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PSYCHOLOGICAL SELF-REGULATION MECHANISMS AS A KEY FACTOR IN PREVENTING ADOLESCENTS' RISK BEHAVIOR IN WARTIME

У статті досліджуються психологічні механізми саморегуляції як ключового чинник профілактики ризикованої поведінки підлітків в умовах війни. Актуальність дослідження зумовлена критичною потребою у збереженні психічного здоров'я української молоді, яка формується в умовах тривалого воєнного стресу. Підлітковий вік, будучи періодом інтенсивного нейропсихологічного розвитку, є найбільш уразливим до формування дезадаптивних поведінкових паттернів, зокрема ризикованої поведінки, що виступає малофункціональним механізмом подолання психологічної травми.

На основі аналізу сучасних теорій та емпіричних даних (n=70) встановлено, що ризикова поведінка в умовах війни концептуалізується як комплекс дезадаптивних паттернів, що включають імпульсивні дії, пошук екстремальних вражень, деструктивну соціальну інтеракцію та аутоагресивні прояви. Емпіричні результати свідчать про значну поширеність ризикованих тенденцій: 28,57 % підлітків активно шукають екстремальні враження, а 57,14 % демонструють ситуативну ризикову поведінку. Виявлено зв'язок між схильністю до ризику та низьким рівнем самоконтролю, високою імпульсивністю (37,14 %), потребою в негайному задоволенні (22,86 %) та підвищеним нейротизмом (34,28 %).

Ключовим висновком дослідження є те, що ризикова поведінка виступає наслідком порушення механізмів саморегуляції на тлі нейробіологічних змін (дисбаланс між гіперактивною лімбічною системою та незрілою префронтальною корою) та соціально-середовищної дезорганізації. Кореляційний аналіз підтверджує, що з віком зменшуються імпульсивність та потреба в негайному задоволенні, що свідчить про розвиток самоконтролю. Одночасно виявлено життєстійкість більшості підлітків (64,28 %) та цінність підтримки родини (52,86 %), що є ресурсом для формування психологічного імунітету. Емпірично доведено, що психологічні механізми саморегуляції виступають ключовим буферним чинником проти ризикованої поведінки.

Ключові слова: ризикова поведінка, саморегуляція, психологічні механізми, підлітковий вік.

The article investigates psychological self-regulation mechanisms as a key factor in preventing risk behavior among adolescents in wartime conditions. The relevance of the study is driven by the critical need to preserve the mental health of Ukrainian youth developing under prolonged war-related stress. Adolescence, being a period of intensive neuropsychological development, is the most vulnerable to the formation of maladaptive behavioral patterns, particularly risk behavior, which acts as a dysfunctional mechanism for coping with psychological trauma.

Based on the analysis of contemporary theories and empirical data (n=70), it has been established that risk behavior in wartime is conceptualized as a complex of maladaptive patterns including impulsive actions, the search for extreme sensations, destructive social interaction, and self-aggressive manifestations. Empirical results indicate a significant prevalence of risk tendencies: 28,57 % of adolescents actively seek extreme sensations, and 57,14% demonstrate situational risk behavior. A connection was found between risk propensity and low levels of self-control, high impulsivity (37,14 %), the need for immediate gratification (22,86 %), and elevated neuroticism (34,28 %).

A key conclusion of the study is that risk behavior results from impaired self-regulation mechanisms against a background of neurobiological changes (an imbalance between a hyperactive limbic system and an immature prefrontal cortex) and socio-environmental disorganization. Correlation analysis confirms that impulsivity and the need for immediate gratification decrease with age, indicating the development of self-control. Simultaneously, resilience was identified in the majority of adolescents (64,28 %), alongside the value placed on family support (52,86 %), which serves as a resource for building psychological immunity. It has been empirically proven that psychological self-regulation mechanisms act as a key buffering factor against risk behavior.

Keywords: risk behavior, self-regulation, psychological mechanisms, adolescence.

