

UDC 614.253.4:378.046-021.68:[614.253.1/.2-051:316.36]:616.8-009.17

[https://doi.org/10.52058/2786-4952-2025-4\(50\)-2002-2010](https://doi.org/10.52058/2786-4952-2025-4(50)-2002-2010)

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## THE EVOLUTION OF PROFESSIONAL BURNOUT AMONG GENERAL PRACTICE – FAMILY MEDICINE INTERNS THROUGHOUT THEIR INTERNSHIP TRAINING

**Abstract.** A high level of responsibility and exposure to stressors inherent in the early stages of a medical career create favourable conditions for the development and progression of professional burnout. The internship period, during which the young doctor undergoes active professional formation, is particularly vulnerable to this phenomenon. The aim of this study is to analyse the dynamics of professional burnout among medical interns specialising in General Practice – Family Medicine throughout the entire duration of their internship training. The article examines changes in the severity of the key components of burnout syndrome — emotional exhaustion, depersonalisation, and a reduced sense of personal accomplishment — across the first and second years of internship. To assess burnout levels, the standardised Maslach Burnout Inventory (MBI), adapted for medical professionals, was utilised. The findings reveal a statistically significant increase in emotional exhaustion and depersonalisation among interns over the course of their training, indicating a cumulative psychological burden and a gradual decline in emotional responsiveness when interacting with patients. At the same time, personal accomplishment scores remain relatively stable or show a tendency to decrease. The influence of external stressors is also evident, particularly excessive workload, insufficient mentorship, and uncertainty regarding future professional pathways. The results highlight the importance of early identification of burnout symptoms,

even at the undergraduate stage, and the need for preventive programmes that include psychological support, the development of emotional intelligence, and metacognitive skills. Special attention should be paid to the creation of a supportive educational environment that promotes the formation of professional identity without excessive emotional depletion. The proposed approaches may serve as effective tools for improving the training of young physicians and preventing long-term consequences of professional burnout.

**Keywords:** professional burnout; medical interns; family medicine; prevention; emotional exhaustion; depersonalisation; personal accomplishment; mental health; internship.

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## **ЕВОЛЮЦІЯ ПРОФЕСІЙНОГО ВИГОРАННЯ СЕРЕД ЛІКАРІВ-ІНТЕРНІВ ЗА ФАХОМ «ЗАГАЛЬНА ПРАКТИКА – СІМЕЙНА МЕДИЦИНА» ВПРОДОВЖ НАВЧАННЯ В ІНТЕРНАТУРИ**

**Анотація.** Високий рівень відповідальності та стресові фактори, притаманні початку медичної кар'єри, створюють сприятливі умови для виникнення та прогресування професійного вигорання. Найбільш вразливим до цього явища є період інтернатури, коли триває активне професійне формування молодого лікаря. Метою даного дослідження є аналіз динаміки перебігу феномену професійного вигорання серед лікарів-інтернів за спеціальністю «Загальна практика – сімейна медицина» протягом усього періоду навчання в інтернатурі. У статті розглянуто зміни у вираженості ключових компонентів синдрому вигорання — емоційного виснаження, деперсоналізації та зниження відчуття особистісних досягнень — протягом першого та другого років інтернатури. Для оцінки рівня вигорання використовувався стандартизований опитувальник Maslach Burnout Inventory (MBI), адаптований для медичних

працівників. Встановлено, що впродовж інтернатури у лікарів-інтернів спостерігається статистично значуще підвищення рівнів емоційного виснаження та деперсоналізації, що свідчить про накопичення психоемоційного навантаження і поступову втрату емоційної чутливості у спілкуванні з пацієнтами. Водночас показники особистісних досягнень залишаються відносно стабільними або демонструють тенденцію до зниження. Простежується вплив зовнішніх стресогенних чинників, зокрема надмірного професійного навантаження, нестачі ефективного наставництва, а також невизначеності щодо професійного майбутнього. Результати дослідження підкреслюють важливість своєчасного виявлення ознак професійного вигорання вже на додипломному етапі та необхідність впровадження превентивних програм, що включають психологічну підтримку, розвиток емоційного інтелекту й метакогнітивних навичок. Окрему увагу доцільно приділити створенню сприятливого освітнього середовища, яке сприятиме формуванню професійної ідентичності без надмірного психоемоційного виснаження. Запропоновані підходи можуть бути ефективно використані для удосконалення підготовки молодих лікарів і профілактики довготривалих наслідків професійного вигорання.

**Ключові слова:** професійне вигорання; лікарі-інтерни; сімейна медицина; профілактика; емоційне виснаження; деперсоналізація; особистісні досягнення; психічне здоров'я; інтернатура.

