



# Predictors of life and health threats experienced by Ukrainians and Belarusians studying in Lublin

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## Abstract

**Introduction and Objective.** International students may face threats to life and health related to adaptation difficulties in a new social environment. The aim of the study is to identify predictors of such threats among Ukrainian and Belarusian students studying in Lublin, Poland.

**Materials and Method.** An online diagnostic survey was conducted in 2023 among students of three universities in Lublin. The final sample comprised 403 respondents: 232 students from Ukraine and Belarus and 171 Polish students. Descriptive statistics, the chi-square test, and logistic regression analysis were used.

**Results.** During their studies, a significantly higher proportion of students from Ukraine (43.7%) and Belarus (44.4%) than Polish students (23.4%) reported experiencing life- or health-threatening situations ( $p < 0.001$ ). Logistic regression showed that discrimination based on nationality or religion was the strongest predictor of such threats in both international and Polish students ( $p < 0.001$ ). Discrimination in this respect increases the likelihood of experiencing threats to life or health. Among students from Ukraine and Belarus, year of study ( $p = 0.016$ ) and number of close friends ( $p = 0.027$ ) were also significant predictors, while perceived access to medical assistance approached statistical significance ( $p = 0.054$ ). The likelihood of experiencing threats decreased with progression through the years of study and with a more positive assessment of access to medical treatment, but increased with the number of close friends.

**Conclusions.** Threats to life and health among Ukrainian and Belarusian students are significantly associated with discrimination and adaptation difficulties. Universities should therefore strengthen anti-discrimination measures, support integration within the academic community, and improve communication with international students. Such actions may enhance both subjective and objective safety by improving students' sense of security and reducing the risk of threatening situations.

## Key words

predictors, discrimination, international students, health threats, healthcare access

## INTRODUCTION

The educational migration of students from Eastern Europe, particularly Ukraine and Belarus, is one of the key social trends of the last decade. This phenomenon has intensified in recent years, which may be related to, among other things, socio-political changes and the crisis situation in the region, including the COVID-19 pandemic and the Russian invasion of Ukraine in 2022 [1–3]. Research on young people from Ukraine, including students, indicates that these events have significant consequences for their mental functioning and adaptation processes in new conditions [1].

Poland has become one of the main destinations for educational migration due to its geographical and cultural proximity, the accessibility of higher education, and relatively stable living conditions [2]. The literature indicates that decisions to study abroad are multifactorial and can be analysed within a 'push-pull' model, which takes into account both push and pull factors [4]. This model provides

a general theoretical framework for interpreting educational migration and does not directly address the specifics of individual destination countries. The importance of social and language-related factors is also evident in studies on the functioning of Ukrainian students in Poland, which highlight the role of language barriers and adaptation challenges [5]. More recent studies highlight the growing importance of political factors, especially in the context of the political crisis in Belarus and the war in Ukraine, which intensified migration decisions and educational mobility [3].

Recent years have witnessed a substantial increase in the number of international students in Poland, reflecting the broader process of higher education internationalisation across Europe. In 2024, students from Ukraine accounted for 45.2% of all international students in Poland (47,502 individuals), whereas students from Belarus constituted 11.6% (12,207 individuals) [6].

A similar trend is observed at the local level. In the 2024–2025 academic year, international students represented approximately 14.5% of the total student population in Lublin (58,556 students). Among them, 3,893 were students from Ukraine (45.9%), and 944 were from Belarus (11.1%) [6]. These figures highlight the important role of Eastern European

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students in the academic and social functioning of Lublin's university community.

Previous research indicates that international students in Poland highly rate the level of safety, but their experiences differ from those of Polish students. Students from Ukraine and Belarus are more likely than Polish students to express concerns about verbal abuse and discrimination, while Polish students are more likely to fear conventional crime [7]. Experiences of discrimination and exposure to hate speech are associated with poorer mental well-being and lower self-esteem, which may negatively affect subjective perceptions of safety and health [8].

An important factor influencing the sense of security, not only among students, was the COVID-19 pandemic. Research conducted among Polish and international students in Poland indicates that the pandemic period was associated with increased anxiety levels and increased experiences of discrimination [9]. In particular, it was shown that both the perceived risk of COVID-19 infection and experiences of discrimination were significant factors associated with anxiety symptoms in both analysed groups. At the same time, the study results indicate the complex nature of these relationships – anxiety levels were associated with both perceived health risks and experiences of discrimination [9]. It is worth emphasising that international students more often reported experiences of ethnic discrimination, which may constitute an additional factor burdening their mental functioning in crisis situations. Social support, which served a protective function, played an important role in the analysed relationships. Individuals reporting higher levels of support were characterised by lower levels of anxiety symptoms, indicating its importance as a resource that helps mitigate the negative effects of stress and uncertainty related to the pandemic [9]. This role may be particularly important for international students due to potentially limited social networks in the host country and greater susceptibility to experiences of discrimination.

From a theoretical perspective, the experiences of international students can be analysed based on the concept of acculturation proposed by John W. Berry, according to which the process of adapting to a new sociocultural environment involves various strategies for individual functioning. Strategies such as marginalisation or separation can lead to decreased psychological well-being and are associated with increased stress levels and a decreased sense of security. On the other hand, integration promotes better adaptive outcomes [10]. However, adaptation to a new environment may expose international students to various life and health threats, including psychological problems (stress, anxiety disorders, depression), social difficulties (isolation and limited social support), and physical health-related challenges. Additional risk factors include language barriers, financial difficulties, cultural differences, and limited access to healthcare services [5].

