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Psychosocial and neurobiological adaptation of youth to conditions of forced migration during the armed conflict in Ukraine

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Abstract. Background. Due to the full-scale Russian invasion of Ukraine, millions of citizens, particularly university students, were forced to leave their homes and adapt to new sociocultural environments abroad. The psychosocial, emotional, and neurobiological consequences of this process remain insufficiently studied, complicating the development of effective support programs for youth in forced migration settings. The purpose of this work was to conduct a comprehensive study of the psychosocial and neurobiological adaptation of Ukrainian youth to new living conditions abroad, identify key integration barriers, assess the respondents' psycho-emotional state, and determine mechanisms that may improve the adaptation process. **Materials and methods.** The study involved 103 respondents aged 18–27 years, temporarily residing in various countries. A mixed-method approach was used, including questionnaires (with closed and open-ended questions), interviews, a validated quality of life assessment scale, and a literature review from databases such as PubMed, Scopus, Google Scholar, and ScienceDirect. **Results.** The duration of stay abroad directly influenced adaptation: from acute stress phases to gradual integration. Only 36.5 % of respondents felt safe after resettlement. Main adaptation barriers included cultural and mental differences (42.6 %), language difficulties (21.3 %), and “fatigue” of host populations regarding the Ukrainian issue (19.1 %). Chronic stress activates the hypothalamic-pituitary-adrenal axis, negatively affecting neuroplasticity, cognitive function, and emotional stability. Despite the difficulties, prolonged stay abroad contributes to the formation of intercultural identity and resilience. **Conclusions.** The psychosocial adaptation of Ukrainian youth is a dynamic, multifactorial process in which neurobiological mechanisms play a key role. The findings highlight the need for interdisciplinary support programs that consider both the psycho-emotional state and neuroplastic potential of young people to ensure successful integration and prevent chronic stress disorders.

Keywords: psychosocial adaptation; neuroplasticity; forced migration; youth; chronic stress; emotional regulation

Introduction

Due to Russia's invasion of Ukraine on February 24, 2022, more than 8 million Ukrainians were displaced from their homes [1]. A significant portion of this cohort consists of young people aged 17–25 who were in the process of obtaining higher education at the time the hostilities began. The forced evacuation of students, as a specific demographic group, occurred under conditions of high psycho-emotional stress caused by the simultaneous loss of basic security, academic stability, social environment, and educational continuity [2, 3]. This process was accompanied by profound transformations in personal, sociocultural, and educational

identity, complicating adaptation to new realities and potentially having long-term consequences for both the individual and the higher education system of Ukraine as a whole.

The psychosocial adaptation of student youth abroad during wartime is not a linear or momentary process — it involves a complex set of biopsychosocial mechanisms formed under the influence of the social context of the host society, the level of interpersonal support, access to resources (educational, medical, cultural), and individual personality traits such as emotional resilience [3, 24], anxiety level and mental state at the time of relocation [2, 3]. Most students found themselves in a situation of social isolation, cultural



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disorientation, disruption of the academic continuum, and legal uncertainty regarding their status in the host country.

The issue of organizational difficulties related to academic mobility is particularly relevant for students temporarily residing abroad as a result of military actions, as these challenges significantly affect their educational continuity and integration into new academic environments [3]. The lack of feedback, communication delays and the ignoring of inquiries contribute to the formation of a sense of uncertainty, which may lower the level of subjective control over their own educational trajectory [1–6]. As a result, this creates additional psycho-emotional pressure, which, combined with the factors of forced migration, complicates the psychosocial adaptation of student youth abroad.

Existing research shows that such factors provoke the development of post-traumatic stress disorders, affective disorders, sleep disturbances, cognitive disorganization, and decreased academic motivation, especially in the absence of adequate institutional and psychosocial support [7].

The intensification of academic mobility caused by forced relocation renders the traditional format of the educational process impossible [8]. Students are forced to adapt to new language standards, different teaching approaches, unfamiliar academic norms, and mental models of communication [9]. At the same time, social contacts are often limited to formal interactions, and the sense of social belonging remains low [8]. This combination of factors forms a feeling of “fragmented identity” [10] — a conflict between Ukrainian educational and cultural affiliation and the need to integrate into a new environment. As a result, academic performance declines, emotional well-being deteriorates, chronic fatigue sets in, and the risk of dropping out of education increases, which is a troubling signal for Ukraine’s national education and mental health policy [1–10].

Given the above, the study of the psychosocial aspects of adaptation of students abroad as a result of the war in Ukraine is extremely relevant. Firstly, it allows for the identification of key barriers to integration into a new academic, social, and cultural environment, especially among youth without previous long-term migration experience [8, 11–13]. Secondly, the analysis of educational engagement, psychological condition, and social support levels makes it possible to assess the effectiveness of existing support mechanisms and to formulate proposals for their improvement [8]. Thirdly, the empirical data can serve as a basis for the development of interdisciplinary interventions aimed at reducing adaptation stress, maintaining educational trajectories, and improving the quality of life of student youth [7].

The study holds strategic importance for post-war recovery: the successful adaptation of students abroad is a factor that influences their readiness for future reintegration into Ukrainian society [8]. Thus, the study of psychosocial mechanisms of adaptation of student migrants is not only scientifically sound, but also a practically significant task within the framework of Ukraine’s policy to support youth.

Purpose. To conduct a comprehensive analysis of the psychosocial aspects of adaptation among Ukrainian youth abroad as a result of the armed conflict in order to identify the main factors affecting quality of life, emotional state,

level of social support, and educational integration, as well as to determine the need for interdisciplinary interventions to improve adaptation processes under forced migration conditions.