**Introduction.** In 2019, the World Health Organization (WHO) included burnout in the 11th revision of the International Classification of Diseases as a professional phenomenon. Although burnout is not classified as a disease, it creates significant challenges for healthcare systems: it deteriorates the quality of medical services, affects the well-being of healthcare professionals, contributes to reduced patient satisfaction, and even leads to medical errors that may result in malpractice lawsuits and significant costs for individual families or hospitals [1,2].

The phenomenon of professional burnout among doctors, especially general practitioners and family physicians, is a pressing issue of contemporary healthcare. According to official data, family doctors rank fifth among all medical specialties in terms of professional burnout, with a rate of 51%, meaning that one in two experiences burnout [3]. This high level of burnout among family doctors is primarily due to the intense communication load and the need for constant interaction with a large number of patients [4].

Particular attention needs to be given to medical interns, who are among the most vulnerable groups to develop burnout. Internship is a transitional stage between medical school and professional practice, where an intern faces high demands and workload, often accompanied by stress, emotional exhaustion, and physical burnout. This period is particularly challenging because of the simultaneous combination of academic and practical responsibilities. Interns bear significant responsibility for patient care, participating in clinical decisions, but often lack sufficient autonomy in making those decisions, leading to stress and self-doubt [5].



Research shows that long working hours and the necessity to work night shifts, often with overtime, are significant factors contributing to physical and emotional exhaustion among medical interns. The lack of time for recovery after work and the absence of a work-life balance significantly increase the risk of burnout [6].

Moreover, high expectations from supervisors, colleagues, and patients, combined with a lack of adequate support from mentors or senior colleagues, often exacerbate feelings of isolation and helplessness among interns. This can lead to emotional exhaustion and a loss of motivation to continue working in medicine [7]. Financial difficulties, low wages, and a lack of job stability that interns often face further amplify the stress factors. The absence of adequate financial support and the high demands regarding training, certification, and additional costs place additional psychological pressure on medical interns [8].

Equally important is the insufficient preparation of interns to manage stress and emotional burnout. In many cases, they do not receive enough training or resources to address these issues, leading to emotional exhaustion and, ultimately, burnout. Mental health problems associated with burnout can significantly affect the professional activities of doctors, reducing the quality of medical care provided and increasing the risk of medical errors [9].

Thus, medical interns are at an elevated risk of professional burnout due to high stress levels, long working hours, lack of sufficient support, and financial difficulties (the increase in the minimum wage for interns occurred on January 1, 2025, to UAH 15,000) [10].

The aim of this study is to analyse the phenomenon of professional burnout among medical interns specializing in "General Practice - Family Medicine" during their internship (2023-2025).

**Materials and Methods:** The study involved 35 medical interns in the specialty of "General Practice - Family Medicine" who were undergoing training during the 2023-2025 internship period at the Department of Family Medicine and Propedeutics of Internal Medicine at Dnipro State Medical University. The authors conducted three anonymous surveys using printed copies of the Maslach Burnout Inventory (MBI) (K. Maslach, S. Jackson, adapted by E. Vodopyanova) MBI: Human Services Survey for Medical Personnel (MBI-HSS (MP)). The first measurement was taken at the second month of the internship (the beginning of the educational component – September 2023), the second at the fifth month of training (continuation of the educational component of the first year of the internship – February 2024), and the third at the 19th month (the final part of the educational component of the internship – April 2025). This allowed for the assessment of burnout indicators over time. The average age of participants at the time of the final survey was 24.9 (1.07) years. The gender distribution was as follows: 7 males (20%) and 28 females (80%).

According to the recommendations of the authors of the MBI HSS (MP) questionnaire, all study participants were classified into 5 profiles based on the

survey results: "Burnout" (high scores for emotional exhaustion and depersonalization according to the Maslach Inventory), "Engaged" (low scores for emotional exhaustion and depersonalization, high score for personal achievement), "Overloaded" (high score only for emotional exhaustion), "Disengaged" (due to high depersonalization), and "Ineffective" (low score for personal achievements). This approach does not provide a single clear indicator but takes into account all three subscales, allowing for the differentiation of burnout models from other phenomena (overwork, depression, etc.). The "Engaged" profile does not exhibit any burnout symptoms, while the "Overloaded," "Ineffective," and "Disengaged" profiles are intermediate and require correction. Respondents who fit the "Burnout" profile are most likely to have developed full burnout syndrome.

The study was conducted in accordance with the key principles outlined in the latest version of the Helsinki Declaration, adopted at the General Assembly of the World Medical Association in October 2024 in Helsinki, Finland; the Universal Declaration on Bioethics and Human Rights, adopted at the UNESCO meeting in October 2005 in 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.

