role of educational interventions in crisis settings (Kucuksuleymanoglu, 2025). The stability of these gains over the longitudinal follow-up period suggests that structured psychological support within the academic curriculum can serve as a "secondary safe base" for students, partially compensating for the instability of their external environment.

5.3. Key Components of Resilience

Emotional regulation emerged as the strongest protective factor, followed by professional self-efficacy. This extends previous work on emotion regulation in stressful environments (Brites et al., 2024; Razak et al., 2025) by showing that these skills are particularly critical when stressors are uncontrollable. The high predictive power of emotion regulation confirms that for future psychologists, the ability to modulate physiological arousal and cognitive appraisals is not merely

a soft skill but a core professional competence for survival in extreme conditions (Kim et al., 2023).

Three resilience profiles were identified: Adaptive Regulators (42%), Difficulty Fighters (35%), and Risk Group (23%). The Risk Group showed a pattern of declining personal competence despite preserved perceived control – possibly an illusory compensation mechanism, though this interpretation requires further study. This "illusory control" may act as a short-term defense mechanism against helplessness but likely contributes to long-term exhaustion as the gap between perceived and actual competence widens.

5.4. Further Research Prospects

Longitudinal research on the effectiveness of the proposed interventions should be conducted. It is promising to study the impact of social support and organizational culture on the development of resilience. It is necessary to investigate the effectiveness of online interventions to support resilience among psychology students. This finding implies a "practice-exposure effect," where clinical experience provides a pragmatic framework for applying theoretical resilience strategies, thereby transforming abstract knowledge into robust coping habits.

6. Conclusion

This longitudinal study confirmed that psychological resilience partially mediates the relationship between traumatic exposure and burnout among psychology students during wartime. Emotional regulation and professional self-efficacy were the most protective components. A targeted 12-week resilience programme was associated with sustained improvements in resilience and reductions in burnout over 18 months. These findings support the integration of resilience training into psychology education to preserve the mental health workforce in crisis settings.

6.1. Implications for Education and Training

Three practical implications follow. First, mandatory modules on cognitive reappraisal and distress tolerance should be embedded in master's programmes in clinical psychology. Second, routine profiling of students can identify the Risk Group (23%), who need intensive individualised supervision. Third, early supervised practice with trauma clients may enhance the protective effects of resilience.

6.2. Recommendations for Future Research

Future studies should test the long-term career outcomes of resilience-trained students, examine cross-cultural generalisability to other conflict zones, and investigate organisational factors (e.g., peer support, institutional policies) that sustain resilience beyond individual-level training.

7. Limitations and Future Directions

The study has a number of methodological limitations that should be considered when interpreting the results. The sample was limited to psychology students from four universities, which reduces the representativeness for the entire population of psychology students in Ukraine. The use of self-report questionnaires only creates a risk of bias due to social desirability and subjectivity of assessments.

The research tools, although standardized, did not take into account all aspects of professional burnout in wartime. The CD-RISC-25 scale measures general resilience, but may not be sensitive enough to respond to specific professional challenges. The attrition rate of 15% between study waves could have affected the results if the dropout was related to the participants' stress level.

The cultural context of wartime in Ukraine also limits the possibility of generalizing the results to other countries or peacetime conditions. The study did not take into account all potential variables, such as the level of social support outside the educational environment or individual coping characteristics. Limited resources did not allow for the use of additional data collection methods, such as interviews or observations. These circumstances do not reduce the value of the obtained data, but determine the need for careful interpretation of the results and indicate areas for improvement in further research.

A promising direction is to expand the sample to include other supporting professions in wartime. Further research could examine the effectiveness of specific interventions for different resilience profiles. Incorporating objective assessment methods and qualitative data will improve the validity of the findings. Research into the long-term effects of implementing resilience development programmes is particularly relevant for supporting the mental health of professionals in post-war recovery.

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Data availability: The data supporting the findings of the current study will be made available from the corresponding author upon reasonable request.

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Ethics declaration: The conducted investigation was assessed as posing minimal risk to the participants involved. The study fully adhered to current ethical standards for field research within the social sciences. Formal ethical committee approval was obtained in accordance with the internal procedures of the Ukrainian higher education institution (HEI). All research procedures were carried out according to the ethical principles of the 1964 Helsinki Declaration. Comparable international ethical guidelines were additionally observed throughout the research process.

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Appendix 1. Reliability coefficients (Cronbach's α and McDonald's ω) for each scale across three waves

Scale	*Wave*	*Cronbach's α*	*McDonald's ω*
Connor-Davidson Resilience Scale (CD-RISC-25)	1	.86	.88
	2	.87	.89
	3	.89	.91
Maslach Burnout Inventory – Student Survey (MBI-SS) modified	1	.84	.85
	2	.86	.87
	3	.88	.89
Emotion Regulation Questionnaire (ERQ) – Cognitive Reappraisal	1	.82	.83
	2	.84	.85
	3	.85	.86
ERQ – Expressive Suppression	1	.78	.79
	2	.80	.81
	3	.81	.82
Difficulties in Emotion Regulation Scale (DERS-16)	1	.88	.89
	2	.89	.90
	3	.90	.91
Traumatic Exposure Severity Scale (TESS)	1	.87	.88
	2	.88	.89
	3	.89	.90
Secondary Traumatic Stress Scale (STSS)	1	.86	.87
	2	.87	.88
	3	.88	.89