Previous studies have identified several predictors of life and health threats among international students. The most important include socio-demographic characteristics (e.g., gender and financial situation), level of social support, experiences of discrimination, adaptation difficulties, and access to healthcare services [7, 9]. Furthermore, experiences related to war and forced migration may exacerbate stress, anxiety, and adaptation problems, thereby increasing vulnerability to health-related problems [11].

Despite the growing body of research on international students in Poland, the mechanisms underlying life and health threats in this population remain insufficiently understood, particularly in relation to students from Ukraine and Belarus, and within specific local academic settings. Previous studies concerning Eastern European students in Poland have highlighted difficulties related to discrimination, social integration, and adaptation processes [1, 12]. However, limited attention has been paid to factors associated with perceived safety among Ukrainian students [7, 13]. Empirical evidence regarding the role of language barriers and access to healthcare services as determinants of perceived insecurity remains scarce. Moreover, studies integrating psychological, physical, and social dimensions of life and health threats and identifying their key predictors within a specific academic environment, are still lacking.

The aim of this study is to characterize the threats to life and health experienced by students from Ukraine and Belarus studying in Lublin, and to compare the perceived level of these threats among international students with that of Polish students in Poland. In addition, the study seeks to identify the factors determining the perceived level of threats to life and health among the surveyed students.

## MATERIALS AND METHOD

The research material was collected through a diagnostic survey, using an online questionnaire concerning the perceived safety of students from Ukraine and Belarus. For comparative purposes, the study also included Polish students in Poland, who served as the control group for the international students. The selection of the primary sample (international students from Ukraine and Belarus) and the reference sample (Polish students in Poland) was based on the following criteria: (1) the study included students enrolled at three universities in Lublin: Maria Curie-Skłodowska University (UMCS), the University of Life Sciences and the University of Technology; (2) the target sample size for each national group was approximately 150 participants; (3) the online survey was initially distributed to all students from Ukraine and Belarus studying at the selected universities; (4) subsequently, the survey was distributed to Polish students enrolled in the same faculties as the Ukrainian and Belarusian students; and (5) data collection was planned to conclude once the target number of approximately 150 respondents had been reached in each group. The intended sample size was not achieved for students from Belarus ( $n = 81$ ). Therefore, taking into account the minimum sample size requirements for logistic regression analysis, the Belarusian student group was combined with the Ukrainian student group, and the regression analysis was conducted for the combined category of international students.

The study was conducted from 26 June – 29 November 2023. An email invitation to participate in the study was sent to all students from Ukraine ( $N=881$ ) and Belarus ( $N=565$ ) studying at the above-mentioned universities, as well as to Polish students from selected faculties of these universities. In total, the online questionnaire was distributed to approximately 3,000 students. Completed questionnaires were received from 419 individuals. A small group of doctoral students was excluded from the analysis, resulting in a final analytical sample of 403 individuals. The response rate,

**Table 1.** Socio-demographic characteristics of the respondents

| Variables                              | Categories                               | N   | % (n=403) |
|----------------------------------------|------------------------------------------|-----|-----------|
| Country of origin                      | Poland                                   | 171 | 42.4      |
|                                        | Ukraine                                  | 151 | 37.5      |
|                                        | Belarus                                  | 81  | 20.1      |
| Gender                                 | Woman                                    | 259 | 64.3      |
|                                        | Man                                      | 144 | 35.7      |
| Age in years                           | Up to 19-years-old                       | 142 | 35.2      |
|                                        | 20 – 22-years-old                        | 185 | 45.9      |
|                                        | 23 or more                               | 76  | 18.9      |
| Type of place of origin                | Village                                  | 97  | 24.1      |
|                                        | City with up to 100,000 inhabitants      | 115 | 28.5      |
|                                        | City with more than 100,000 inhabitants  | 191 | 47.4      |
| Place of residence during studies      | Student dormitory                        | 160 | 39.7      |
|                                        | With family/friends or in own apartment  | 79  | 19.6      |
|                                        | Guest house (rented apartment)           | 164 | 40.7      |
| Self-assessment of financial situation | Bad                                      | 13  | 3.2       |
|                                        | Rather bad                               | 42  | 10.4      |
|                                        | Average                                  | 201 | 49.9      |
|                                        | Rather good                              | 99  | 24.6      |
|                                        | Good                                     | 48  | 11.9      |
| University                             | Maria Curie-Skłodowska University (UMCS) | 264 | 65.5      |
|                                        | University of Life Sciences (UP)         | 51  | 12.7      |
|                                        | University of Technology (PL)            | 88  | 21.8      |
| Mode and degree of study               | 1st degree                               | 307 | 76.2      |
|                                        | 2nd degree                               | 54  | 13.4      |
|                                        | long-cycle master's studies              | 42  | 10.4      |
| A year of studies                      | I                                        | 101 | 25.1      |
|                                        | II                                       | 107 | 26.6      |
|                                        | III                                      | 97  | 24.1      |
|                                        | IV                                       | 72  | 17.9      |
|                                        | V                                        | 26  | 6.5       |
| Number of close friends                | No friends                               | 103 | 25.6      |
|                                        | 1 – 5 friends                            | 206 | 51.1      |
|                                        | 6 or more friends                        | 94  | 23.3      |

N – numbers; n – total number of respondents

calculated based on the total number of invitations sent, was approximately 13.5%.