Statistical analysis of the data was performed using R Commander (<https://www.r-project.org/>) and MedCalc Statistical Software trial version 23.2.1 (<https://www.medcalc.org/download/>). Given the normal distribution of quantitative data in the groups (determined by the Shapiro-Wilk test), parametric characteristics and analysis methods were used: mean (M), standard deviation (SD). For comparison between groups, one-way ANOVA was applied, followed by Scheffe's multiple comparison method and pairwise comparison using the T-test. The results were considered statistically significant when  $p < 0.05$  for all tests.

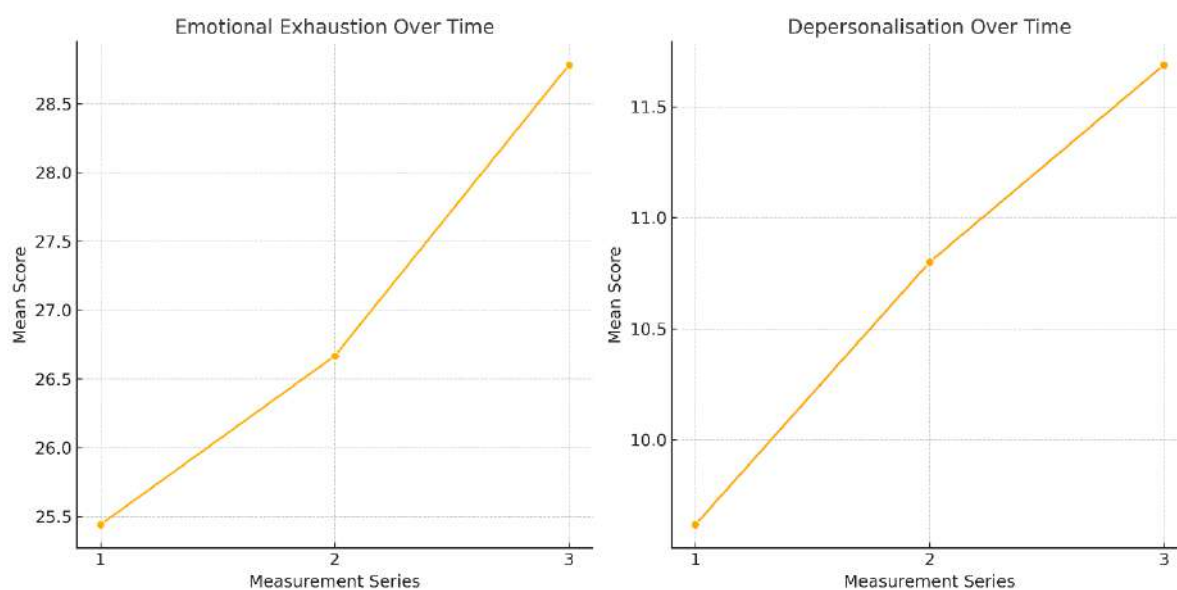
**Results and Discussion:** In accordance with the objective of this study, the authors analysed the burnout component indicators across three measurements among medical interns using a standardized methodology, presented in Table 1.

*Table 1*

**Summary of the survey results on professional burnout among medical interns**

Indicator	№	Mean m	95% CI	SD	F-statistics	p-value
Emotional exhaustion	1	25,4	22,3-28,6	8,99	0,882	0,417
	2	26,7	22,7-30,7	10,69		
	3	28,8	24,8-32,8	11,18		
Depersonalization	1	9,6	7,97-11,27	4,74	1,262	0,288
	2	10,8	8,76-12,84	5,47		
	3	11,7	9,62-13,75	5,73		
Reduced personal accomplishments	1	34,1	32,00-36,23	6,0591	0,966	0,385
	2	34,4	31,71-37,16	7,2904		
	3	32,4	30,33-34,42	5,6668		

According to the data in Table 1 (F-statistic of the ANOVA test), it can be concluded that there is no statistically significant difference between the different time measurements, meaning that the indicators of the burnout phenomenon did not significantly change during the internship. To identify possible differences between the three measurements, we conducted pairwise comparisons using the t-test for dependent samples and found no statistically significant difference in any case ( $p \geq 0.05$ ). Subsequently, we performed a trend analysis to identify any potential linear changes over time (Fig. 1).



*Fig. 1. Trend analysis results for emotional exhaustion and depersonalization indicators.*

According to the trend analysis data, the indicators of emotional exhaustion and depersonalization demonstrate a concerning negative trend, gradually increasing linearly over time (accumulation of emotional exhaustion and exacerbation of symptoms of detachment and cynicism). However, the indicator of reduced personal achievements initially increased and then decreased, suggesting a gradual decline in the feeling of personal professional efficacy. Thus, it can be stated that the components of the burnout phenomenon among resident physicians tend to worsen, but did not show statistically significant differences, likely due to the relatively short observation period (18 months).

Given the absence of statistically significant differences in the results of the Maslach Burnout Inventory at different time intervals, further analysis was conducted using data obtained from the third survey.