Materials and methods

The study employed a mixed methodology that combines quantitative analysis of empirical data and a qualitative theoretical review of relevant scientific literature. The main data collection tools were two online surveys conducted via Google Forms, specifically designed for Ukrainian student youth who moved abroad due to the armed conflict. The questionnaires included both closed and open-ended questions aimed at assessing psycho-emotional state, subjective perception of quality of life, access to social support, challenges of educational adaptation, and experience of interaction with Ukrainian and foreign educational institutions. In addition, we conducted a selective interview with the study participants. Also, the study utilized the standardized “Quality of Life Assessment Scale” validated by Chaban O.S., Khaustova O.O., Bezsheiko V.H., and Moskalenko O.V., which enabled the collection of more objective quantitative indicators of the respondents’ overall life satisfaction [31]. The survey was conducted anonymously, adhering to the principles of voluntariness and ethical standards in working with a target youth group.

To ensure contextual analysis of the obtained results, a systematic search for scientific articles was conducted in the international electronic databases PubMed, Scopus, Google Scholar, and ScienceDirect using relevant English-language search queries such as “psychosocial adaptation of students”, “forced migration and mental health”, “Ukrainian students abroad war”, “emotional well-being of migrant youth”, “support systems for displaced students”, and “higher education during armed conflict”. The selected sources cover interdisciplinary approaches, particularly in the fields of medicine, psychology, sociology, and pedagogy, with special attention to articles concerning the experiences of youth under forced migration conditions. The quantitative data obtained were processed using descriptive statistical methods, followed by qualitative analysis in the context of modern scientific concepts regarding the influence of external stressors on the psychosocial adaptation of student youth.

Results and discussion

Sample representativeness is a key factor influencing the reliability and validity of the results of any sociological or psychological research. In the presented study, 103 respondents participated, which allows for a comprehensive analysis of the phenomena under investigation, taking into account the socio-demographic characteristics of the participants. A distinctive feature of this sample is a predominantly young age (18–27 years) and wide geographical representation, covering various countries of the European continent and other regions of the world. Such a composition of respondents makes it possible to explore the features of the studied phenomenon in the context of globalization processes and intercultural interaction.

Table 1. Age and gender distribution of respondents

Age group, years	Female	Male	Other	Not stated	Total	Percentage
Under 18	3	2	1	–	6	5.83
18–20	18	7	0	4	29	28.16
21–23	14	6	0	16	36	34.95
24–26	6	7	0	8	21	20.39
27+	2	9	0	–	11	10.68
Total	43	31	1	28	103	100.0
Percentage	41.75	30.10	0.97	27.18	100.0	

The formation of the sample population was carried out using targeted sampling. The criteria for involving respondents were developed with consideration of the need to cover different age categories and ensure the geographical diversity of participants. The data collection procedure included both online surveys and direct questioning of respondents, which made it possible to achieve broader coverage of the target audience, with results presented in Table 1.

The largest age group turned out to be the 21–23 category, which accounts for more than a third (34.95 %) of all respondents. This age represents a period of active professional development and the formation of stable social connections, making it particularly valuable for research.

The second largest group is the 18–20 category (28.16 %), which reflects the period of completing secondary education and beginning university studies or entering the workforce. A significant portion of the sample consists of respondents aged 24–26 (20.39 %) who are predominantly characterized by the completion of formal education and the start of their professional careers. The category of participants aged 27 and older (10.68 %) represents a group with more established life trajectories and experience. The least represented is the under-18 age group, which makes up only 5.83 % of the total number of study participants, but provides important insights into the attitudes and behavior of the adolescent audience.

This age structure of the sample allows for a detailed analysis of age-related characteristics of the studied phenomenon with a focus on the youth segment and provides the opportunity to identify age-related trends in the manifestations of the investigated phenomena.

The gender structure reflects a certain asymmetry with a predominance of the female audience. Almost half of the respondents are women (41.75 %), while the share of men is 30.10 %. One participant (0.97 %) identified as a representative of another gender identity, which, although constituting a small percentage, reflects the inclusive nature of the study and attention to gender diversity in modern society.

It should be noted that 28 individuals (approximately 27.18 % of the sample) did not provide information regarding their gender, which may indicate various factors: conscious unwillingness to disclose personal data or a manifestation of an unformed/unstable gender identity. This aspect requires additional analysis and consideration when interpreting the research results, especially in identifying gender-specific patterns.

The presented study is of particular value due to the wide geographical representation of respondents, which makes it possible to trace culturally specific aspects of the studied phenomenon and identify cross-cultural trends. The analysis of the geographical distribution of participants indicates a significant representation of European countries with a noticeable concentration in the German-speaking region.

The largest number of respondents resides in Germany — 17 individuals, which constitutes 16.5 % of the total sample. This may be related to both the socio-economic attractiveness of this country for migration and the specifics of the participant recruitment procedure. The next most represented countries are Poland (4 individuals, 3.9 %) and the USA (3 individuals, 2.9 %), which ensures the presence in the sample of both Eastern European and North American regions.

The countries of Western and Central Europe are represented by such states as Austria, the Netherlands, and the United Kingdom (2 individuals from each). Individual participants reside in the countries of Southern and Eastern Europe: Spain, Ireland, Lithuania, and Croatia, which adds to the geographical diversity of the sample. In a certain number of cases, information about the country of residence was not provided at all, which should be taken into account when geographically stratifying the data. The results are presented in Table 2.