Relevance of the Research. The restoration and strengthening of the mental health of Ukrainians under conditions of prolonged war requires a comprehensive investigation of the psychological mechanisms of risky behavior in adolescence. This specific age group is the most vulnerable to the negative impact of psychotraumatic factors. Systematizing the obtained data will allow for the scientific substantiation of cognitive-behavioral correction strategies, minimize the likelihood of developing maladaptive disorders, and ensure optimal conditions for the socio-psychological reintegration of youth in a post-traumatic society.

In psychology, risky behavior is understood as actions that increase the probability of negative consequences for an individual's physical, mental, or social health. It can be conscious or unconscious and is often associated with the disregard for safety rules (extreme sports, non-compliance with military restrictions, etc.), substance use (alcohol, drugs), aggressive or auto-aggressive actions (self-harm, suicide attempts), involvement in criminal activity, dangerous sexual contacts, and so forth.

Analysis of recent research and publications

War as a traumatic experience triggers a complex of psychophysiological reactions in adolescents that often manifest as risky behavior. The research of O.V. Vdovychenko (2019) systematized the psychological foundations of personal risk in ontogenesis. Prolonged stress activates survival mechanisms, suppressing rational thinking in favor of impulsive actions (Bessel van der Kolk, 1994, 2014 and Laurence Steinberg, 2017).

Neurobiological changes (hyperactivity of the amygdala, reduced activity of the prefrontal cortex) generate a propensity for extreme actions, while dissociation as a defense mechanism contributes to the ignorance of danger. Simultaneously, social disorientation - the loss of familiar environment, authorities, and stability - pushes adolescents toward seeking new identities in destructive groups or quick ways to escape reality (alcohol, drugs, dangerous sexual relationships) (as described by Robert Agnew in the General Strain Theory, 2006 and Mihaly Csikszentmihalyi within the concept of flow, 2003).

This behavior represents an attempt to regain control over the situation and numb psychological pain. According to Strain Theory (Robert Merton, 1968), when socially approved pathways to goal achievement become inaccessible, adolescents resort to alternative, often deviant strategies. The temporary relief provided by risky actions (adrenaline rush, momentary distraction) reinforces them as an «effective» way to cope with trauma, forming a vicious cycle. However, such adaptation leads to further maladaptation, as it doesn't solve root problems but rather deepens psychological trauma and social alienation (Aleksieienko T.F., Bykova S.V., Kushnariov S.V. et al.).

Analysis of existing research indicates that the characteristics of adolescents' risky behavior during the ongoing russian-ukrainian war remain insufficiently studied. Existing works fail to account for the

specifics of prolonged military stress and its impact on the formation of maladaptive behavioral patterns in this age group. This necessitates further research aimed at developing specialized psychocorrectional programs tailored to the particular psychological state of adolescents during wartime.

Research objective: to provide theoretical substantiation and conduct empirical investigation of the psychological self-regulation mechanisms of adolescents' risky behavior in wartime conditions.

Presentation of the main material. As a result of the theoretical analysis, the concept of «risk» has been clarified. We define it as an individual's cognitive representation of a situation that includes probabilistic assessments of the outcomes of performing certain actions and a subjective evaluation of personal competence within the context of a corresponding challenge. Risk is an objective characteristic of a situation – the probability of an unfavorable outcome that can be quantitatively assessed, whereas risky behavior is a subjective behavioral choice where an individual, consciously or unconsciously, disregards the risk in favor of a potential reward (for example, speeding to obtain an adrenaline rush). Risky behavior is conceptualized as a complex of behavioral acts characterized by a conscious or partially conscious decision to undertake actions with a high probability of negative consequences.

