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Academic performance, perceptions, and motivations of medical PhD students in Ukraine during wartime: a mixed methods study

Iurii Kuchyn¹, Kateryna Bielka¹, Lesya Lymar¹ and Livia Puljak^{2*} 

Abstract

Background The full-scale Russian invasion of Ukraine, initiated on February 22, 2022, has created numerous challenges, including the need to study under the constant threat of bombardment. This study aimed to analyze the effects of the war on the academic performance of medical PhD students in Ukraine, explore their perceptions of stressful wartime events, and identify their motivations and future aspirations.

Methods This mixed-method study included medical PhD students from Bogomolets National Medical University in Kyiv, Ukraine, during the 2022–2023 academic year amid ongoing Russian military attacks. Data were collected through self-completed questionnaires. Additionally, qualitative data were gathered via one-on-one interviews with participants. The questionnaire and interviews addressed educational difficulties during the war, motivation to pursue academic studies, the likelihood of continuing an academic or medical career in Ukraine, academic progress at the time of the survey, and self-assessed adaptation to studying during the war.

Results 108 PhD students participated in the questionnaire, and 53 were interviewed. Nearly half of the participants described their education as challenging. More than two-thirds experienced class disruptions due to air raid alarms or shelling, and a similar proportion resumed classes afterward. Among the PhD students, 85% envision their future careers as physicians, scientists, or teachers in Ukraine. Adaptation to the extraordinary conditions varied, with half adapting well. A substantial number remained motivated to pursue their education and professional careers in Ukraine despite financial strain, loss of research data, and damaged infrastructure, which hindered progress for some. Others struggled significantly, highlighting the war's profound impact on their education and mental well-being.

Conclusion While the war has imposed severe challenges on the educational pursuits of medical PhD students in Kyiv, Ukraine, the resilience displayed by many underscores their determination to persevere. This resilience reflects their commitment to their academic careers despite the adversities posed by the ongoing conflict. However, some students struggled to cope. Further psychological and financial support will be crucial in helping these students continue their studies and contribute to the rebuilding of their country.

*Correspondence:

Livia Puljak

livia.puljak@gmail.com; livia.puljak@unicath.hr

Full list of author information is available at the end of the article



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Keywords Medical education, PhD, Doctoral student, War, Ukraine

Background

The full-scale Russian invasion of Ukraine, initiated on February 22, 2022, has triggered numerous unprecedented challenges and significantly affected the Ukrainian educational environment. The sudden onset of war has presented unprecedented challenges for students and academic institutions, interrupting traditional learning environments and forcing adaptations to extraordinary conditions [1].

Reports indicate that ongoing conflict has led to substantial disruptions in education, with students frequently exposed to air raid alarms, shelling, and infrastructure damage, challenging both their academic continuity and mental health. Several scholarly articles have described the impact of the Russian-Ukrainian War on Ukrainian medical education. Mayer et al.'s comprehensive study of medical schools in Ukraine, published in October 2023, provides a detailed account of the challenges faced by the Ukrainian system, including unavailable resources, migration of education participants, and threats to their lives [2]. Goncharuk-Khomyn et al. investigated the satisfaction of foreign students with their medical education in Ukraine, a pressing issue given the severe hardships these students faced during the war [3].

A study by Karasevska et al., conducted in 2023 among medical students in Ukraine, showed that the war has significantly impacted the mental health of these students, leading to increased symptoms of depression and anxiety and reduced coping abilities (unpublished data).

Roy et al. examined the situation of medical students from India studying in Ukraine during the Russian invasion in 2022. They reported numerous actual and potential challenges related to students' safety, shelter, food, and return home, as well as the considerable impact of the uncertainty regarding their educational prospects once back home [4].

Research on educational challenges in medical institutions during wartime has been sparse. Contributions to this discourse include a comprehensive analysis conducted by Dobiesz et al. [5], in which the authors examined the peculiarities of medical education amidst various armed conflicts.

The study of research and researchers during wartime is a relatively undeveloped area. Woodward et al. conducted a study that focused on the challenges in researching health systems in wartime states, highlighting the inadequate support for research during such times [6]. This underscores the need for greater attention to researchers' difficulties in these circumstances. There are also initiatives aimed at gathering manuscripts

describing war-related experiences in Ukraine, including those related to educational processes [7].