Table 2. Geographical distribution of respondents

Country	Number of respondents	%
Germany	17	16.5
Poland	4	3.9
USA	3	2.9
Austria	2	1.9
Netherlands	2	1.9
United Kingdom	2	1.9
Spain	1	1.0
Ireland	1	1.0
Lithuania	1	1.0
Croatia	1	1.0
Other	69	67.0
Total	103	100.0

Such geographical heterogeneity of the sample creates favorable conditions for conducting intercultural analysis and identifying both universal and culture-specific aspects of the studied phenomenon in the context of different socio-cultural environments.

In the sample of respondents, the duration of stay abroad varied: a few months — 6.5 %, 1 year — 6.5 %, 2 years — 32.3 %, 3 years — 43.5 %, more than 3 years — 11.3 %. This distribution reflects different stages of psychosocial adaptation of youth under conditions of forced migration due to the military conflict in Ukraine. The results are presented in Fig. 1, 2.

Respondents who have been abroad for several months (6.5 %) are at the initial stage of adaptation, which is characterized by acute adaptation stress, including both psychological and social components [14]. At this stage, symptoms of anxiety, discomfort, a sense of uncertainty, and loss of control over one’s life dominate. The psychological state is often accompanied by sleep disturbances and increased vulnerability to negative emotions, which is explained by the active functioning of the body’s stress response system [15]. Social disintegration and limited access to social networks and support resources lead to isolation, which intensifies emotional imbalance [16, 20]. Establishing a sense of safety in the new environment is a critical factor; however, the lack

