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MENTAL HEALTH STATUS OF FAMILY MEDICINE INTERNS: A SCREENING-BASED ASSESSMENT OF ANXIETY, DEPRESSION, AND RESILIENCE

Abstract. The internship period represents a critical stage in the professional development of a physician, characterized by intense emotional stress, high levels of responsibility, limited practical experience, and the constant need to adapt to dynamic clinical environments. These factors create a favorable context for the emergence of psycho-emotional exhaustion, anxiety, depression, and burnout syndrome. At the same time, resilience—a person's psychological capacity for stability, flexibility, and recovery after stress—serves as an important protective factor. The aim of this study was to conduct a screening assessment of anxiety, depression, and resilience levels among medical interns specializing in General Practice – Family Medicine, as well as to examine the dynamics of these indicators throughout the entire internship period. Additionally, the relationships between psycho-emotional states and selected socio-demographic variables were analyzed. The study involved 35 interns who underwent training during 2023–2025 at the Department of Family Medicine and Propaedeutics of Internal Medicine. Screening was conducted three times—at the beginning, middle, and end of the internship—using validated psychometric tools: the Hospital Anxiety and Depression Scale (HADS) and the Connor-Davidson Resilience Scale (CD-RISC-25). The results demonstrated relative stability in the average levels of anxiety, depression, and resilience over the course of the internship, with no statistically significant changes

in the overall sample. However, during the third wave of assessment, clinically significant levels of anxiety were found in 22.9% of participants, and a combination of elevated anxiety and depression levels was observed in 14.3%, which may indicate a heightened risk of burnout. Most interns exhibited moderate or high levels of resilience, which likely contributed to the preservation of adaptive psychological resources. Correlation analysis revealed a negative relationship between depression and resilience levels, highlighting the potential protective role of psychological resilience in preventing emotional exhaustion. No statistically significant associations were found between emotional well-being indicators and age, gender, or internship location. These findings emphasize the importance of integrating systematic psychoeducational programs, resilience training, emotional self-management strategies, and regular mental health monitoring into the educational process for medical interns. Such measures are crucial not only for promoting psychological well-being among young doctors but also for preventing chronic stress and burnout at the early stages of their professional careers—especially relevant in the context of ongoing healthcare reform and the growing challenges posed by the war in Ukraine.

Keywords: mental health, internship, family medicine, anxiety, depression, resilience, emotional burnout, psychoeducation, screening, stress.

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ПСИХІЧНЕ ЗДОРОВ'Я ЛІКАРІВ-ІНТЕРНІВ ІЗ СІМЕЙНОЇ МЕДИЦИНИ: СКРИНІНГОВА ОЦІНКА ТРИВОГИ, ДЕПРЕСІЇ ТА РЕЗИЛІЄНСУ

Анотація. Період інтернатури є критичним етапом у професійному становленні лікаря, що характеризується інтенсивним емоційним навантаженням, високим рівнем відповідальності, обмеженим досвідом та постійною

необхідністю адаптації до мінливих умов клінічної практики. Ці фактори створюють сприятливе середовище для виникнення психоемоційного виснаження, тривоги, депресії та синдрому емоційного вигорання. Водночас важливою захисною характеристикою є резилієнс — здатність до психологічної стійкості, гнучкості та відновлення після стресових впливів. Метою дослідження було здійснити скринінгову оцінку рівня тривожності, депресії та резилієнсу у лікарів-інтернів за спеціальністю «Загальна практика – сімейна медицина», а також простежити динаміку змін цих показників протягом усього періоду інтернатури. Додатково проаналізовано взаємозв'язки між психоемоційними станами та окремими соціально-демографічними чинниками. У дослідженні взяли участь 35 інтернів, які проходили підготовку у 2023–2025 роках на кафедрі сімейної медицини ФПО та пропедевтики внутрішньої медицини. Скринінг проводився тричі — на початку, у середині та наприкінці інтернатури — із використанням валідизованих опитувальників HADS (Госпітальна шкала тривоги і депресії) та CD-RISC-25 (Шкала резилієнсу Коннора–Девідсона). Результати показали відносну стабільність середніх рівнів тривожності, депресії та резилієнсу протягом навчального періоду, без статистично значущих змін у загальній вибірці. Разом з тим, у третій хвилі анкетування у 22,9% учасників виявлено клінічно значущі рівні тривожності, а у 14,3% — поєднання високих рівнів тривоги та депресії, що є потенційним предиктором емоційного вигорання. Більшість інтернів демонстрували середній або високий рівень резилієнсу, що, ймовірно, сприяло збереженню адаптивних ресурсів. Проведено кореляційний аналіз, який виявив негативний зв'язок між рівнем депресії та резилієнсом, що вказує на потенційну захисну роль психологічної стійкості у попередженні емоційного виснаження. Жодних статистично значущих зв'язків між психоемоційними показниками та віком, статтю чи місцем проходження інтернатури не виявлено. Отримані дані підкреслюють важливість впровадження в освітній процес інтернів систематичних психоосвітніх заходів, тренінгів із розвитку резилієнсу, елементів емоційного самоменеджменту та регулярного моніторингу психічного стану. Це дозволить не лише підвищити психологічне благополуччя молодих лікарів, а й запобігти формуванню хронічного стресу та вигорання на ранніх етапах професійного становлення, що є особливо актуальним в умовах реформування медичної системи та зростання викликів, пов'язаних із війною в Україні.