The questionnaire was prepared in Polish in three versions: 1) for Polish students, 2) for students from Ukraine, and 3) for students from Belarus. The versions differed in the content of the invitation and the number of questions included. The questionnaire addressed to students from Ukraine and Belarus contained an additional block of six questions concerning their residence status in Poland. The survey questionnaire was prepared in Polish, although the study participants included students from Ukraine and Belarus. This approach was adopted on the assumption that the international students possessed a sufficient command of the Polish language, as they were enrolled in degree programmes conducted in Polish.

The core sample consisted of students from Ukraine and Belarus (N = 232), representing 57.6% of the total sample. Within this group, students from Ukraine accounted for 37.5% of the entire sample, while students from Belarus

accounted for 20.1% (Tab. 1). The reference group consisted of Polish students who represented 42.4% of the sample. The sizes of the student subgroups distinguished by country of origin differed significantly ( $\chi^2 = 33.251$ ;  $p < 0.001$ ). For the purposes of subsequent analyses, students from Ukraine and Belarus were combined into a single group of international students, representing 57.6% of the total study sample. The size of this combined group did not differ significantly from that of the Polish student group ( $\chi^2 = 1.242$ ;  $p = 0.265$ ).

Taking into account the total number of students of the three universities in Lublin (UMCS, University of Technology, University of Life Sciences – approximately 28,000 people in the academic year 2022–2023), the study included 17.1% of all students from Ukraine, 14.3% of students from Belarus and approximately 0.6% of Polish students enrolled at these institutions.

The majority of respondents were women (64.3%), while men constituted approximately one-third of the sample. The respondents ranged in age from 17–28 years. The largest group consisted of individuals aged 20–22 (45.9%). Respondents under the age of 19 accounted for 35.2% of the sample, while 18.9% were aged 23 or older. Nearly one-quarter of the respondents came from rural areas (24.1%), while the remainder came from cities of various sizes (Tab. 1). During their studies in Lublin, the largest proportion of respondents lived in rented rooms or shared apartments (40.7%), followed closely by those residing in student dormitories (39.7%). The remaining 19.6% lived in their own apartment or house, or with family or friends.

Self-assessment of financial status during studies indicated that the largest proportion of respondents evaluated their financial situation as average (49.9%) (Tab. 1). A slightly smaller group of respondents (36.5%) described their financial situation as rather good or good, while 13.6% assessed it as rather bad or bad.

The largest group of respondents were students of the Maria Curie-Skłodowska University (UMCS) (65.5%). Students of the University of Technology constituted 21.8% of the sample, while 12.7% were students of the University of Life Sciences (Tab. 1). The vast majority of respondents were full-time first-cycle students (76.2%). Second-cycle students constituted 13.4% of the sample, while 10.4% were enrolled in long-cycle master's degree programs. The distribution of respondents by year of study was relatively even. First-, second-, and third-year students each accounted for approximately 25% of all respondents. Fourth-year students constituted 17.9% of the sample, while fifth-year students accounted for 6.5%.

Indicators of perceived threats to life or health were analysed in relation to independent variables representing four groups of factors: the socio-demographic characteristics of the respondents, social support, experiences of discrimination, and access to medical care. The selection of independent variables was based on findings reported in the literature concerning the determinants of health, well-being, and functioning among international students. The most frequently analysed predictors of well-being and the sense of safety among international students included socio-demographic characteristics such as gender, age, country of origin, year of study and financial situation [4, 7, 9, 14].

Social support was also of significant importance in the adaptation process. For international students, support networks facilitate adjustment to a new cultural environment, reduce feelings of social isolation, and increase the likelihood



of receiving assistance in crisis situations. Numerous studies have shown that higher levels of social support are associated with lower levels of stress, anxiety, and with higher levels of well-being and a sense of security [7, 9, 15].

Another group of potential predictors comprises experiences of discrimination. Studies conducted among international students in Poland indicate that discrimination and unfair treatment are associated with poorer psychological well-being, lower self-esteem, and higher levels of stress, which may contribute to a reduced sense of safety and an increased perception of threats to life or health [8, 9].

Access to healthcare was also included among the analysed factors, as it is recognised as one of the fundamental social determinants of health [16]. However, international students often encounter numerous barriers to healthcare, including limited knowledge of the healthcare system, language difficulties, and administrative obstacles. Limited access to medical care may increase feelings of uncertainty and fears regarding the ability to obtain help in situations where health or life is at risk [7, 9].

Based on the literature review, the following independent variables were selected for the analysis of perceived threats to life and health: country of origin, gender, age, type of permanent place of residence (rural/urban), place of residence during studies, field of study, year of study, number of close friends, country of origin of close friends, experience of unfair treatment, and perceived access to healthcare.

The empirical data collected were subjected to statistical analysis using IBM SPSS Statistics 29. In the first stage, a descriptive analysis was carried out, covering frequency distributions and percentages for individual variables. In the second stage, the strength and statistical significance of the associations between the dependent and independent variables were assessed using the chi-square test and logistic regression analysis. Logistic regression was used to identify predictors of perceived threats to life and health and to estimate the strength of the influence of individual independent variables on the probability of the analysed indicators occurring.

## RESULTS

In the analysis of the level of life and health threats among Ukrainian and Belarusian students studying in Lublin, four indicators were used: experiencing life- and health-threatening events within the city, experiencing such events in the place of residence or its vicinity, being a victim of a crime, and concern about one's own health (Tab. 2).