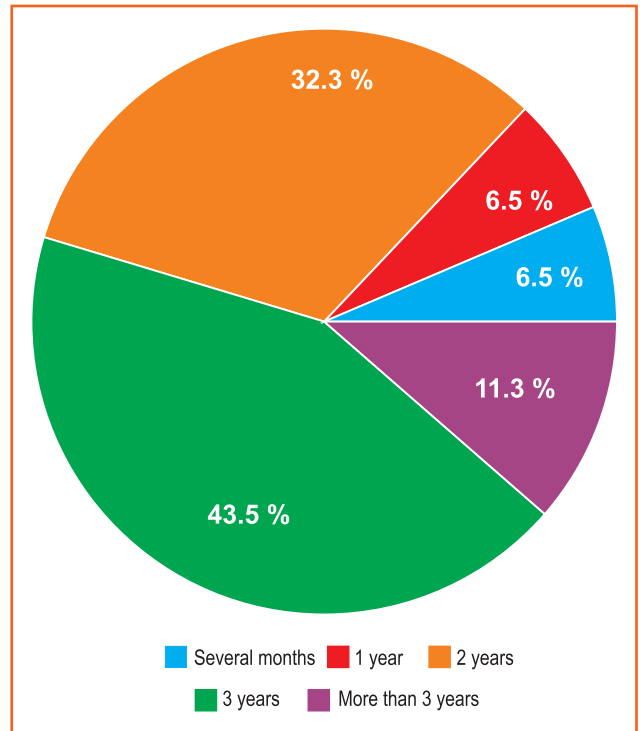


Figure 1. Time period distribution

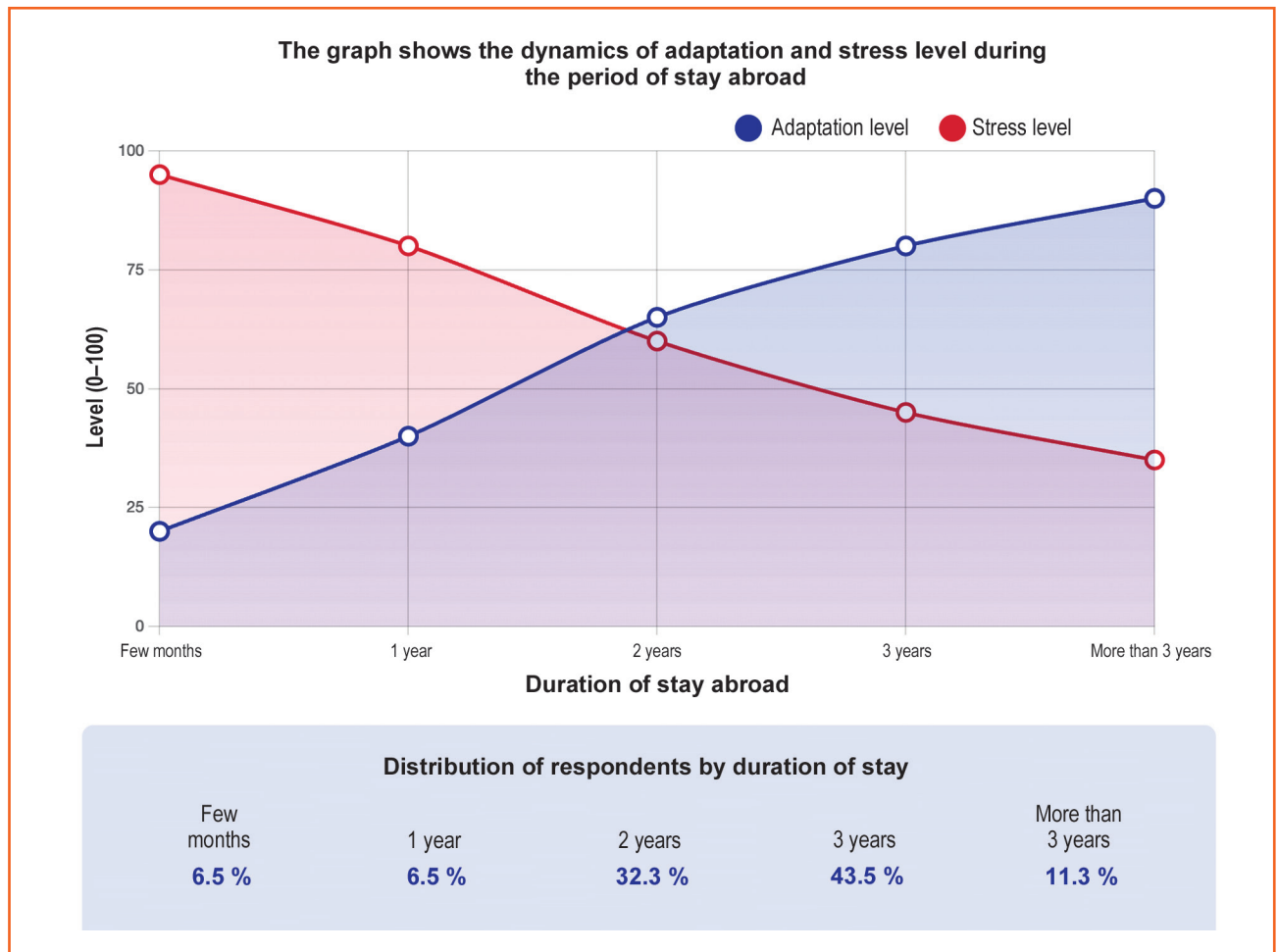


Figure 2. Resilience trajectory: psychosocial adaptation curve of Ukrainian youth abroad

of stability causes constant emotional tension. An important factor that emerges at the end of this phase, according to our research, is the issue of identity, existential crisis, and uncertainty about the future. Respondents during interviews mentioned feeling as if they were on the edge or “a precipice pulling them in”. They have nowhere to return to in Ukraine, as their homes were destroyed as a result of Russian aggression. Employment opportunities in many sectors across various regions of Ukraine are no longer the same as they were before the war began. Building social connections does not meet their social needs. There is no opportunity for quick integration, to make acquaintances, find a job, or build a social bubble in which one can live and create a new life. There is a sense of “falling” and “mental backwardness” in an environment where one cannot freely express thoughts, desires, or build romantic relationships.

In the group living abroad for one year (6.5 %), the psycho-emotional state is characterized by partial stabilization, but with a continued significant level of stress and emotional uncertainty [13–17]. At this stage, basic adaptive strategies begin to form, communication skills in an intercultural environment improve, but there remains a risk of depressive symptoms due to the conflict between the desire to integrate and nostalgia for one’s native culture [13–17]. Increased vulnerability to anxiety is often accompanied by impaired concentration and decreased motivation, limiting full social integration [13–17]. During the interviews, it was found that 20.4 % of those surveyed had experienced a series of failed romantic relationships. Respondents in this group noted that during the adaptation crisis, the attempt to find what was “lacking” led to a series of hasty, ill-considered relationships that ended quickly, as the mental level of interaction differed in emotional maturity. After several failed attempts, respondents reported losing the desire to build relationships, withdrawing into themselves, and looking for internal problems [18]. 14.6 % of respondents reported developing a habit of consuming large amounts of sweets.

Respondents who have been abroad for about two years (32.3 %) are in an intermediate adaptation phase, characterized by increased psychological resilience alongside persistent internal conflicts related to bicultural identity [21, 23]. The refugee experience significantly challenges personal identity, especially for young people navigating new cultural contexts [21, 23]. During this period, a so-called dual cultural identity forms — a phenomenon with a dual effect: on one hand, it serves as an important resource for social integration and flexibility; on the other hand, it may cause cognitive-emotional dissonance, leading to psychological tension [21, 23].

Psychosocial integration during this period gradually strengthens, accompanied by the active expansion of social networks and the formation of new social ties [22]. This process reduces the level of social isolation, contributes to increased subjective well-being, and improves overall emotional state. At the same time, overcoming intercultural barriers and adapting to new social norms require significant psychological resources, which may lead to occasional episodes of psychological fatigue and adaptation stress [11].

From a neurobiological perspective, adaptation at this stage is associated with the activation of the prefrontal cortex (PFC), responsible for emotional regulation and conflict resolution, as well as the hippocampus, which supports memory and learning processes [24]. Chronic exposure to uncontrolled stress leads to the loss of spines and dendrites in the PFC, a recently evolved brain region that provides top-down regulation of thought, action, and emotion. PFC neurons generate top-down goals via recurrent excitatory connections on spines. This sustained activation underlies higher cognitive functions, including working memory and abstract reasoning. However, exposure to acute uncontrolled stress causes high levels of catecholamine release in the PFC, activating calcium-cAMP signaling pathways that open adjacent potassium channels, quickly weakening synaptic connections and reducing sustained activation. Chronic stress exposure can further enhance these signaling events, leading to spine loss and marked cognitive deficits [24].

Survey participants emphasize the importance of social and psychological support from the host country during their temporary stay abroad. According to them, access to such services is sometimes limited, which creates certain difficulties during the adaptation period.

Respondents also note that returning to Ukraine may be accompanied by emotional and administrative challenges. In the public space, particularly in the statements of certain individuals, some evaluations can be perceived by part of the population as ambiguous. This can affect the emotional state of those living abroad and create a sense of distance.

