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ТА ФАРМАЦІЇ:
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FRONTLINE PROXIMITY AND MENTAL HEALTH: RESEARCH ON THE CORRELATION BETWEEN THE LEVELS OF ANXIETY, DEPRESSION AND RESIDENCE

A. K. Shkvarok

Scientific supervisor: PhD, Associate Professor Y. V. Korost

Department of general practice (family medicine)

Bogomolets National Medical University

Kyiv, Ukraine

Introduction: the hypothesis underlying this study suggests that prolonged proximity to the frontline correlates with higher levels of anxiety and depression. This assumption has been supported by historical observations from previous conflicts, where war-affected populations closer to active combat zones exhibited more severe psychological distress compared to those in safer regions. However, contemporary warfare, characterized by advanced technological and digitalized combat strategies, challenges this traditional perspective. In the case of Ukraine, modern warfare has significantly expanded the reach of destruction far beyond the immediate frontlines. The widespread use of unmanned lethal drones, long-range precision-guided missiles, and hypersonic weaponry has rendered previously secure regions vulnerable to sudden attacks. For instance, air-launched hypersound missiles can reach any point within Europe's largest country in a matter of minutes. Similarly, guided aerial strikes have demonstrated the capacity to target locations far from the eastern front, including as deep into Ukrainian territories as Prykarpattia and Zakarpattia, and since 21.11.2024 intercontinental ballistic missiles «Oreshnik» have also become a danger to the population across the entire territory of the country. These factors suggest that psychological distress may no longer be confined to frontline areas and should be distributed more broadly, necessitating a reassessment of the correlation between geographic proximity to conflict and mental health outcomes. Given these developments, empirical research on anxiety and depression in different regions is essential to either substantiate or refute the original hypothesis. The evolving nature of modern warfare underscores the need for updated psychological assessments to determine whether frontline proximity remains the primary determinant of mental health deterioration or whether the threat of long-range strikes has equalized distress levels across the country.

Aim: to investigate the correlation between frontline proximity and mental health by analyzing levels of anxiety and depression in different regions of Ukraine.

Materials and methods: a total of 1154 respondents participated in the survey, representing all regions of Ukraine except Luhansk Oblast. Participants were between the ages of 15 and 84. Both males (17%) and women (83%) took part in the survey which was conducted anonymously from 10.12.2024 to 26.01.2025 with informed consent obtained from all participants regarding the use of their provided data. The sample included only those respondents who reported continuous residence in Ukraine from 24.02.2022 until the date of completing the online questionnaire. Data collection was carried out through an online questionnaire consisting of two sections. The first section contained general demographic questions, including gender, age, the region where the respondent was located at the time of the survey, and the region where the respondent had spent the longest period in Ukraine since February 24, 2022. The second section included the Hospital Anxiety and Depression Scale (HADS) to assess levels of anxiety and depression. Microsoft Excel and MedStat software were used for data processing. Anamnesis-based, computational and statistical research methods were used in the research.

Results: the percentage of individuals with clinically significant depression within each oblast of Ukraine was calculated separately from the total number of respondents in that oblast. A similar percentage was determined for individuals with clinically significant anxiety within each oblast. These indicators were designated as the Intra-Oblast Depression Rate (IODR) and the Intra-Oblast Anxiety Rate (IOAR) respectively. The highest IODR was observed in Ivano-Frankivsk Oblast (39,36%), followed by Lviv (39,02%), Donetsk (36,36%), Zakarpattia (36,36%) and Khmelnytskyi (36,36%) Oblasts. The lowest IODR were recorded in Dnipropetrovska (26%) and Chernihiv (25,53%)