With the onset of the Russian-Ukrainian war, medical PhD students in Ukraine who were actively pursuing advanced research and training in critical healthcare fields were thrust into a reality of displacement, disruption, and uncertainty. The experience of PhD students during this period offers a unique perspective, as these students often represent the future scientific, medical, and educational workforce, which is essential for post-war recovery and national development. However, it remains unclear how these students adjusted and performed in their PhD studies during the war, facing challenges such as destroyed facilities, unavailable classes, general uncertainty and anxiety, potential loss of family and friends, and personal displacement. We were not able to find any studies in the literature reporting on medical PhD students' experiences during the Russian-Ukrainian war.

It has been reported that in conflict settings educational pursuits can serve as a stabilizing factor, providing students with a sense of purpose and normalcy amid chaos. However, sustained conflict often exacerbates academic and emotional challenges, impacting students' long-term career aspirations and well-being [8]. These findings support the importance of examining how Ukrainian PhD students are coping and adapting, as their experiences will shape both individual and national futures in post-war Ukraine.

This study aimed to analyze the consequences of the Russian-Ukrainian war on the academic performance of medical PhD students in Ukraine, explore student perceptions of war-related stress, and identify their motivations and future aspirations.

The study successfully achieved its aim of examining the impact of the war on the academic performance, stress perceptions, motivations, and career aspirations of medical PhD students in Ukraine. Through a mixed-methods approach, the study provided a comprehensive view of how students cope with the extraordinary conditions of studying under the constant threat of bombardment and disruptions due to air raid alarms or shelling. The quantitative data from questionnaires revealed specific educational challenges, while the qualitative interviews offered insights into the students' mental well-being and resilience.

Methods

Study design

This was a mixed-method study. The study was conducted from December 2022 to November 2023.

Ethics

The Bogomolets National Medical University (Bogomolets NMU) waived the requirement to submit the study protocol to the Bioethics Committee in accordance with the University's rules and current Ukrainian legislation. The University considered that participation in this study would be voluntary, with informed consent obtained from participants (Decision number: 120/3-605 issued on 22/04/2024). Oral informed consent was obtained from all participants prior to the study. The study was conducted in compliance with all applicable regulations.

Participants

This study included medical PhD students at Bogomolets NMU during the 2022/2023 academic year amidst the ongoing military actions of the Russian-Ukrainian war. At Bogomolets NMU, there are seven PhD programs, with a total of 436 PhD enrolled students at the moment of the study.

Participants were invited through the Telegram messenger group created by the University to communicate with PhD students who enrolled in the program between 2019 and 2022. They were also invited via the Google Classroom platform. After completing the survey, participants were invited to proceed with live interviews through the same platforms. Participation in the study was voluntary and anonymous.

Questionnaire

The data were collected using a 10-item questionnaire in the Ukrainian language, created by the study authors. The questionnaire focused on the most relevant issues affecting PhD candidates' lives during the study.

It was designed in Google Forms, and the author team tested the usability and technical functionality of the online questionnaire. All participants were shown the questionnaire items on a single screen in the same order without adaptive questioning. A completeness check was conducted, and no incomplete questionnaires were obtained. The survey did not collect any identifiable data, such as IP addresses, names, or email addresses. Additionally, the survey restricted multiple submissions from the same email address, but participants were not required to register. The survey was not password-protected, and no statistical adjustments were applied to the raw data.

The questionnaire included multiple-choice and open-ended questions. The items addressed educational challenges experienced during the war, interruptions of PhD classes due to air raid alarms or shelling, resumption of studies after such events, difficulty concentrating on studies during wartime, motivation to continue academic work, likelihood of pursuing an academic or medical career in Ukraine, and academic progress at the time of

the survey. Participants were also asked to rate their perception of how well they had adapted to studying during the war. The questionnaire used in this study is available in Supplementary file 1.

Interviews

To gather more detailed information from the participants, a qualitative methodology involving interviews was used to collect in-depth insights into and interpretations of students' personal experiences.