Adolescents' risky behavior in wartime constitutes a constellation of maladaptive behavioral patterns formed under the influence of chronic military-related psychotraumatic stress and manifested through: 1) impulsive actions with disregard for real threats, 2) active seeking of extreme sensations as a compensatory mechanism for emotional state regulation, 3) destructive social interaction involving affiliation with marginal groups or reproduction of aggressive behavioral models, and 4) self-aggressive manifestations directed both toward one's own body and social environment. In wartime conditions, adolescents' risky behavior will manifest through: increased frequency of impulsive decisions in situations of uncertainty; altered value hierarchy with emphasis on immediate need gratification; and dysfunctional methods of emotional self-regulation. These characteristics distinguish military-associated risky behavior from general psychological concepts of deviance, highlighting its etiological connection to the specific nature of prolonged traumatic exposure to armed conflict conditions.

Risky behavior is considered a complex result of the interaction of: neurobiological changes (hyperreactivity of the limbic system with simultaneous suppression of cognitive control), socio-environmental factors (disorganization of traditional socialization institutions), and individual psychological characteristics (deficiency in stress-coping strategies).

Further experimental study of adolescents' risky behavior in wartime conditions will allow for a transition from theoretical assumptions to empirically confirmed conclusions, which is critically important for developing effective psychological assistance programs.

Empirical research and results. To identify the characteristics of adolescents' risky behavior in wartime conditions, the following instruments were administered: The «Self-Assessment of Propensity for Extreme-Risk Behavior» questionnaire (M. Zuckerman), the Test Questionnaire of Qualitative Indicators of Risk Propensity, the Barratt Impulsiveness Scale (BIS/BAS-11), the Questionnaire of the Level of Need for Immediate Gratification, the Hedonic Orientation Scale (HOS), the assessment of Neuroticism using H. Eysenck's test, and the «Antivitality and Resilience» questionnaire (Sagalakova O.A., Truevtsev D.V., 2017).

The results of adolescents' self-assessment of risky behavior show that the majority of them (60 %) do not perceive their lives as risky, which may indicate defensive optimism and/or insufficient awareness of potential threats in wartime conditions, while a smaller portion (11,43 %) experiences significant tension, which may be related to high sensitivity to challenges, environmental pressure, or personal anxieties. Youth predominantly use strategies similar to emotion-focused coping, specifically distancing and positive reappraisal, as well as cognitive reinterpretation strategy.

To assess the distribution of individual levels of adolescents' search for new, intense, and risky sensations, we used the «Self-Assessment of Propensity for Extreme-Risk Behavior» methodology (M. Zuckerman).