Students from Ukraine, Belarus, and Polish students reported experiencing threats to their life and health (both in Lublin and in their neighbourhood) and being a victim of crime to a similar extent – no statistically significant differences were found in this respect. However, significant differences were observed in concerns about their own health. Such concerns were reported by 23.4% of Polish students and approximately 44% of students from Ukraine and Belarus (43.7% and 44.4%, respectively). The percentage of Belarusians and Ukrainians reporting such concerns was similar, whereas among Polish students it was significantly lower ( $\chi^2 = 18.272$ ,  $p < 0.001$ ).

Taking into account various forms of life- or health-threatening experiences, the respondents were divided into

**Table 2.** Threats to life or health during studies in Lublin

| Categories                                                                             | COUNTRY OF ORIGIN |       |         |       |         |       | Total |       | Chi <sup>2</sup> Test |        |
|----------------------------------------------------------------------------------------|-------------------|-------|---------|-------|---------|-------|-------|-------|-----------------------|--------|
|                                                                                        | Poland            |       | Ukraine |       | Belarus |       |       |       | χ <sup>2</sup>        | p      |
|                                                                                        | N                 | %     | N       | %     | N       | %     | N     | %     |                       |        |
| An event threatening life or health in the city                                        |                   |       |         |       |         |       |       |       |                       |        |
| No                                                                                     | 153               | 89.5  | 124     | 82.1  | 69      | 85.2  | 346   | 85.9  | 3.609                 | 0.165  |
| Yes                                                                                    | 18                | 10.5  | 27      | 17.9  | 12      | 14.8  | 57    | 14.1  |                       |        |
| Total                                                                                  | 171               | 100.0 | 151     | 100.0 | 81      | 100.0 | 403   | 100.0 |                       |        |
| An event threatening life or health in the area of residence<br>(dormitory, apartment) |                   |       |         |       |         |       |       |       |                       |        |
| No                                                                                     | 158               | 92.4  | 142     | 94.0  | 75      | 92.6  | 375   | 93.1  | 0.368                 | 0.832  |
| Yes                                                                                    | 13                | 7.6   | 9       | 6.0   | 6       | 7.4   | 28    | 6.9   |                       |        |
| Total                                                                                  | 171               | 100.0 | 151     | 100.0 | 81      | 100.0 | 403   | 100.0 |                       |        |
| Being a victim of crime                                                                |                   |       |         |       |         |       |       |       |                       |        |
| No                                                                                     | 157               | 91.8  | 138     | 91.4  | 72      | 88.9  | 367   | 91.1  | 0.609                 | 0.738  |
| Yes                                                                                    | 14                | 8.2   | 13      | 8.6   | 9       | 11.1  | 36    | 8.9   |                       |        |
| Total                                                                                  | 171               | 100.0 | 151     | 100.0 | 81      | 100.0 | 403   | 100.0 |                       |        |
| Concern for one's own health                                                           |                   |       |         |       |         |       |       |       |                       |        |
| No                                                                                     | 131               | 76.6  | 85      | 56.3  | 45      | 55.6  | 261   | 64.8  | 18.272                | <0.001 |
| Yes                                                                                    | 40                | 23.4  | 66      | 43.7  | 36      | 44.4  | 142   | 35.2  |                       |        |
| Total                                                                                  | 171               | 100.0 | 151     | 100.0 | 81      | 100.0 | 403   | 100.0 |                       |        |
| Experience of at least one of the threats analysed above                               |                   |       |         |       |         |       |       |       |                       |        |
| No                                                                                     | 110               | 64.3  | 71      | 47.0  | 36      | 44.4  | 217   | 53.8  | 13.271                | <0.001 |
| Yes                                                                                    | 61                | 35.7  | 80      | 53.0  | 45      | 55.6  | 186   | 46.2  |                       |        |
| Total                                                                                  | 171               | 100.0 | 151     | 100.0 | 81      | 100.0 | 403   | 100.0 |                       |        |

two groups: 1) those who experienced at least one of the analysed events, and 2) those who did not experience such a situation. The highest percentage of those declaring life- or health-threatening experiences was observed among students from Belarus (55.6%), slightly lower among students from Ukraine (53.0%), and the lowest among Polish students (35.7%). These differences are statistically significant ( $\chi^2 = 13.271$ ;  $p < 0.001$ ).

Studies conducted among international students indicate that access to healthcare is often hindered by language, organizational, and financial barriers, as well as by limited familiarity with the healthcare system. These barriers influence individuals' subjective assessment of their ability to obtain medical treatment and have their healthcare needs met in the event of illness [17, 18]. Therefore, the present study included the subjective assessment of access to medical treatment as one of the variables potentially associated with experiencing threats to life and health. A low level of, or lack of, access to healthcare may constitute a genuine threat to health and even to life.