Table 2

**Distribution of burnout components among resident physicians by levels**

Level	Emotional exhaustion	Depersonalization	Reduced personal accomplishments*
● High	17 (48,6 %)	17 (48,6 %)	6 (17,1 %)
● Medium	13 (37,1 %)	14 (40,0 %)	16 (45,8 %)
● Low	5 (14,2 %)	4 (11,4 %)	13 (37,1%)

\* - the level of reduced personal achievement is interpreted using an inverse scale (i.e., the higher the score, the better the state).

It should be noted that the most unfavorable profile of professional burnout, specifically (high emotional exhaustion and depersonalization, low personal achievement), was observed in 7 individuals.

The next step involved identifying different profiles of the burnout phenomenon for a better understanding of possible future prevention strategies (Fig. 2).

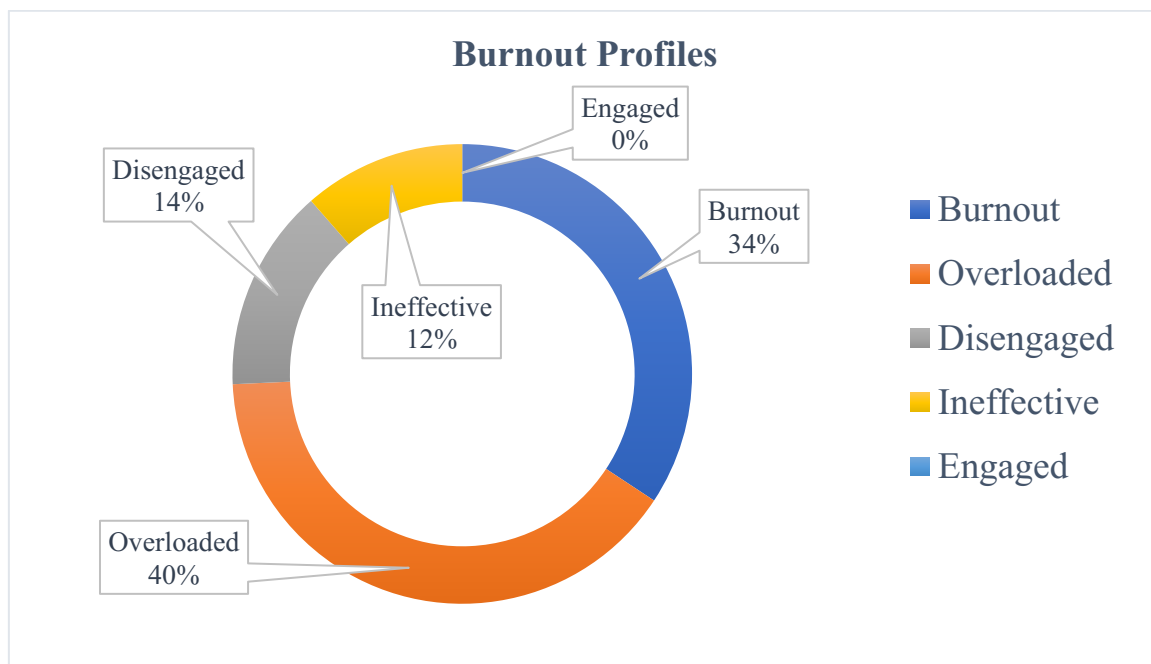


Fig. 2. Distribution of family medicine interns by professional burnout profile

According to Fig. 2, the majority of interns (40 %) belong to the "Overloaded" profile, indicating excessively high professional workload during their internship. In total, 66 % of family medicine interns were categorized into burnout profiles that potentially require correction. A concerning sign is the absence of interns in the "Engaged" profile, which has the most favorable components and characteristics to resist this phenomenon. Given the lack of significant dynamics among the interns during the 18 months of their internship, it is recommended that preventive interventions for professional burnout should begin before the internship starts, i.e., included in the training programs at earlier stages with follow-up on their effectiveness.



Factors not studied, but which, in our view, could have influenced the results of this study include the fact that the internship for family doctors took place during the full-scale invasion of the Russian Federation, prior remote learning during the COVID-19 pandemic caused by SARS-CoV-2, further health system reforms, and insufficient funds allocated to ensure the medical guarantee program (2 % of the country's GDP instead of the 5 % recommended by international organizations) [11].

**Conclusions.** 1. One in five family medicine interns exhibit all components of professional burnout by the 19th month of their internship, which did not statistically differ from the beginning of their internship (2 months into training) and during the mid-term assessment (5 months of training). 2. Trend analysis of emotional exhaustion and depersonalization indicators, which were dynamically evaluated over the 18 months of internship among family medicine interns, indicates a linear deterioration of these components by the end of their training. 3. Preventive programs for professional burnout should be implemented before the internship begins.

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