Research team and reflexivity

One author (LL) conducted the interviews. The interviewer, a woman with PhD credentials, is a university professor employed at Bogomolets NMU. She has experience conducting surveys using psychological questionnaires, culminating in a thesis defended in 2014 in Ukraine. The author prepared for the interviews by reviewing relevant literature.

Relationship with the participants

All participants were familiar with the interviewer, as she was their teacher in the PhD program. The participants' relationship with the interviewer was strictly academic. Upon invitation, participants were informed about the purpose of the interview but were not given any personal information about the interviewer.

Interview process

All eligible PhD students were invited to participate in the online survey and the interviews. One-on-one interviews were conducted using a prospectively prepared interview guide (Supplementary file 2). Due to the sensitive nature of the interview topics, the interviewer did not press participants to answer any questions they felt uncomfortable with.

Interviews took place either in University study rooms or online. No other individuals were present during the interviews besides the participant and interviewer. The interviews were not audio-recorded; instead, the interviewer took notes, which were not shared with the participants afterward. The duration of each interview was recorded, but repeat interviews were not conducted. The results of the interview analysis were not shared with the participants to obtain their feedback.

Data about PhD students' academic success

We obtained the following data from the university administration regarding PhD students enrolled at the University: data on failing grades, repeated courses, and defended theses during the 2022/2023 period. This information was collected for all PhD students enrolled at the University between 2022 and 2023, regardless of their participation in this study.

Data analysis

Categorical quantitative data from the survey were reported using frequencies and percentages. Qualitative content from the open-ended survey responses and interviews was analyzed using the qualitative description (QD) method. Common themes were identified, and representative quotes were provided. To ensure anonymization, participant quotes were labeled with the letter “P” (for the participant) followed by a unique number for each participant (e.g., P1, P2, P3, etc.).

Results

Online survey

Among 436 eligible PhD students, 108 (25% response rate) participated in the online survey, including 86 women and 22 men. Of the 108 respondents, 5 (4.6%) were aged over 40 years, 28 (26%) were between 30 and 40 years, and 75 (69%) were under 30 years old.

Table 1 Participants’ experiences of PhD studies during the war ($N=108$). Some answers were merged to increase clarity

Question	Responses	N (%)
How have you experienced medical education since the onset of the war on February 24, 2022?	Harder than usual	52 (48)
	Same as before the war	28 (26)
	Easier than usual	19 (18)
	I can't answer	9 (8)
Have any of your classes been interrupted by air raid alarms or shelling?	Yes	76 (70)
	No	26 (24)
	I don't remember	6 (6)
Have you attended classes on the same day following a shelling?	Yes	72 (68)
	No	22 (21)
	I don't remember	12 (11)
Do you find it difficult to concentrate on your studies during this period, especially after events like shelling or hearing difficult news?	No	20 (19)
	Hard, but I can manage it	49 (45)
	It's definitely hard	3 (3)
What has motivated you to continue your studies since February 24, 2022?	I can't answer	36 (33)
	Academic necessity	48 (44)
	Routine, it's my way of life	15 (14)
	My friends, parents	9 (9)
What percentage of your research did you complete during the first year of the war?	Less than 25%	61 (57)
	Between 25 and 50%	29 (27)
	Between 50 and 75%	7 (6)
	I am done with my thesis	11 (10)
Do you feel you have adapted to studying during the war?	I did not adapt	12 (11)
	I am somewhat adapted	45 (43)
	I am almost fully adapted	36 (33)
	I am fully adapted	14 (13)
Do you see yourself working in Ukraine as a scientist, physician, or teacher in the future?	Yes, definitely	71 (66)
	More yes than no	21 (19)
	I can't answer	5 (5)
	More no than yes	7 (6)
	Definitely no	4 (4)

The study revealed that a significant portion of students faced challenges. While only 14% described their experience as “difficult,” a larger group (34%) found it more challenging than usual. A substantial majority (70.4%) reported disruptions to classes or lectures due to air raids or shelling, and 68% experienced the resumption of classes following bombardments (Table 1).