The surveyed students assessed their perceived ability to obtain medical treatment using a five-point Likert scale, where 1 indicated no access and 5 indicated very good access. The analysis showed that Polish students rated their access to medical treatment in the event of illness significantly more positively than students from Ukraine and Belarus (Tab. 3). More than half of the Polish students (56.1%) believed that their healthcare needs would be fully or rather adequately met. The corresponding proportions were considerably lower among students from Ukraine (26.5%) and Belarus (23.4%). In contrast, international students reported no access or limited access to medical treatment significantly more

**Table 3.** Assessment of the possibility of meeting treatment needs during studies in Lublin by country of origin

| Categories                                                           | COUNTRY OF ORIGIN |              |            |              |           |              | Total      |              | Chi² Test |        |
|----------------------------------------------------------------------|-------------------|--------------|------------|--------------|-----------|--------------|------------|--------------|-----------|--------|
|                                                                      | Poland            |              | Ukraine    |              | Belarus   |              | N          | %            | χ²        | p      |
|                                                                      | N                 | %            | N          | %            | N         | %            |            |              |           |        |
| Assesses the satisfaction of treatment needs in the event of illness |                   |              |            |              |           |              |            |              |           |        |
| 1 – None                                                             | 3                 | 1.8          | 16         | 10.6         | 7         | 8.6          | 26         | 6.5          | 63.470    | <0.001 |
| 2                                                                    | 23                | 13.5         | 46         | 30.5         | 18        | 22.2         | 87         | 21.6         |           |        |
| 3                                                                    | 49                | 28.7         | 49         | 32.5         | 37        | 45.7         | 135        | 33.5         |           |        |
| 4                                                                    | 51                | 29.8         | 35         | 23.2         | 12        | 14.8         | 98         | 24.3         |           |        |
| 5 – Full                                                             | 45                | 26.3         | 5          | 3.3          | 7         | 8.6          | 57         | 14.1         |           |        |
| <b>Total</b>                                                         | <b>171</b>        | <b>100.0</b> | <b>151</b> | <b>100.0</b> | <b>81</b> | <b>100.0</b> | <b>403</b> | <b>100.0</b> |           |        |

often than Polish students (41.1% of Ukrainian students, 30.8% of Belarusian students, and 15.3% of Polish students, respectively). These differences were statistically significant ( $\chi^2 = 63.470$ ;  $p < 0.001$ ).

The variable 'subjective assessment of access to medical treatment' was treated as an independent variable in the model examining the determinants of the perceived threat to life or health among the surveyed students.

To determine the factors associated with experiencing life- or health-threatening situations during studies in Lublin, a theoretical model of this phenomenon was developed, with the intention of testing it using logistic analysis (Tab. 4). The dependent variable in the model is 'life- or health-threatening situations'. This variable was developed based on four variables: 1) the occurrence of life- or health-threatening situations in Lublin during studies; 2) the occurrence of life- or health-threatening situations in the area of residence during studies (dormitory, train station, house); 3) being a victim of crime during studies in Lublin; and 4) fear for one's health. A respondent experiencing at least one of the four events indicates that they experienced a life- or health-threatening situation (coded 1), while the absence of such events indicates that they did not experience a life- or health-threatening situation (coded 0).

In the group of independent variables, the following variables were included in the first stage: Ukrainian origin, Belarusian origin, year of study, age, gender, origin from a large city, rural origin, living in a dormitory, living with family or in one's own apartment, self-assessment of financial situation during studies, number of close friends during studies, country of origin of close friends, and mistreatment due to religious or national attitudes, perceived access to healthcare; perceived ability to obtain medical treatment in the event of illness. In the next stage, correlations between independent variables were examined. Analysis of the  $r$  correlation coefficients revealed that some variables were significantly related, but the correlations were weak or moderate ( $r < 0.4$ ). These variables were retained in the proposed model, whereas one variable from each pair of strongly correlated variables was excluded from the analysis. These included: 1) year of study and age ( $r = 0.512$ ) – the year of study variable was retained in the model; 2) number of close friends during studies and the country of origin of close friends ( $r = 0.42$ ) – the number of close friends was retained in the model.

Three models of the determinants of experiencing life or health threats were analysed: a model for the general sample of respondents, a model for Polish students, and a model

for students from Ukraine and Belarus. The rationale for combining the groups of students from Belarus and Ukraine was the relatively small sample of Belarusian students (81), which prevented the inclusion of all independent variables in the model. The model of life or health threats – for both the Polish student group and the Ukrainian and Belarusian students – included almost the same set of variables as in the model for the entire sample. The following variables were excluded from these models: Ukrainian origin and Belarusian origin. The justification for excluding these variables is the lack of observations for students from Ukraine and Belarus in the Polish student sample. These variables were included in the model for the general sample of respondents.

Independent variables, whether bivalent, ordinal, or continuous, were entered in their original form. Nominal variables were transformed into bivalent variables ('0' = missing category, '1' = present category). In each case, one category was omitted and treated as the reference category for the remaining categories of that variable in the model.

The experience of mistreatment emerged as the strongest predictor of perceived threat to life or health, increasing the likelihood of its occurrence by nearly 200% ( $OR = 2.919$ ). Among Polish students, experiencing mistreatment was associated with a 248% increase in the likelihood of perceiving a threat to life or health ( $OR = 3.248$ ), whereas among international students, the increase was 201% ( $OR = 3.091$ ). Country of origin was also a significant predictor. Compared with the reference group, being of Ukrainian origin increased the likelihood of perceiving a threat to life or health by 98.1% ( $OR = 1.981$ ), whereas being of Belarusian origin increased the likelihood by 114.8% ( $OR = 2.148$ ). The association between gender and perceived threat to life or health approached the conventional level of statistical significance ( $p = 0.059$ ). The results indicate that men were 35.8% less likely than women to experience a perceived threat to life or health ( $OR = 0.642$ ). Logistic regression analysis conducted for the subgroup of Polish students showed that three variables were significantly associated with experiencing threats to life or health: the gender of the respondents – being a man reduces the probability of such experiences by 72.1% ( $OR = 0.279$ ), while being ill-treated because of national or religious attitudes increases the probability by 248% ( $OR = 3.248$ ). In addition, the year of study was a significant predictor, with each one-year increase in the year of study associated with a 42.5% increase in the likelihood of experiencing threats to life or health ( $OR = 1.425$ ).