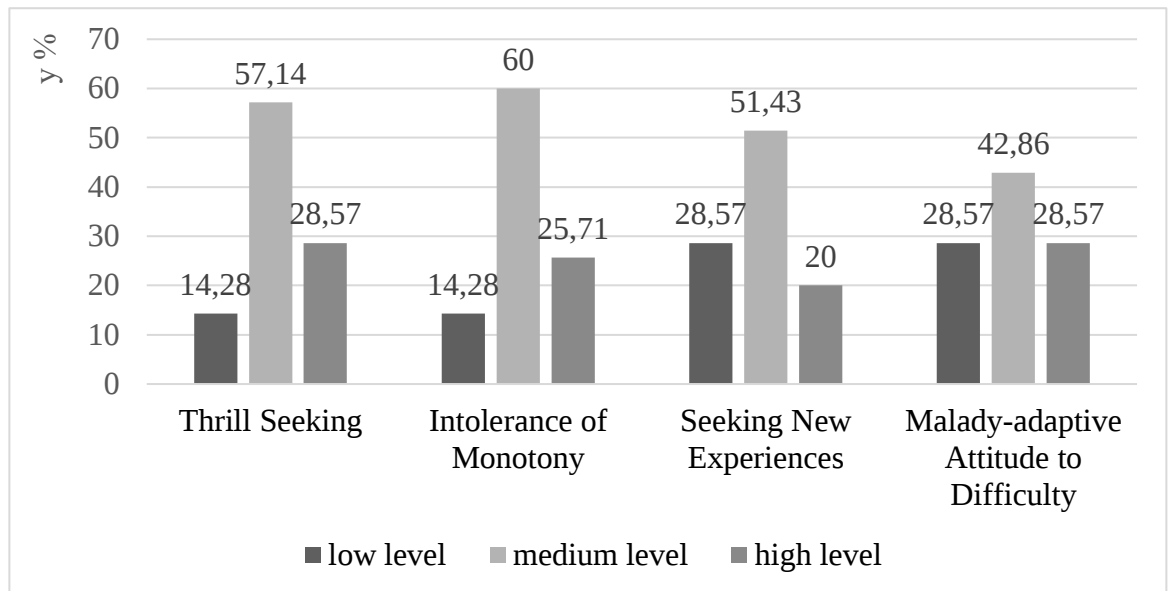


Fig. 1. Distribution of individual levels of adolescents' search for new, intense, and risky sensations (N=70, %)

Thus, our survey results revealed a significant propensity for risky behavior among adolescents: nearly one-third (28,57 %) actively seek extreme sensations (for example, curiosity about weapons, experiments with explosive substances), indicating a need for physical challenges and overcoming fear, while more than half (57,14 %) periodically demonstrate situational risky behavior, which may be related to experimentation or the influence of the social environment.

Particular attention is drawn to the high proportion of adolescents (25,71%) who categorically cannot tolerate routine, and 20 % who feel a constant need for new experiences – this may indicate a search for methods of self-expression or compensation for emotional deficit. In our opinion, this points to mechanisms of dysfunction in the system of impulse control and consequence evaluation in adolescents. Furthermore, nearly 30 % of respondents have a pronounced maladaptive attraction to difficulties, which, combined with the high frequency of accidentally finding themselves in risky situations (51,43 %), indicates this group's potential vulnerability to destructive scenarios (for example, addictions, dangerous forms of leisure). The basis of such behavior lies in compensatory mechanisms of emotional self-regulation, specifically the externalization of stress. These data emphasize the necessity of developing alternative ways to satisfy the need for adrenaline (for instance, through creative or social projects) and fostering skills for evaluating the consequences of one's own actions.

According to the results of the correlation analysis, we have established a negative correlation between the «maladaptive attraction to difficulties» scale and age maturation ($r=-0,38$; $p \leq 0,05$), indicating an increase in meaningfulness and caution regarding one's own life as adolescents grow older.

The obtained data indicate a significant prevalence of risky behavior among adolescents, which corresponds to their age-related development. From a neurobiological perspective, the propensity for extreme activity (28,57 %) and the search for new sensations (20 %) may be related to the activation of the mesolimbic dopamine system, which reaches peak sensitivity precisely during adolescence, promoting increased pursuit of reward and novelty. These results are consistent with the dual systems model (Casey et al., 2008), which explains the imbalance between the maturation of the limbic system (responsible for emotions) and the prefrontal cortex (behavioral control).

From a psychological perspective, the high level of intolerance for monotony (25,71 %) and maladaptive attraction to difficulties (28,57 %) may reflect the characteristic processes of identity formation and emancipation for this age group, as described in Erik Erikson's theory. Situational manifestations of risky behavior (57,14 %) can be interpreted through the lens of social learning, where adolescents imitate behavioral models of their reference groups.

A sociocultural analysis suggests that the prevalence of risk-taking strategies (51,43 % of adolescents periodically find themselves in risky situations) may be linked to the contemporary environment characterized by high competitiveness and the popularization of extreme activities in media. This is supported by research demonstrating a correlation between social media influence and increased risk behavior (Sherman et al., 2016).

It remains debatable whether the identified risk tendencies are pathological or represent a normative developmental stage. On one hand, they may facilitate social adaptation and the formation of coping strategies; on the other hand, they may increase the likelihood of traumatization and maladaptation.

For the purpose of differentiated assessment of qualitative indicators of risk propensity, the test questionnaire by S.V. Bykova was used.

The survey results indicate that the vast majority of adolescents demonstrate an average level of propensity for risky behavior, which is typical for this age group. However, 17,14 % of respondents were found to have significant difficulties in the control-regulation component, manifested in insufficient self-control and a weak ability to assess the consequences of their actions. This indicator may suggest a delay in the maturation of the prefrontal cortex, which is responsible for making rational decisions. Separately, it is worth noting that 14,28 % of adolescents have a pronounced emotional orientation toward risk, expressed in the search for intense sensations and a tendency toward impulsive actions.