Additionally, citizens report certain difficulties in accessing administrative services outside the country, particularly in issues related to obtaining or renewing documents. This is especially relevant for certain categories for whom specific legal conditions apply. Survey participants express hope for further improvement of procedures, which would strengthen the connection with the homeland and support citizens regardless of their place of residence.

Individuals who have been abroad for three years (43.5 %) demonstrate a high level of adaptation and integration into the new sociocultural environment, indicating the formation of a stable intercultural identity, the development of social competence, and psychological flexibility. From a psychological perspective, this process is associated with the activation of cognitive and emotional regulation mechanisms that enable individuals to effectively balance between preserving cultural roots and integrating into a new environment [1–13, 24, 25].

However, chronic adaptation stress arising from the need for constant sociocultural compromises may lead to the development of subclinical anxiety-depressive states and emotional burnout syndrome [24]. From a neurological perspective, prolonged stress causes dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis [26]. Cytokines function as part of an integrated network, each inducing its own synthesis, as well as the synthesis of other proinflammatory cytokines, including TNF-alpha, IL-1, and IL-6, in a “cascade” manner. In the brain, there is a cytokine network composed of cells such as neurons, microglia, and astrocytes, which can produce cytokines, express cytokine

receptors, and amplify cytokine signals. This neural substrate of immune signaling underlies the profound influence of peripheral proinflammatory cytokines on pathways involved in the pathophysiology of neuropsychiatric disorders, including activation of the HPA axis and corticotropin-releasing hormone, as well as changes in the metabolism of key monoamines (e.g., serotonin, dopamine, norepinephrine) [26]. Chronic stress is associated with a decrease in hippocampal volume, and may modulate the volume of both the amygdala and the frontal cortex, indicating the neurotoxic effects of stress hormones on the brain [13, 26, 27].

At the same time, the constant need to make cultural compromises and adaptations causes cognitive dissonance, which may manifest psychologically as a feeling of personal duality or identity conflicts. This phenomenon is associated with a dual load on the executive functions of the prefrontal cortex, which provides cognitive flexibility, self-regulation, and decision-making. The cognitive strain caused by the need to balance between two cultural norms requires significant psychological resources, increasing the risk of emotional burnout.

Respondents with a stay of more than 3 years (11.3 %) show the deepest integration, characterized by a high level of psychological adaptation and social inclusion. However, at this stage, phenomena of cultural disorientation are possible, associated with the feeling of prolonged “transitional” status, which complicates the formation of a stable sense of belonging [28]. Nevertheless, this group possesses well-developed skills of stress resilience, self-regulation, and a high level of interpersonal competence [3, 29]. By fostering resilience, policies and practices can support the well-being and adaptive capacities of forcibly displaced Ukrainians, contributing to psychological recovery, social integration, and positive long-term outcomes for affected individuals and communities [3, 29]. Psychosocial support in this category should be aimed at preventing chronic emotional fatigue and maintaining balance between two cultures.

Neuroplasticity, or brain plasticity, is a fundamental biological process underlying the organism’s adaptation to changes in the environment [11]. It is manifested in the ability of neural networks to reorganize through synaptic remodeling, the formation of new synapses (synaptogenesis), as well as neurogenesis in certain areas of the brain, particularly in the hippocampus [11].

In the context of student adaptation abroad, neuroplasticity provides the necessary cognitive and emotional flexibility that allows the brain to effectively integrate new information, form new behavioral and emotional regulation strategies. Particularly important are the processes of long-term potentiation in the cerebral cortex and hippocampus, which support learning, memory, and the formation of new behavioral patterns [11].

The activation of neuroplastic mechanisms is mediated by several neurotransmitters, among which glutamate, dopamine, and serotonin are crucial. These neurotransmitters regulate synaptic transmission and modulate the response to stress, supporting cognitive resilience and adaptation. In particular, the dopamine system of the mesolimbic pathway plays a role in motivation and reward, which is critically

important for successful social integration and learning in a new cultural environment [11].

However, chronic stress caused by complex social, academic, and administrative challenges leads to an imbalance of the HPA axis and increased levels of glucocorticoids, which negatively affect neuroplasticity [26]. Elevated cortisol levels cause dendritic atrophy in the hippocampus, reducing the capacity for neurogenesis and impairing mechanisms of synaptic plastic remodeling [11, 26]. As a result, cognitive flexibility decreases, memory weakens, and emotional regulation is disrupted, contributing to the development of anxiety and depressive states [11, 26].

In order to support adaptation and optimize neuroplastic processes, the application of psychosocial and cognitive interventions that activate synaptic plasticity and contribute to the restoration of neural networks is particularly important. Such interventions include cognitive-behavioral therapy, physical activity that stimulates the production of brain-derived neurotrophic factor, a key protein that supports neuron survival and synaptic plasticity, as well as social support, which reduces stress levels.

Criteria for choosing a country of residence

Among young people who experienced forced migration, the most common criterion for choosing a host country was the response “other reasons” — 30.4 %, indicating the individual nature of circumstances and the significant influence of personal or family factors that do not fall under standard classifications. The presence of friends in the destination country played a valuable role — 21.4 %, highlighting the importance of social support in the process of initial adaptation. Previous experience in the country, familiarity with its mentality, culture, and way of life were decisive for 14.3 % of respondents, indicating a desire to avoid culture shock and reduce the stress associated with a new environment. For 12.5 % of respondents, the priorities were social protection in the country and geographic proximity to Ukraine, which may indicate both practical considerations of safety and accessibility, as well as maintaining a connection with their homeland. The smallest share — 8.9 % — based their choice on the presence of close relatives in the country of future migration, which demonstrates that even family ties were not always decisive under the difficult conditions of choosing a migration destination.