Regarding concentration on their studies after shelling incidents, 32% indicated significant difficulty, while 45% acknowledged some degree of hardship. When asked about their motivation for continuing research activities during the war, one-third of students indicated that adherence to the bylaws and rules of the PhD program motivated them to meet deadlines. Meanwhile, 44% stated that their engagement in their studies had become routine (Table 1).

Additionally, 10% of students reported completing their research during the first year of the war, while the majority had completed less than 25% of their research. Regarding adaptation to studying during the war, 12.3% expressed full adaptation, while an additional 33% reported significant adaptation in education and research (Table 1).

The final question about PhD candidates’ future prospects revealed that 66% definitely envision continuing their careers in Ukraine as physicians, scientists, or educators (Table 1).

Interviews

Of the 108 students who participated in the survey, 53 (49%) took part in the interviews. Four students were excluded from the study. Namely, two began the interviews, but they found it difficult to discuss war-related challenges and chose not to continue. The other two withdrew their testimonies just before the article was finalized, explaining that seeing their experiences in writing was too painful. The remaining students who did not participate in the interviews did not provide reasons for non-participation. The duration of the interviews ranged from 10 to 15 min.

The personal interview data revealed a clear pattern of the general challenges faced by medical PhD students during wartime. Their accounts highlighted a range of difficulties, primarily focusing on negative factors. Multiple themes emerged, including physical harm and loss of property, the loss of relatives and friends, emotional and psychological impact, disruption of academic and research infrastructure, financial strain, adaptation and coping mechanisms, and the inability to continue their studies. Overall, the remarks reflect the profound and multifaceted impact of the war on the participants’ lives and academic progress.

Physical damage and loss of property

Many students reported losing their homes and belongings due to Russian troop activities in the northern Kyiv region and other regions, including looting, shelling, and other military actions. Several participants experienced the theft or destruction of their computers, resulting in the loss of research data and software essential for their studies. Additionally, many participants faced frequent power outages.

“My house was broken into. The Russians stole my PC with all the information on it. I did not have copies of my research data or backups in the cloud.” (P13, man, 29 years, 2nd year of PhD).

“My house was destroyed by a missile. All my time and money are now being used for reconstruction. I am still working on my research and hope to complete it on time. The lack of electricity is a problem.” (P32, man, 29 years, 2nd year of PhD).

“My laptop broke during the evacuation; it fell to the ground and broke. I am now using my friend’s laptop, but it’s hard to work because it doesn’t support SPSS.” (P44, man, 30 years, 2nd year of PhD).

Tragic loss of relatives and friends

The tragic loss of relatives and friends killed in the war was noted as a significant challenge. However, the students expressed the need to continue working on their theses despite these circumstances.

“A missile killed my grandmother. The whole family is mourning. I don’t know what to do. The thesis isn’t a priority, but I need to take the exams.” (P24, woman, 26 years, 1st year of PhD).

“I lost my best friend in the Kyiv region during the first days. I don’t want to talk about it. As for my thesis, I plan to finish it on schedule. Air alarms and lack of electricity are a significant problem.” (P37, man, 26 years, 1st year of PhD).

“A missile killed my junior friend. He was a paramedic and worked in an ambulance. I miss him very much, as he always had great ideas about plan B.” (P39, man, 30 years, 2nd year of PhD).

Emotional and psychological impact

War activities have adversely affected the students’ mental well-being. Participants described experiencing intense emotional and psychological stress, including fear, anxiety, and trauma. The constant threat of air alarms, separation from family, and personal losses contributed to a pervasive sense of insecurity and mental distress. Some expressed plans to leave Ukraine, while others continue to work on their PhD theses despite the circumstances. However, some are unable to concentrate or make progress on their work.

“I am in shock. I am afraid. I experience fear constantly. My children are abroad—the family is separated. I feel a general sense of nervousness.” (P2, man, 28 years, 1st year of PhD).

“I am stressed. It is impossible to study under these circumstances. I am thinking of going to Poland for a few months.” (P6, woman, 27 years, 2nd year of PhD).

“I’m afraid they will come again. I don’t know if it’s secure to work here, but I do work. There are no other difficulties, except for the problems with internet, electricity, and air alarms.” (P10, woman, 26 years, 1st year of PhD).