Ключові слова: психічне здоров'я, інтернатура, сімейна медицина, тривога, депресія, резилієнс, емоційне вигорання, психоосвіта, скринінг, стрес.

Introduction. The internship period represents a pivotal stage in the formation of a physician's professional identity. It is characterized by a substantial cognitive workload, increased responsibility for clinical decision-making, and the necessity to adapt to new social and professional environments. Within this context, internship is often associated with high levels of psycho-emotional stress, which

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may lead to the development of anxiety and depressive symptoms, as well as contribute to emotional burnout [1, 2, 3].

In recent years, researchers have increasingly focused on the phenomenon of resilience—an integrative personality trait that reflects one's ability to effectively cope with stressors, maintain psychological balance, and recover after crises. Among healthcare professionals, especially in the face of growing challenges such as the COVID-19 pandemic, wartime conditions in Ukraine, and resource shortages, the level of resilience gains particular importance as a factor capable of modifying the impact of negative psycho-emotional influences [4, 5].

Beyond academic challenges, interns often face uncertainty about their professional future, lack experience in confident patient communication, and have limited access to emotional support within the clinical team [6]. Collectively, these factors create a stress-inducing environment that may exert a prolonged effect on interns' psychological well-being, potentially fostering susceptibility to burnout at the very beginning of their careers. Therefore, studying the psychological adaptation of medical interns—particularly in terms of changes in anxiety, depression, and resilience throughout their training—is essential for improving educational programs and developing systemic mental health support in the medical field [7].

Despite the substantial number of international studies that highlight the association between low resilience and increased risk of affective disorders among healthcare professionals, the dynamics of these indicators among Ukrainian medical interns remain insufficiently explored [8]. This issue becomes especially relevant in light of current societal turbulence caused by war, which imposes additional psychological pressure not only on civilians but also on the medical community.

Thus, the investigation of changes in anxiety, depression, and resilience levels throughout the internship period holds both scientific and practical value. The findings may serve as a basis for designing targeted psychoeducational and preventive interventions aimed at preserving the mental health of young physicians [4, 9].

The aim of this study was to examine the dynamic changes in anxiety, depression, and resilience levels among medical interns during the internship period and to analyze the interrelationships between these indicators at the final stage of training.

Materials and Methods. This study involved 35 medical interns specializing in General Practice – Family Medicine, who were undergoing internship training from 2023 to 2025 at the Department of Family Medicine of the Faculty of Postgraduate Education and Propaedeutics of Internal Medicine, Dnipro State Medical University. The researchers conducted three rounds of anonymous paper-based surveys using two validated screening tools: the Hospital Anxiety and Depression Scale (HADS) and the Connor-Davidson Resilience Scale (CD-RISC-25).

Inclusion criteria: participation in internship training in the specialty "General Practice – Family Medicine" during the period 2023–2025, and informed consent to

participate in the study. Exclusion criteria: refusal to participate for any reason, formal or careless completion of questionnaires, or incomplete responses.

The average age of participants at the time of the third survey wave was 24.9 years (SD = 1.07). Gender distribution was as follows: 28 participants (80%) were female and 7 (20%) were male.

The three waves of assessment were conducted at the following time points:

1. During the second month of internship training (start of the educational component – September 2023);
2. During the fifth month of training (continuation of the educational component in the first year – February 2024);
3. During the nineteenth month of training (final part of the educational component – April 2025).

The study was conducted in accordance with the principles outlined in the latest revision of the Declaration of Helsinki, adopted at the 75th General Assembly of the World Medical Association in October 2024 (Helsinki, Finland); the Universal Declaration on Bioethics and Human Rights adopted at the 33rd Session of the General Conference of UNESCO in October 2005 (Paris, France); and the International Ethical Guidelines for Health-related Research Involving Humans, developed by the Council for International Organizations of Medical Sciences (CIOMS) in collaboration with the World Health Organization (WHO) in 2016.