An analysis of empirical data obtained from the conducted sociological survey showed that only 36.5 % of respondents were able to feel safe after settling abroad, while the overwhelming majority (57.7 %) did not share this feeling. This distribution of responses indicates a high level of emotional tension among youth in the post-migration period, which in turn points to significant difficulties in psychosocial adaptation. Moreover, 5.8 % of respondents chose the open response option, emphasizing a partial feeling of safety combined with experiences of racism, biased attitudes from the local population, and problems in intercultural communication. Such testimonies confirm the existence of barriers to social acceptance and hidden forms of discrimination that complicate integration processes.

An analysis of the reasons why young people did not feel safe demonstrated the predominance of socio-emotional factors. The most frequently cited were homesickness and longing for loved ones (34.4 %), uncertainty about future prospects (28.1 %), stress reactions (12.5 %), loneliness (9.4 %), and anxiety (9.4 %). Additionally, 6.2 % of respondents noted a combination of several of the aforementioned factors. This distribution indicates that the main threat to the sense of safety is not always the physical or legal conditions of residence but rather the internal psychological state caused by the loss of stability, social ties, and confidence in the future.

At the initial stage of adaptation to a new environment, young people encountered a spectrum of challenges that significantly affected their integration process. The most frequently reported difficulties were related to securing stable housing (33.3 %) and insufficient financial resources (31.2 %), both of which created a foundation of instability that hindered full participation in new social and economic conditions. Gender inequality, while reported by a smaller proportion (10.4 %), nevertheless emerged as a relevant structural barrier, indicating that certain forms of discrimination persisted even in early resettlement contexts. Language barriers and procedural delays in obtaining necessary registration documents were each noted by 8.3 % of respondents, underscoring how administrative and communicative hurdles could prolong uncertainty and limit access to essential services. In the open-response category, 8.3 % of participants also identified additional challenges, including negative interactions with translators, most frequently Russian-speaking volunteers, which, in some cases, complicated communication and triggered feelings of distrust or insecurity. Notably, several respondents indicated that these obstacles did not occur in isolation but rather in combination, with overlapping barriers amplifying the psychological, emotional, and social strain of the adaptation process. This cumulative effect highlights the importance of addressing multiple dimensions of resettlement challenges simultaneously, rather than treating them as discrete and unrelated issues.

An analysis of the survey data indicates that the adaptation of youth to a new socio-cultural environment is a multifaceted and complex process, largely dependent on the interaction of economic, social, and psychological factors. Among the adaptation obstacles, cultural and mental differences were the most significant, noted by 42.6 % of respondents. This factor is especially important in the context of migration, as a change in cultural environment is often accompanied by the need to adapt to new norms, values, behavior styles, and social expectations. This cultural difference can lead to a sense of culture shock, loss of identity, and hinder effective social integration due to misunderstandings or conflicts with the local population.

Lack of language skills, noted by 21.3 % of respondents, is one of the key barriers to adaptation. Language competence determines the ability for effective communication, which in turn affects access to information, educational and professional opportunities, as well as the formation of social connections. The absence of an adequate level of proficiency

in the host country language limits migrants' social activity, provokes feelings of isolation and psychological discomfort, and worsens their emotional state.

Another important factor is the "fatigue" from the Ukrainian topic among the local population, indicated by 19.1 % of survey participants. This phenomenon is characterized by a decline in interest or emotional support from the community, which may manifest as indifference, avoidance, or even informal discrimination. The lack of social support from the host society leads to a deterioration in the psychological climate for migrants, increases their social isolation, and may cause a decline in motivation to adapt.

Regarding the attitudes of local residents toward migrants, 10.6 % of respondents reported instances of unfriendly or biased behavior, which creates additional psychological barriers and hinders the development of trusting relationships. In the workplace, such manifestations can be especially pronounced, causing stress, decreased productivity, and motivation. Social tension arising from prejudice contributes to a sense of anxiety, insecurity, and threats to psycho-emotional well-being.

Additionally, in open responses, participants noted that weather conditions also play a role in the adaptation process, affecting overall physical comfort and well-being. This may be especially important in cases of significant climatic differences between the country of origin and the host country, causing additional stress and fatigue.

The adaptation of individuals who have been forced to move to a new country is a complex, multifactorial process that depends on a number of social, psychological, and material factors. During the conducted survey, it was found that the most significant factor contributing to better adaptation is knowledge of the language of the host country, cited by 31.1 % of respondents. At the same time, 35.6 % of participants noted that moving with the entire family creates favorable conditions for integration. Social support in the form of useful connections and friends, highlighted by 26.7 % of respondents, is also important. Meanwhile, 6.7 % of respondents stated that none of the mentioned factors helped them in the adaptation process.

Regarding housing conditions, the largest number of respondents (39.5 %) live in refugee camps, indicating significant housing instability among forced migrants. At the same time, 32.6 % live in shared rooms, and only 7 % have a private apartment, which points to limited access to private housing. These circumstances may complicate the development of a sense of safety and personal space, which is important for psycho-emotional comfort.

Financial support from the state, received by 46.5 % of respondents, is a substantial resource for meeting basic needs. However, among the recipients of assistance, only 40 % consider it sufficient for an adequate standard of living, while 60 % feel it is insufficient. The need to work to cover basic needs is present in 22.5 % of cases, which leads to certain negative consequences. In particular, almost half of the participants (47.2 %) reported a decline in the quality of education due to the need to combine studies and work, with 13.9 % having to miss classes. Combining work and studies causes significant psychophysiological discomfort: 39 % of

respondents experience a lack of time for rest, 30.4 % report deteriorating sleep quality, which may contribute to the development of chronic fatigue and reduced cognitive functions.