“There are rocket attacks. It’s scary. I can’t concentrate. My child is afraid all the time. I’m getting used to it.” (P19, woman, 27 years, 1st year of PhD).

“I experienced very loud explosions. I still remember them. I can’t make myself start the work. I am afraid during the air alarms.” (P20, woman, 26 years, 1st year of PhD).

“Because of air alarms, I feel danger and fear. The future is uncertain. I have no ideas about the thesis.” (P43, woman, 34 years, 2nd year of PhD).

Disruption of academic and research infrastructure

The war has severely disrupted participants’ academic and research activities. Destroyed equipment and laboratory facilities have hindered many research efforts. Many participants have had to pause their studies or work under challenging conditions, such as a lack of electricity and internet access. Despite these challenges, some remain determined to complete their work, though often with delayed timelines.

“I do not have patients now, as most of my research subjects have left the country. I do not know what to do.” (P11, man, 27 years, 2nd year of PhD).

“All the mice died during the first month, as nobody fed them when we were under attacks in March. The study stopped.” (P7, man, 32 years, 3rd year of PhD).

“Before the war, I bought rabbits for a total of 1000 USD. Then the research stopped when the war began. I lost that money. I don’t know if I want to repeat the experiment.” (P18, man, 27 years, 2nd year of PhD).

“I will finish my research, but later. Right now, we must work towards victory.” (P35, man, 32 years, 3rd year of PhD).

Financial strain

Financial strain was common among participants, with many struggling to cover basic expenses and repairs to their homes and workspaces. This economic burden often took precedence over their academic pursuits.

“I am trying hard to find money to repair my mother’s house.” (P7, man, 32 years, 3rd year of PhD).

“My property disappeared after occupation by the Russians. I have to earn money now to cover the expenses, and

then I will think about the dissertation.” (P21, man, 29 years, 2nd year of PhD).

“I have to borrow money for essential things. The research has been stopped.” (P29, man, 28 years, 2nd year of PhD).

“Now I spend all my time earning money. I had savings, but they were stolen.” (P36, man, 28 years, 2nd year of PhD).

Adaptation and coping mechanisms

Participants developed various coping mechanisms to manage their challenging circumstances. These included seeking temporary relocation, focusing on incremental academic progress, taking additional courses, finding relief in alcohol, or continuing their work despite emotional numbness. Some remained optimistic despite the difficulties.

“Research is all that I can do. I will defend my thesis.” (P12, man, 32 years, 3rd year of PhD).

“I experience no internet access and no electricity. It is cold in the house and at work, unpleasant. I don’t want the enemy to return. Air alarms are getting on my nerves, but my thesis and teaching keep me going; they give meaning to my life.” (P15, man, 30 years, 3rd year of PhD).

“I am just taking some courses and earning credits, I will resume my research later, probably, not sure.” (P18, 27 years, 2nd year of PhD).

“I am quite optimistic. Even though air alarms are getting on my nerves, I will complete the thesis on time.” (P41, man, 35 years, 3rd year of PhD).

“My wife moved abroad with our children. I often find myself drinking in the evening instead of working. I realize I am behind schedule.” (P22, man, 32 years, 3rd year of PhD).

“I need to be doing something productive. I go to work and to the University because I have to.” (P43, woman, 34 years, 2nd year of PhD).

Inability to continue

Some students described feeling overwhelmed and unable to continue their studies due to the challenges they faced.

“I experienced broken windows in Lukianivka. There were very loud explosions. I still remember it. I can’t make myself start the work. I am afraid during the air alarms.” (P20, woman, 26 years, 1st year of PhD).

“My family is separated. I don’t know what’s happening with my children or how they’re growing up without me. They are in Slovakia. It frustrates me. I am not working on the thesis right now.” (P39, 30 years, man, 2nd year of PhD).

“Thesis? I have no idea. Later, not now. I can’t work under such conditions.” (P45, man, 28 years, 2nd year of PhD).

Data from the school: failing grades, repeated courses, and defended theses

No Bogomolets NMU PhD students received failing grades during 2022 and 2023 due to the war. In 2021, 10 students dropped out of the PhD program after their first year. However, in 2022, no students dropped out of the program.