Oblasts. The highest IOAR is also in Ivano-Frankivsk (48,94%), followed by Kyiv (47,89%), Chernihiv (42,55%), Kharkiv (40%), Odesa (39,62%), Donetsk (39,39%) and Mykolaiv (38,24%) Oblasts. The lowest anxiety levels were observed in Rivne (30,30%), Volyn (27,03%) and Lviv (26,83%) Oblasts. The Shapiro-Wilk W test was applied to assess the normality of the data distribution. The distribution did not significantly differ from normal for IODR ($N = 24$, $W = 0.947$, $p > 0.1$) and IOAR ($N = 24$, $W = 0.951$, $p > 0.1$). In the correlation analysis (linear correlation, Pearson's coefficient) to examine the relationship between IODR and IOAR levels and the distance at which respondents were located from the frontline, the selected variables were: (1) IOAR and IODR values (%) and (2) Distance, where Point A was defined as the administrative center of each oblast and Point B was the closest frontline point relative to that oblast center as of February 2025 (Hlyboke, Hola Prystan, Enerhodar) (km). The determination of Point B was conducted using the DeepStateMap resource. An exception was made for the administrative center of Donetsk, which has been under occupation since 2014; for this oblast center, the distance was recorded as zero. For the administrative centers of border oblasts located directly adjacent to the aggressor country, the direct distance to the nearest border checkpoint was determined (Sumy). The normality test for the calculated distances showed no significant deviation from normal distribution ($N = 24$, $W = 0.926$, $p = 0.08$). By testing the significance of the linear correlation between IOAR and distance, the results indicated that at $N = 24$, $R = -0.106$, with degrees of freedom $k = 22$, there was no significant linear correlation ($R = 0$, $p = 0.622$). Similarly, for the IODR and distance correlation, the results showed that at $N = 24$, $R = 0.107$, with degrees of freedom $k = 22$, no significant linear correlation was found ($R = 0$, $p = 0.615$).

Conclusions: the highest Intra-Oblast Depression Rate (IODR) was recorded in Ivano-Frankivsk Oblast (39.36%), followed by Lviv (39.02%), Donetsk (36.36%), Zakarpattia (36.36%), and Khmelnytskyi (36.36%). The lowest IODR values were observed in Dnipropetrovska (26%) and Chernihiv (25.53%) Oblasts. The highest Intra-Oblast Anxiety Rate (IOAR) was also found in Ivano-Frankivsk (48.94%), followed by Kyiv (47.89%), Chernihiv (42.55%), Kharkiv (40%), Odesa (39.62%), Donetsk (39.39%), and Mykolaiv (38.24%). The lowest anxiety levels were reported in Rivne (30.30%), Volyn (27.03%), and Lviv (26.83%) Oblasts. A linear correlation analysis (Pearson's coefficient) found no significant correlation between IODR and distance ($R = 0.107$, $p = 0.615$) or IOAR and distance ($R = -0.106$, $p = 0.622$), indicating that proximity to the frontline did not have a statistically significant relationship with the levels of depression or anxiety.

Keywords: mental health, HADS, anxiety, depression, frontline proximity.

ВПЛИВ БУЛІНГУ НА ПСИХІЧНЕ ЗДОРОВ'Я ДІТЕЙ ТА ПІДЛІТІВ: МЕХАНІЗМИ ВИНИКНЕННЯ ТА НАСЛІДКИ

Гура А. О.

Науковий керівник: д.мед. н., проф. Абдрахімова Ц. Б.

Кафедра медичної психології, психосоматичної медицини та психотерапії

Завідувач кафедри: д.мед.н., проф. Хаустова О. О.

Національний медичний університет імені О. О. Богомольця

Київ, Україна

На сьогодні стан психічного і фізичного здоров'я дітей і підлітків в Україні та його погіршення безпосередньо пов'язані з повномасштабним військовим вторгненням сусідньої держави-агресора. У таких умовах війни не залишається без уваги таке соціальне явище, як булінг (від англ. To bull – переслідувати) і пов'язані з ним наслідки на підконтрольній Україні території.

Проблема жорстокої та насильницької поведінки дітей та підлітків привертає увагу нинішнього суспільства і знаходить своє відображення в зарубіжних та вітчизняних дослідженнях. Реальністю стало пропагування культу сили та жорстокості в ЗМІ, зниження виховного потенціалу сім'ї, порушення взаємодії між школою та сім'єю, поширення зразків асоціальної поведінки. Значного поширення набуло явище булінгу у загальноосвітніх навчальних закладах.

Булінг не просто викликає короточасний стрес, а має глибокий вплив на психічне здоров'я підлітків. Доведено, що жертви булінгу частіше починають на тривожні розлади, депресію та мають підвищений ризик суїцидної поведінки.