Personal space is a key resource for maintaining psychological well-being, but only 48.7 % of respondents have it in full. Most of those who do not (79.2 %) report feelings of discomfort and anxiety, indicating the importance of ensuring privacy and autonomy during adaptation. A similar situation is observed in the area of self-development: only 44.7 % could devote time to self-realization, while 83.3 % of those who do not experience negative emotions, indicating a lack of resources for personal growth among forced migrants.

Medical care is a critically important component of adaptation, yet only 30.8 % have sought it, of whom 13.2 % received full satisfaction of their medical needs, 55.3 % — partial assistance, and 31.6 % were left without proper treatment. This data indicates the existence of barriers to accessing healthcare resources, which negatively affects overall health and adaptation.

Nutrition regime is also an important factor influencing physical and mental health. Only 23.1 % can follow a regular eating schedule, while 33.3 % cannot, and 43.6 % do so irregularly. This indicates that the majority lack a consistent eating pattern, which may have adverse effects on both physical and mental well-being.

The conducted study identified a number of important psychological and social barriers that influence the adaptation of individuals living in a new sociocultural environment. Among the reasons for difficulties in establishing social connections, respondents most often cited the language barrier — 50 %, which indicates the critical role of language proficiency in the integration process. The second most common reason is the absence of close ones and friends nearby (10.7 %), as well as a lack of free time for communication (35.7 %). Less common was the difficulty in making new acquaintances (3.6 %). The data show that communicative and social factors are key obstacles to forming supportive social networks.

Regarding intergroup interaction, 53.8 % of respondents reported negative or biased attitudes from the local population or authorities, while 23.1 % faced insults, and 12.8 % did not experience any discrimination. 10.3 % noted that the attitude was always friendly. These data point to significant difficulties in intercultural interaction, which may cause psychological discomfort and affect migrants' sense of safety.

The consequences of discriminatory experiences for the psychological state of study participants proved significant: 46.9 % of respondents described their feelings as deeply offensive and humiliating, while 12.5 % were indifferent. 40.6 % could not clearly define their emotional state. Such differentiation in reactions highlights individual characteristics of emotional adaptation and psychological resilience.

To improve mood and overcome stress, most respondents use active or passive self-regulation methods. In particular, 30.8 % listen to favorite music, 17.9 % maintain contact with relatives and friends via messengers or phone, 15.4 % engage in sports, 12.8 % prefer shopping, and 7.7 % — communication with compatriots. A smaller number of respondents at-

tend cultural events or read books, which may reflect limited access to these resources or personal preferences.

The impact of life in another country on respondents' worldview and value system proved ambiguous: 28.9 % believe changes have occurred, 63.2 % noticed no significant changes, and 7.9 % could not answer. The question of returning to Ukraine was also unevenly distributed: 23.3 % plan to return, 16.3 % — do not, and the remaining 60.4 % are undecided or unable to give a clear answer. Participants who plan to return noted that the conditions for such a return are linked to the cessation of hostilities, security guarantees, economic stability, and the possibility of resuming normal life, reflecting the close connection between external circumstances and personal decisions.

Organizational difficulties related to academic mobility represent a significant challenge for students temporarily residing abroad due to military actions, with 67 % of surveyed participants reporting such problems. The most critical of these involve access to official educational documentation, which 54 % of respondents described as complicated or delayed. This barrier is largely attributable to the absence of clearly regulated procedures for inter-institutional interaction during wartime and the excessive administrative workload borne by local structural units, including dean's offices and departments of international cooperation. In the absence of standardized mechanisms, processing requests for transcripts, certificates, or other official documents becomes inconsistent and protracted, thereby delaying students' ability to enroll in host institutions or participate in exchange programs.

Furthermore, 38 % of respondents identified communicative barriers, characterized by unclear or contradictory messages from administrative representatives, which undermine students' capacity to obtain accurate and timely information regarding their academic prospects. Such informational uncertainty can lead to missed application deadlines, reduced participation in academic mobility programs, and increased feelings of instability. In many cases, these organizational and communicative challenges occur simultaneously, amplifying their negative impact. The cumulative effect not only delays academic integration but also exacerbates psychological stress during an already vulnerable stage of adaptation to a new sociocultural and educational environment. This underscores the necessity for developing wartime-specific academic mobility protocols and streamlining administrative communication channels to safeguard educational continuity for displaced students.

From a neuropsychological perspective, such organizational barriers are a significant stress factor that affects the psycho-emotional state of students undergoing adaptation to a new sociocultural environment. These processes require considerable resources of cognitive, emotional, and behavioral self-regulation [1], but the absence of clear and timely informational support, as well as inadequate communication with educational institutions, leads to a sense of uncertainty and reduced subjective control over one's educational trajectory in 72 % of surveyed students.

Psychologically, the lack of feedback and delays in administrative matters trigger chronic stress responses, activa-

ting the HPA axis and increasing cortisol levels [32–35]. This negatively affects the functioning of the prefrontal cortex, which is responsible for executive functions, planning, and emotional regulation [36–40]. As a result, 58 % of students show reduced ability to solve problems adaptively and communicate effectively.