In the model for students from Eastern European countries (Belarus and Ukraine), four variables were significantly

**Table 4.** Models of determinants of experienced threats to life or health (results of logistic regression using the input technique)

| Predictor (coding)                                    | B      | SE    | Wald   | df | p     | OR    |
|-------------------------------------------------------|--------|-------|--------|----|-------|-------|
| * Model for the total sample                          |        |       |        |    |       |       |
| Ukrainian origin (0 = No, 1 = Yes)                    | 0.684  | 0.304 | 5.058  | 1  | 0.025 | 1.981 |
| Belarusian origin (0 = No, 1 = Yes)                   | 0.764  | 0.371 | 4.239  | 1  | 0.04  | 2.148 |
| Gender (1 = Female, 2 = Male)                         | -0.443 | 0.234 | 3.562  | 1  | 0.059 | 0.642 |
| Year of study                                         | -0.059 | 0.093 | 0.41   | 1  | 0.522 | 0.942 |
| Rural origin (0 = Yes, 1 = No)                        | 0.005  | 0.308 | 0      | 1  | 0.986 | 1.005 |
| Large-city origin (0 = Yes, 1 = No)                   | -0.086 | 0.277 | 0.095  | 1  | 0.758 | 0.918 |
| Living in a student dormitory (0 = No, 1 = Yes)       | -0.414 | 0.263 | 2.483  | 1  | 0.115 | 0.661 |
| Living with family/in own apartment (0 = No, 1 = Yes) | -0.262 | 0.313 | 0.698  | 1  | 0.403 | 0.77  |
| Self-rated financial situation (1–5 scale)            | -0.196 | 0.126 | 2.442  | 1  | 0.118 | 0.822 |
| Number of close friends                               | 0.034  | 0.026 | 1.657  | 1  | 0.198 | 1.035 |
| Experience of mistreatment (0 = No, 1 = Yes)          | 1.071  | 0.24  | 19.885 | 1  | <.001 | 2.919 |
| Perceived access to healthcare (1–5 scale)            | -0.21  | 0.122 | 2.974  | 1  | 0.085 | 0.81  |
| Constant                                              | -0.507 | 1.151 | 0.194  | 1  | 0.66  | 0.603 |
| ** Model for Polish students                          |        |       |        |    |       |       |
| Gender (1 = Female, 2 = Male)                         | -1.278 | 0.424 | 9.077  | 1  | 0.003 | 0.279 |
| Year of study                                         | 0.354  | 0.165 | 4.593  | 1  | 0.032 | 1.425 |
| Rural origin (0 = Yes, 1 = No)                        | 0.26   | 0.398 | 0.429  | 1  | 0.513 | 1.297 |
| Large-city origin (0 = Yes, 1 = No)                   | -0.393 | 0.51  | 0.593  | 1  | 0.441 | 0.675 |
| Living in a student dormitory (0 = No, 1 = Yes)       | -0.926 | 0.585 | 2.502  | 1  | 0.114 | 0.396 |
| Living with family/in own apartment (0 = No, 1 = Yes) | -0.285 | 0.405 | 0.497  | 1  | 0.481 | 0.752 |
| Self-rated financial situation (1–5 scale)            | -0.201 | 0.2   | 1.013  | 1  | 0.314 | 0.818 |
| Number of close friends                               | -0.039 | 0.051 | 0.566  | 1  | 0.452 | 0.962 |
| Experience of mistreatment (0 = No, 1 = Yes)          | 1.178  | 0.417 | 7.97   | 1  | 0.005 | 3.248 |
| Perceived access to healthcare (1–5 scale)            | -0.063 | 0.203 | 0.097  | 1  | 0.756 | 0.939 |
| Constant                                              | 1.246  | 1.571 | 0.629  | 1  | 0.428 | 3.476 |
| *** Model for students from Ukraine and Belarus       |        |       |        |    |       |       |
| Gender (1 = Female, 2 = Male)                         | -0.099 | 0.309 | 0.102  | 1  | 0.75  | 0.906 |
| Year of study                                         | -0.303 | 0.125 | 5.855  | 1  | 0.016 | 0.739 |
| Rural origin (0 = Yes, 1 = No)                        | -0.104 | 0.56  | 0.035  | 1  | 0.853 | 0.901 |
| Large-city origin (0 = Yes, 1 = No)                   | 0.089  | 0.347 | 0.065  | 1  | 0.798 | 1.093 |
| Living in a student dormitory (0 = No, 1 = Yes)       | -0.377 | 0.319 | 1.402  | 1  | 0.236 | 0.686 |
| Living with family/in own apartment (0 = No, 1 = Yes) | 0.194  | 0.601 | 0.104  | 1  | 0.747 | 1.214 |
| Self-rated financial situation (1–5 scale)            | -0.254 | 0.171 | 2.192  | 1  | 0.139 | 0.776 |
| Number of close friends                               | 0.078  | 0.035 | 4.915  | 1  | 0.027 | 1.081 |
| Experience of mistreatment (0 = No, 1 = Yes)          | 1.128  | 0.316 | 12.718 | 1  | <.001 | 3.091 |
| Perceived access to healthcare (1–5 scale)            | -0.317 | 0.164 | 3.705  | 1  | 0.054 | 0.729 |
| Constant                                              | 1.409  | 1.658 | 0.722  | 1  | 0.395 | 4.093 |