Data analysis was performed using MedCalc Statistical Software, trial version 23.2.1 (https://www.medcalc.org/download/). The Shapiro–Wilk test was used to assess the normality of the distribution of the studied variables. Given that 33.3% of the data did not meet the criteria for a normal distribution and considering the limited sample size, non-parametric statistical methods were chosen for further analysis. To evaluate changes across the three waves of data collection, the Friedman test (χ^2)—a non-parametric alternative to repeated measures ANOVA—was applied.

Descriptive statistics included the calculation of the mean, median, standard deviation (SD), interquartile range (Q1; Q3), minimum, and maximum values. To examine the relationships between anxiety, depression, and resilience levels, Spearman's rank correlation coefficient (Spearman's rho) was used, as it allows for the evaluation of the strength and direction of monotonic relationships between non-parametric data. All statistical tests were conducted with a significance level set at $p < 0.05$.

Results and Discussion. The assessment of the normality of the data distribution using the Shapiro-Wilk test indicated that 66.7% of the obtained results followed a normal distribution (Table 1).

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Table 1

Results of the normality test of the obtained data using the Shapiro-Wilk criterion.

Variable	Survey Wave	W-statistic	p-value	Data Distribution
Resilience	1	0.95	0.140	normal
	2	0.94	0.066	normal
	3	0.98	0.838	normal
Anxiety	1	0.98	0.814	normal
	2	0.97	0.457	normal
	3	0.92	0.019	non-normal
Depression	1	0.92	0.015	non-normal
	2	0.93	0.055	normal
	3	0.97	0.448	normal

Given the partial skewness (33.3%) in the data distribution and the small sample size, the decision was made to use non-parametric statistical methods for further analysis.

To confirm or reject the null hypothesis regarding the absence of changes in the dynamics between the three waves of measurement on the resilience, anxiety, and depression scales, the authors performed a comparison using the Friedman test ($\chi^2(3)$).

It was found that the mean values of the indicators did not show statistically significant differences over the course of internship training: Resilience: $\chi^2 = 2.59$, $p = 0.274$; Anxiety: $\chi^2 = 1.42$, $p = 0.491$; Depression: $\chi^2 = 1.97$, $p = 0.374$.

This suggests that the psycho-emotional state of medical interns remained stable throughout the internship period, despite the high level of external stressors. Given the lack of dynamics, further data analysis was carried out based on the results of the third wave of the survey.

Table 2

Descriptive Statistics for the Results of the Third Wave of the Survey of Medical Interns

Змінна	Mean	SD	Median	Q1;Q3	Minimum	Maximum
Resilience	58,8	13,65	57,5	48,5; 65,5	28	87
Anxiety	8,3	3,36	7,0	6,00; 10,25	3	16
Depression	5,9	3,20	5,5	3,75; 8,00	0	15

According to Table 3, the descriptive statistics for the third wave of the survey show moderate mean levels of resilience, anxiety, and depression among medical interns, with a relatively wide range of variation. However, a more detailed analysis of the third wave indicators, conducted at the end of the internship, revealed several important trends. The average score on the CD-RISC-25 scale was 58.8, corresponding to a moderate level of resilience, indicating that most respondents retained adaptive stress-coping mechanisms. The study showed a relatively wide

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range of variation (from 28 to 87), pointing to individual differences in psychological resilience.

In accordance with the HADS assessment method, the authors analyzed the distribution of respondents' responses in terms of anxiety and depression levels (Figure 1).