Although three students repeated some courses in the 2021/2022 academic year after missing two semesters (including the pre-war autumn term), this was unrelated to wartime challenges. Since the onset of the war, 35 PhD theses were defended at Bogomolets NMU in 2022 and 2023, and the number of applications for PhD thesis defenses in 2024 has tripled.

Discussion

The survey conducted among 108 PhD students at Bogomolets NMU during the 2022–2023 academic year amid the ongoing war reveals significant challenges in their academic journeys. About 70% experienced class disruptions due to air raid alarms or shelling, and 68% resumed classes the same day. Concentration was difficult for 77% of students, with many citing emotional stresses and the loss of loved ones. Despite these hardships, 85% of the candidates still envision their future as physicians, scientists, or teachers in Ukraine. This optimism was mirrored in their academic progress. Adaptation to the extraordinary conditions varied, with half of the students adapting well, including 12% who indicated they had fully adapted to the war circumstances. However, a notable segment found adapting challenging. Financial strain, loss of research data, and damaged infrastructure further impeded progress. Some students adapted, while others struggled significantly, indicating the war’s profound impact on their education and mental well-being.

Challenges in academic continuity during wartime

The full-scale Russian invasion of Ukraine, which began in 2022, has severely impacted Ukraine’s education system, coming shortly after the global COVID-19 pandemic. The consequences of the conflict extend beyond a humanitarian crisis, posing a severe threat to the educational future of an entire generation of Ukrainians. Education is a critical and irreplaceable foundation for the nation’s future, and the disruption caused by the war jeopardizes this essential pillar [9].

Significant shifts have been made in Ukraine’s higher education since 2002 due to the destruction of infrastructure, the reduced operational capacity of universities in eastern Ukraine and Crimea, and widespread migration. In response to martial law, the Ukrainian government-imposed restrictions on international academic mobility. Many institutions switched to providing education online

or, where feasible, through hybrid learning approaches [10].

The significant disruptions experienced by PhD students in Ukraine due to the war, as highlighted by the high percentage of students (70%) reporting class interruptions and 68% experiencing the resumption of classes after shelling, align with findings in conflict zones globally. A study published in 2021 on the consequences of the armed conflict in Yemen reported that higher education was severely impacted, both qualitatively and quantitatively [11].

The disruption of academic infrastructure in Ukraine, coupled with various tangible and intangible personal losses, further exacerbated challenges in academic continuity during the war, as evidenced by the participants in our study. Many students in our study lost research infrastructure and investments, discouraging some of them.

In 2022, an analysis of the effects of martial law on the research motivation of PhD students at Sumy State Pedagogical University in Ukraine was published, focusing on those majoring in educational and pedagogical sciences. The study, conducted among first- to fourth-year PhD students admitted between 2018 and 2021, involved 22 participants. The findings indicated a significant decline in research motivation due to the ongoing war in Ukraine, as evidenced by surveys, observations, and interviews. This decrease was further corroborated by the PhD students' annual reports, which showed reduced research activity in the latter half of the 2021–2022 academic year. The study identified several challenges that impacted motivation, including emotional distress, poor internet connectivity, organizational difficulties, and the loss of research materials [12]. Boichenko's findings are consistent with the results of this study.

Psychological impact and resilience

The study indicated that many students struggled, with two-thirds perceiving their studies as somewhat hard. On the contrary, a small fraction denied experiencing difficulty, possibly as a coping mechanism in response to trauma, which could indicate substantial psychological distress.

The study also underscores the emotional and psychological toll of the war, with many students reporting difficulties concentrating and experiencing fear and anxiety. This is consistent with existing research on the impact of war on mental health [13]. One of the most significant consequences of war is its effect on the mental health of the civilian population. The prevalence of these disorders is closely linked to the level of trauma experienced and the availability of both physical and emotional support systems [13]. However, it has been shown that in the areas of conflict, many displaced students exhibit

resilience and determination to pursue their goals despite adversity [14].