\* Omnibus Test of Model Coefficients (Chi-square test)  $\chi^2 = 54.649$ ;  $p < 0.001$ ; Nagelkerke's  $R^2 = 0.169$ ; Hosmer–Lemeshow test  $\chi^2 = 2.693$ ;  $p = 0.952$ . \*\* Omnibus Test of Model Coefficients (Chi-square test)  $\chi^2 = 27.591$ ;  $p < 0.002$ ; Nagelkerke's  $R^2 = 0.205$ ; Hosmer–Lemeshow test  $\chi^2 = 10.192$ ;  $p = 0.252$ . \*\*\* Omnibus Test of Model Coefficients (Chi-square test)  $\chi^2 = 31.859$ ;  $p < 0.001$ ; Nagelkerke's  $R^2 = 0.171$ ; Hosmer–Lemeshow test  $\chi^2 = 12.789$ ;  $p = 0.119$ .

associated with experiencing threats to life or health: year of study, number of close friends, experience of mistreatment based on national or religious beliefs, and perceived access to healthcare (Tab. 4). The greatest increase in the likelihood of experiencing a perceived threat to life or health was observed among students from Eastern European countries who had experienced mistreatment on the basis of their national or religious beliefs – odds increasing by 201% (OR = 3.091). In contrast, the perceived threat to life or health decreased with progression through university. Each additional year of study was associated with a 26.1% reduction in the likelihood of

experiencing such threats (OR = 0.739). A similar relationship was observed for perceived access to healthcare. Each one-point increase in the five-point rating of access to healthcare was associated with a 27.1% reduction in the likelihood of experiencing threats to life or health (OR = 0.729). Conversely, the perceived threat to life or health increased with the number of close friends, with each additional close friend being associated with an 8.1% increase in the likelihood of experiencing such threats (OR = 1.081).

The obtained models turned out to be statistically significant (model of the whole sample –  $\chi^2 = 54.649$ ;  $p < 0.001$ );



model of Polish students  $\chi^2 = 27.591$ ;  $p < 0.002$ ; model of foreign students  $\chi^2 = 31.859$ ;  $p < 0.001$ ). All models are also characterised by a good fit to the data, which is confirmed by the results of the Hosmer–Lemeshow test (respectively: model of the whole sample  $\chi^2 = 2.693$ ;  $p = 0.952$ ; model of Polish students  $\chi^2 = 10.192$ ;  $p = 0.252$ ; model of students from the East  $\chi^2 = 12.789$ ;  $p = 0.119$ ). The models explain a relatively small part of the variability of the dependent variable: for the entire sample 16.9% (Nagelkerke's  $R^2 = 0.169$ ), for Polish students – 20.5% (Nagelkerke's  $R^2 = 0.205$ ), for students from Eastern countries – 17.1% (Nagelkerke's  $R^2 = 0.171$ ).

One important dimension of life and health risk is the assessment of the ability to meet health needs requiring medical care and treatment in the event of illness. A low level or inability to meet these needs can pose a real threat to health and even life. The surveyed students assessed their abilities in this regard on a five-point scale, where 1 meant no ability and 5 meant a very high ability. Analysis of the obtained results indicates that Polish students rate their ability to meet their health care needs significantly higher than students from Ukraine and Belarus. 40.9% of Polish students indicated 'rather large' or 'large' opportunities, while among students from Ukraine and Belarus, these percentages were approximately half as high (20.5% and 23.4%, respectively). At the same time, a significantly higher percentage of students from Eastern Europe (35.7% of Ukrainians and 28.4% of Belarusians) than Polish students (16.3%) rated their ability to meet their health care needs as either non-existent or rather non-existent. These differences were statistically significant ( $\chi^2 = 32.998$ ;  $p < 0.001$ ). It should be emphasised that the assessments of students from Ukraine and Belarus were similar.

Even more pronounced differences between Polish and international students concerned their assessment of treatment options in the event of illness. The majority of Polish students (56.1%) believed their health needs in this area were fully or fairly met. A similar belief is expressed by a much smaller percentage of students from Ukraine (26.5%) and Belarus (23.4%). Students from Eastern Europe were significantly more likely than Polish students to indicate a lack of or limited treatment options (41.1% of Ukrainians, 30.8% of Belarusians, and 15.3% of Polish students, respectively). These differences are statistically significant ( $\chi^2 = 63.470$ ;  $p < 0.001$ ) (Table 3).

## DISCUSSION

Research conducted by Polko [13] showed that over 88% of surveyed students from Ukraine feel safe in Poland; at the same time, the most frequently cited factors contributing to a sense of insecurity included lack of financial resources, problems with visa extensions, and concern for loved ones remaining in their home country. Students from Ukraine who came to Poland to study in 2014, during the ongoing armed conflict in the Luhansk and Donetsk oblasts, also highlighted threats such as fear of illness, traffic accidents, and assaults with a dangerous weapon [13]. Research by Maier and DePrince [19] conducted in the academic community indicated that approximately one-quarter of students reported fear of crime on campus.

The results of the current study conducted at selected universities in Lublin, indicate that a significantly larger

proportion of students from Eastern Europe experience various types of threats. More than half of respondents from Belarus (55.6%) and Ukraine (53%) reported experiencing at least one of five life- or health-threatening situations, such as threats in urban spaces, near their dorms or residences, being a victim of crime, or fearing for their own health. A significantly smaller percentage of Polish students experienced similar experiences. This indicated that students from Belarus and Ukraine experience a higher level of threat compared to Polish students. This relationship was further confirmed by the results of logistic regression analysis, which demonstrated that being a citizen of Ukraine or Belarus more than doubled the likelihood of experiencing the analysed threats.