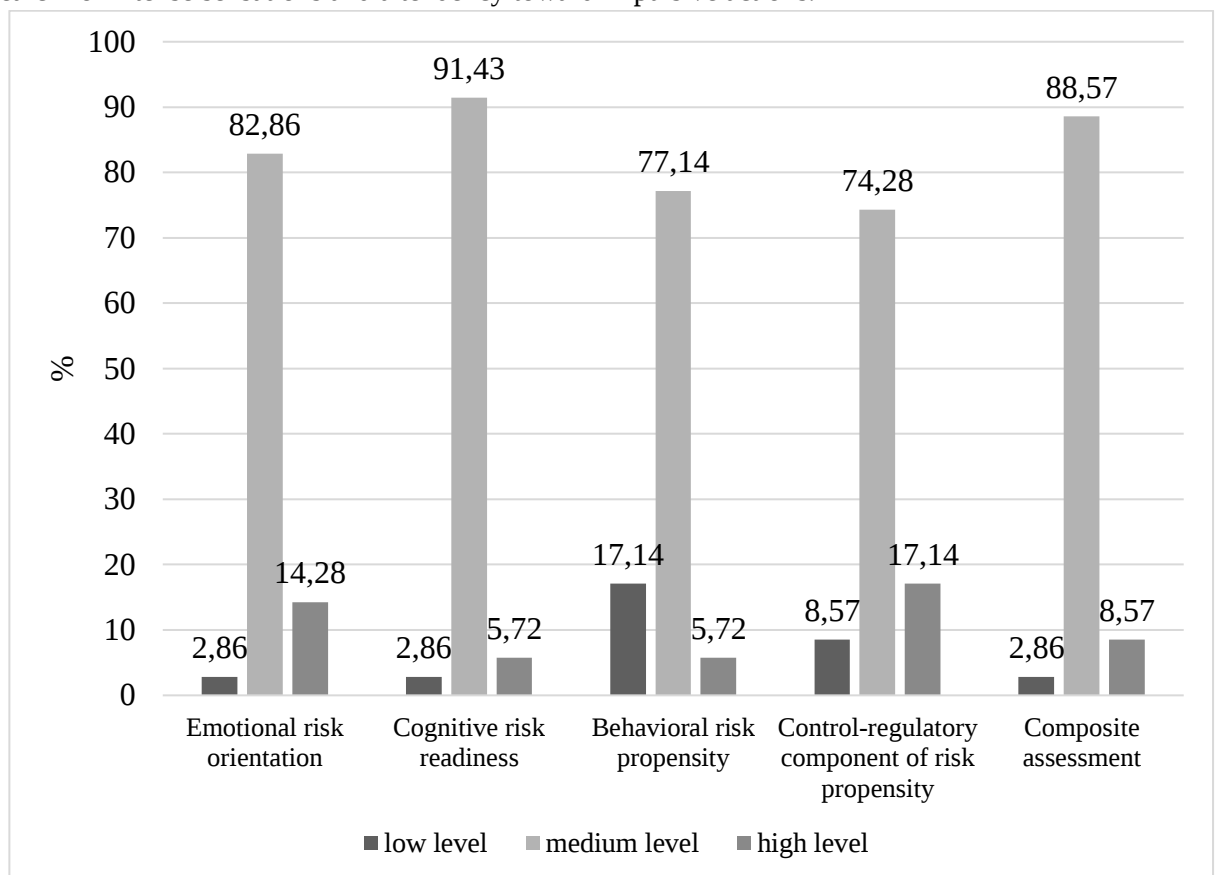


Fig. 2. Distribution of qualitative indicators of adolescents' risk propensity (N=70, %)

According to the results of the correlation analysis, we have established significant relationships between the composite assessment of adolescent risk-taking and the search for intense sensations ($r=0,542$; $p\leq 0,01$). The motive for seeking intense sensations is a driving force for emotional orientation toward risk ($r=0,588$; $p\leq 0,01$), cognitive readiness for risk ($r=0,374$; $p\leq 0,05$), and behavioral readiness ($r=0,394$; $p\leq 0,05$). Furthermore, the maladaptive attraction to difficulties enhances the cognitive component of risk readiness ($r=0,394$; $p\leq 0,05$), which explains the emergence of risky ideas and obsessive thoughts about dangerous experiments.