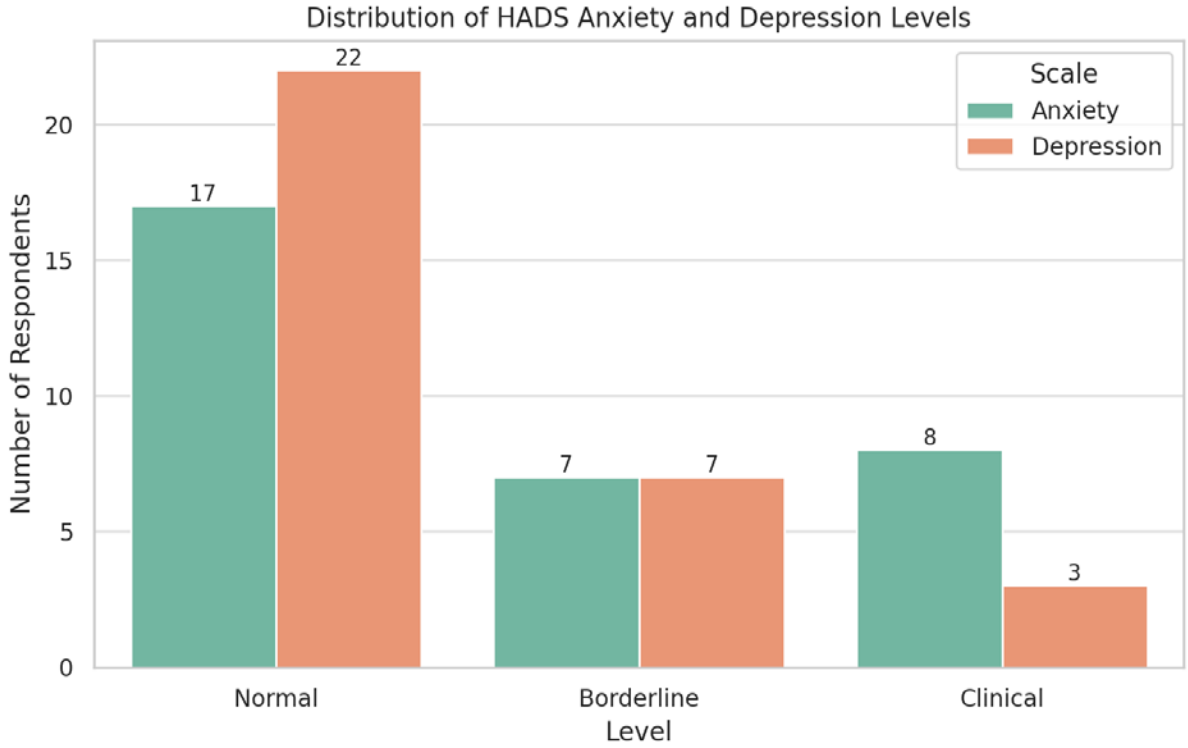

Fig. 1 Distribution of respondents' responses by categories according to the HADS assessment method.

The majority of medical interns showed normal levels of both anxiety and depression. Specifically, normal anxiety levels (0–7 points) were recorded in 20 individuals (57%), subclinical levels (8–10 points) in 7 (20%), and clinically significant levels (≥11 points) in 8 respondents (22.8%). For the depression scale, normal values were observed in 25 individuals (71.4%), subclinical levels in 7 (20%), and clinical levels in 3 respondents (8.6%). This distribution suggests a predominance of adaptive emotional states among participants, while a portion of them exhibited signs of psychological distress, requiring further attention in the context of supporting their mental health.

Particular attention should be given to the data on the combination of high levels of anxiety and depression: 17.1% of respondents had elevated (subclinical) scores on both scales, and 5.7% (two females) showed clinically significant levels of both anxiety and depression simultaneously. This may indicate emotional exhaustion or early signs of burnout syndrome, which requires further monitoring and possibly psychoprophylactic interventions.

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Correlational analysis between the three studied indicators using the Spearman criterion revealed moderate strength correlations between anxiety and depression scores ($r = 0.49$, $p = 0.004$), and depression and resilience scores ($r = -0.53$, $p = 0.002$). The moderate positive correlation between anxiety and depression confirms that these conditions may mutually exacerbate each other, suggesting shared risk factors, and the results align with existing literature on the comorbidity of these conditions. The inverse moderate correlation between resilience and depression suggests that higher levels of resilience help better cope with depressive symptoms, acting as an adaptive and protective factor. At the same time, the relationship between resilience and anxiety did not reach statistical significance ($p = 0.107$), likely due to the specific structure of the anxiety spectrum, which may be less clearly associated with stress resistance mechanisms.

A limitation of this study is the use of screening tools for detecting depression and anxiety phenomena. The stability of indicators during the internship may partly be explained by the integration of modern psychoeducational components into the training program (specifically, a mental health course and familiarization with WHO's mhGAP tools). These educational interventions likely contributed to the development of adaptive resources in the medical interns and reduced the risk of emotional destabilization due to prolonged stress.

Conclusions. No statistically significant changes in anxiety, depression, and resilience levels were observed during the internship. The overwhelming majority of medical interns demonstrated normal or subclinical levels of anxiety and depression, which may indicate the preservation of their mental health adaptation resources. The results of the study confirm the importance of including educational interventions for resilience development in the training of medical interns, particularly in high-stress environments.

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