Previous studies indicate that higher levels of fear of crime are more common among women than among men [20]. The current study partially confirms this observation. For Polish students, gender remained significantly associated with experiencing threats to health and life. Being male significantly reduces the likelihood of reporting such experiences. No analogous relationship was observed among international students. Instead, in this group, the year of study emerged as a significant predictor, with the likelihood of experiencing threats to life and health increasing with each successive year of study.

The observed differences in perceived threat between Eastern European and Polish students may be interpreted in the context of acculturative stress, which constitutes a key element of adaptation to new socio-cultural conditions. This interpretation is further supported by the findings of Gyasi et al. [17], who demonstrated that international students encounter numerous barriers to accessing healthcare, including language, organizational, and financial barriers. These obstacles limit the use of healthcare services and may constitute an additional source of acculturative stress during studies abroad. According to Berry [10], acculturative stress is associated with tensions that may negatively affect psychological well-being and perceived safety. These processes may increase sensitivity to difficult or potentially threatening situations. Differences in threat perception may also be associated with individual acculturation strategies. At the same time, Berry emphasises that most individuals successfully adapt to new cultural environments [10]. Consequently, positive cultural adaptation allows for more effective functioning in a new community, which translates into improved well-being and the development of social competencies. The findings reported by M. Lickiewicz et al. are consistent with Berry's acculturation theory, suggesting that cultural factors may influence both risk perception and coping strategies. The authors demonstrated differences in levels of fear and self-confidence in dangerous situations, with Polish female students reporting higher levels of fear compared to American male students [21].

According to Indrayathi et al. [22], social relationships are a significant factor influencing the well-being of international students. Individuals with broader social networks in the host country tend to report higher levels of life satisfaction and social integration [23]. At the same time, studies indicate that many young Ukrainians experiencing migration encounter adaptation difficulties with Polish society and more frequently seek environments that resemble their familiar cultural background [1]. Furthermore, language barriers and social isolation have been identified as significant sources of anxiety and adaptation difficulties [24].

However, the results of the current study indicate different relationships – a larger number of close friends is significantly associated with a higher level of self-reported threat. This may suggest that broader social networks and more intensive social interactions increase exposure to potentially risky situations or facilitate greater awareness and identification of threats. Nevertheless, this finding is not straightforward and requires further investigation to better explain the observed relationship.

Experiences of discrimination based on nationality or religion appear to play an important role in shaping the sense of security and experiences of threat. The presented study shows that Ukrainian and Belarusian students who experienced mistreatment related to nationality or religion were more likely to report life- and health-threatening situations. The present findings are also consistent with those reported by Liu [25], who demonstrated that perceived discrimination is associated with a lower sense of safety among international students, whereas a stronger sense of belonging serves as a protective factor. These findings are consistent with previous studies showing that discrimination constitutes an important risk factor for poorer mental health and may hinder the adaptation process [26]. Research conducted by Boateng [27] among university students in the United States demonstrated that students belonging to racial minority groups experienced anxiety more frequently than White students. Similar relationships have also been observed among students from African countries, where experiences of racism and social exclusion were associated with increased symptoms of anxiety and feelings of isolation [24]. The presented study additionally confirms significant differences in the perception of threat depending on the country of origin. The highest prevalence of life- and health-related threats was observed among students from Belarus and Ukraine, whereas slightly lower levels were reported among Polish students.

According to a report by Popyk et al. [12], young migrants and refugees from Ukraine may experience multidimensional difficulties related to housing discrimination, educational adaptation, and social integration. At the same time, they strive to preserve their cultural identity and ties to Ukraine. The authors of the report recommend action being taken to combat discrimination and improve access to education and healthcare.

**Limitations of the study.** The findings of this study should be interpreted in the light of several limitations. First, the study was conducted among students from three universities located in Lublin, Poland, which limits the generalizability of the findings to students attending other academic institutions. Second, the survey questionnaire was available only in Polish. Although all students from Ukraine and Belarus were enrolled in degree programmes taught in Polish, the potential influence of language proficiency on the interpretation of some survey questions cannot be entirely excluded. Third, due to the relatively small number of students from Belarus, this group was combined with the Ukrainian student group in the multivariable analyses, which may have reduced the ability to identify differences between these two populations. In addition, the study did not include psychological variables, such as anxiety, psychological resilience, coping strategies, or symptoms of post-traumatic stress, all of which may influence the subjective perception of threats to life and

health. Including these variables in future research would provide a more comprehensive understanding of the observed associations. Finally, the cross-sectional design of the study precluded any conclusions regarding causal relationships.

## CONCLUSIONS

The findings of this study expand current knowledge on the determinants of perceived threats to life and health among students from Ukraine and Belarus studying in Poland. The results indicate that perceived threats to life and health are associated with multiple co-occurring factors, including demographic characteristics, experiences of discrimination, and selected aspects of students' functioning in the host country. The logistic regression models explained between 16.9% – 20.5% of the variance in the dependent variables, suggesting that perceived threats to life and health cannot be explained solely by socio-demographic characteristics. The findings also indicate that efforts to prevent discrimination, promote social integration, and improve information dissemination, may constitute important components of interventions aimed at enhancing the safety and well-being of international students in the host country.

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