From a scientific perspective, these data are consistent with contemporary neuropsychological theories of adolescent development. The imbalance between the maturation of the limbic system

(responsible for emotions) and the prefrontal cortex (responsible for control) creates preconditions for risky behavior. This is particularly evident in adolescents with a weak control-regulation component, who cannot effectively manage their impulses. The emotional orientation toward risk, in turn, may be associated with hyperactivity of the dopaminergic reward system, which intensifies the pursuit of new experiences.

According to the results of the correlation analysis, it has been established that with age, there is a decrease in the tendency toward immediate need gratification ($r=-0,385$; $p\leq 0,05$), impulsivity ($r=-0,377$; $p\leq 0,05$), and social influence ($r=-0,382$; $p\leq 0,05$).

It has been established that adolescents' emotional orientation toward risk influences the increase in the need for immediate gratification ($r=0,38$; $p\leq 0,05$), impulsivity ($r=0,349$; $p\leq 0,05$), and stress-induced impatience ($r=0,431$; $p\leq 0,05$). The impact of stress-induced excitability enhances cognitive readiness ($r=0,48$; $p\leq 0,01$) and behavioral readiness for risk response ($r=0,473$; $p\leq 0,01$). Behavioral propensity for risk manifests in the need for immediate desire gratification ($r=0,38$; $p\leq 0,05$) and adolescent impulsivity ($r=0,349$; $p\leq 0,05$).

Conclusions. The majority of adolescents (60%) do not perceive their lives as risky, which may indicate optimism or insufficient awareness of threats. However, 11,43 % experience significant tension associated with personal anxieties or environmental pressure. A high propensity for extreme behavior has been identified: 28,57 % actively seek risky experiences (for example, experimenting with weapons), while 57,14 % periodically demonstrate situational risky behavior. This may be a consequence of age-related characteristics, particularly the activation of the dopamine system, as well as the influence of social media.

Adolescents are characterized by a pursuit of immediate gratification: 37,14 % exhibit high hedonic orientation, 28,57 % are prone to risky hedonism, and 22,86 % report a strong need for immediate satisfaction. Impulsivity is present in 37,14 % of respondents, which may be associated with prefrontal cortex immaturity and heightened limbic system activity. These tendencies weaken with age, indicating the development of self-control. Elevated levels of neuroticism were found in 34,28 % of adolescents, increasing their vulnerability to stress and emotional fluctuations.

Although low levels of anti-vital thoughts predominate (57,14-77,14 %), 7,14 % demonstrate self-destructive behavior, and 11,43 % exhibit pessimistic thinking. Every third adolescent (28,57 %) experiences pronounced anti-vital experiences (loss of life meaning, loneliness), which may result from frustration of social needs or family conflicts (40 %).

Despite the risks, the majority of adolescents demonstrate resilience (64,28%) and optimism about the future (41,43 %). They highly value family support (52,86 %) and strive for self-improvement (40 %). However, 27,14 % suffer from anxious rumination, and 18,57 % are prone to antisocial behavior. This highlights the necessity of developing stress resilience skills, preventing destructive scenarios, and creating alternative methods of self-expression (for example, through social projects).

A promising direction for future research involves further delineating the criteria for fostering psychological immunity to risky behavior in adolescents and developing differentiated psychocorrection programs. These programs must account for the specific nature of traumatic experiences and the characteristics of neurocognitive development in adolescents under conditions of prolonged stress.

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