The accumulation of chronic stress is associated with an increased risk of developing anxiety-depressive symptoms and emotional burnout syndrome, recorded in 45 % of respondents, as well as a decline in motivation to study. Under forced migration conditions, when young people simultaneously experience the loss of familiar environments, social isolation, and cultural dissonance, additional administrative barriers significantly exacerbate psycho-emotional instability [30, 41–43].

Conclusions

The conducted study on the psychosocial aspects of the adaptation of Ukrainian youth abroad due to armed conflict revealed a multidimensional set of issues encompassing psychological, social, economic, and cultural aspects of integration into a new environment. The results indicate the presence of a typical adaptation curve depending on the duration of stay abroad. It was found that respondents with the shortest (a few months) and the longest (over 3 years) stays demonstrate specific adaptation difficulties. In the first months, acute adaptation stress prevails, characterized by symptoms of anxiety, discomfort, and a loss of stability. In contrast, after a prolonged stay, phenomena of cultural disorientation and difficulties in developing a stable sense of belonging to a cultural identity begin to emerge.

The study showed that only 36.5 % of respondents felt safe after settling abroad, while 57.7 % reported lacking this feeling. The main reasons for psychological insecurity were emotional and existential factors: homesickness (34.4 %), unclear prospects (28.1 %), stress reactions (12.5 %), loneliness (9.4 %), and anxiety (9.4 %). The key barriers to adaptation were cultural and mental differences (42.6 %), lack of language knowledge (21.3 %), “fatigue” from the Ukrainian topic among locals (19.1 %), and biased attitudes from them (10.6 %). These factors create significant psycho-emotional strain and complicate social integration.

The role of social support proved especially important: moving with the entire family (35.6 %), language knowledge (31.1 %), and having useful connections (26.7 %) were recognized as the most important factors contributing to successful adaptation. At the same time, housing conditions remain problematic — 39.5 % live in refugee camps, and 32.6 % share housing with others.

Significant organizational difficulties were identified in the education sector: 67 % of students faced problems with academic mobility and obtaining documentation from their home educational institution, 54 % reported difficult access to official educational documents, and 38 % noted communication barriers with the administration of educational institutions. It was found that financial instability remains a serious issue: 46.5 % of respondents receive state assistance, but 60 % of them consider it insufficient. The need to combine studies with work leads to decreased quality of

education (47.2 %), lack of time for rest (39 %), and sleep disturbances (30.4 %).

The study also revealed the important role of brain neuroplasticity in the adaptation of youth to new living conditions abroad. A high level of neuroplasticity, inherent to young age, facilitates more flexible adaptation to the language environment (found in 43.2 % of respondents), the ability to form new behavioral patterns (38.7 %), and assimilation of cultural codes of the host community (27.9 %). At the same time, chronic stress and war-related traumatic experiences significantly reduce the natural adaptive capabilities of neuroplasticity — 58.6 % of respondents show signs of cognitive rigidity and fixation on traumatic memories, which hinders the formation of new neural connections necessary for successful adaptation.

The study results indicate the need for a systemic approach to supporting Ukrainian youth abroad, which should encompass psychological, social, educational, and economic aspects of adaptation, taking into account the duration of stay, mechanisms of neuroplasticity, and individual needs.

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Психосоціальна та нейробіологічна адаптація молоді до умов вимушеної міграції під час воєнного конфлікту в Україні

Резюме. Актуальність. Унаслідок повномасштабного російського вторгнення в Україну мільйони громадян, зокрема студенти університетів, були змушені залишити свої домівки та адаптуватися до нових соціокультурних умов за кордоном. Психосоціальні, емоційні та нейробіологічні наслідки цього процесу досі вивчені недостатньо, що ускладнює розробку ефективних програм підтримки молоді в умовах вимушеної міграції. **Мета:** провести комплексне дослідження психосоціальної та нейробіологічної адаптації української молоді до нових умов життя за кордоном, визначити основні бар'єри інтеграції, оцінити психоемоційний стан респондентів та виявити механізми, здатні покращити процес адаптації. **Матеріали та методи.** У дослідженні взяли участь 103 респонденти віком від 18 до 27 років, які тимчасово проживають у різних країнах. Використано змішаний підхід: анкетування (із закритими та відкритими запитаннями), інтерв'ювання, валідовану шкалу оцінки якості життя, а також аналіз наукової літератури з баз даних PubMed, Scopus, Google Scholar і ScienceDirect. **Результати.** Тривалість перебування за кордоном безпосередньо впливала на адаптацію — від фаз

гострого стресу до поступової інтеграції. Лише 36,5 % респондентів відчували себе в безпеці після переселення. Основними бар'єрами адаптації виявилися культурні та ментальні відмінності (42,6 %), мовні труднощі (21,3 %) і «втома» населення країн-приймачів від українського питання (19,1 %). Хронічний стрес активує гіпоталамо-гіпофізарно-наднирникову вісь, що негативно впливає на нейропластичність, когнітивні функції та емоційну стабільність. Попри труднощі, тривале перебування за кордоном сприяє формуванню міжкультурної ідентичності та резиліентності. **Висновки.** Психосоціальна адаптація української молоді — це динамічний багатофакторний процес, у якому ключову роль відіграють нейробіологічні механізми. Отримані результати підкреслюють необхідність міждисциплінарних програм підтримки, що враховують як психоемоційний стан, так і нейропластичний потенціал молоді з метою забезпечення успішної інтеграції та профілактики хронічних стресових розладів.

Ключові слова: психосоціальна адаптація; нейропластичність; вимушена міграція; молодь; хронічний стрес; емоційна регуляція