Our study is also a testament to the resilience of PhD students, as it highlighted the remarkable ability of many of them to adapt and persist despite facing severe challenges due to the ongoing conflict in Ukraine. Despite significant disruptions, including physical danger, the loss of loved ones, and the destruction of research infrastructure, many students managed to continue their studies. Even under such stress, some students were driven by routine, academic necessity, or a desire to contribute to their country's future. A notable proportion adapted much of their education and research to the wartime conditions. This resilience is further demonstrated by most PhD students in our study, who expressed a firm commitment to continuing their careers in Ukraine as scientists, physicians, or educators.

In our study, some individuals expressed a wish to leave Ukraine. Millions of civilians left Ukraine since the start of the full-scale Russian invasion of Ukraine, facing considerable challenges abroad [15]. In that context, it is important to highlight the importance of mental health and social support for Ukrainian refugees in the host countries, particularly considering the diverse needs of individuals [16, 17]. Those who stayed often experienced post-traumatic stress disorder (PTSD) associated with the war activities impacting them [18]. A comprehensive system of psychosocial support is needed for Ukrainians during and after the war [1].

Academic and research disruptions

In this study, we documented the disruption of research activities due to infrastructure destruction and data loss. The loss of research data and inability to access necessary resources, as reported by participants, align with global studies on how conflict interrupts scientific research, leading to significant delays or complete cessation of academic projects [19]. The adaptation strategies employed by students, such as shifting research timelines and finding alternative ways to continue work, demonstrate a remarkable commitment to their academic goals despite the adverse conditions.

Furthermore, many students cited financial difficulties as a reason for their academic disruption. Financial difficulties are a common consequence of war, as evidenced by the participants' struggles to manage basic expenses alongside their academic responsibilities. This finding is consistent with studies that highlight how economic hardship during conflicts forces students to prioritize survival over education, often leading to prolonged or incomplete academic trajectories [20].

Adaptation and coping mechanisms

The diverse coping mechanisms reported by the PhD students in this study, ranging from temporary relocation to engaging in routine academic tasks to maintain a sense of normalcy, are in line with adaptive strategies documented in conflict-affected populations. Research suggests that maintaining routine activities, including academic pursuits, can provide psychological stability and a sense of purpose amidst chaos [21, 22].

Implications for future research and education policy

The findings of this study underscore the need for targeted support mechanisms for PhD students in conflict zones, including mental health services, flexible academic policies, and financial aid. The continued academic engagement of students despite these challenges suggests that with appropriate support, educational institutions can help mitigate the impact of war on academic progress [23].

Limitations

The data for this study were collected only in Kyiv. Furthermore, the study was conducted during a relatively calm period in autumn 2023. Experiences in other regions or during more intense periods might differ. The study relied on self-reported data, which could be subject to bias. The questionnaire format may not have captured the full complexity of the students' experiences.

Conclusion

While the war has imposed severe challenges on the educational pursuits of medical PhD students in Kyiv, Ukraine, the resilience displayed by many highlights their determination to persevere. This resilience is a testament to their commitment to their academic careers despite the adversities posed by the ongoing conflict. On the other hand, some students struggled to cope. Further support, both psychological and material, will be crucial in helping these students continue their studies and contribute to the rebuilding of their country.

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12909-024-06400-3>.

Supplementary Material 1

Supplementary Material 2

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Author contributions

IK, KB, LL: study design; LL: data collection; IK, KB, LL, LP: data interpretation, drafting the manuscript, reviewing the manuscript; IK, KB, LL, LP: approval of the final version of the manuscript.

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Data availability

The anonymized data collected within the study are available from the corresponding author on request.

Declarations

Ethics approval and consent to participate

The Bogomolets National Medical University waived the requirement to submit the study protocol to the Bioethics Committee, in accordance with University rules and current Ukrainian legislation. The University took into consideration that participation in this study would be voluntary, with participants providing their consent (Decision number: 120/3-605 issued on 22/04/2024). Oral informed consent was obtained from all participants prior to the study. The study was conducted in compliance with all applicable regulations.

Consent for publication

All authors consented to the publication of the study.

Clinical trial registration number

Not applicable; this study was not a clinical trial.

Competing interests

The authors declare no competing interests.

Author details

¹Bogomolets National Medical University, Kyiv, Ukraine

²Center for Evidence-based Medicine, Department of Nursing, Department of Medicine, Catholic University of Croatia, Ilica 242, Zagreb, Croatia

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