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### **THE PHENOMENON OF RESILIENCE AS THE ABILITY TO FORM EFFECTIVE METHODS OF OVERCOMING NEGATIVE ECO-IMPACTS**

У статті розкрито психологічний зміст життєстійкості, яка включає сенсожиттєві орієнтації, що формують адаптаційний потенціал особи. Метою статті є вивчення феномену резильєнтності як здатності до формування ефективних способів подолання негативних еко впливів. Серед психодіагностичних методів оцінки оцінки стресостійкості використано Шкалу стресостійкості Коннора-Девідсона-10 (CD-RISC-10). Для оцінки функціонального стану респондентів (травма-свідків) було використано метрологічний індекс Bath Ankylosing Spondylitis Metrology Index (BASMI) та індекс Bath Ankylosing Spondylitis Functional Index (BASFI). Для визначення активності психотравми застосували індекс Bath Ankylosing Spondylitis Disease Activity Index (BASDAI). Для оцінки якості життя було обрано специфічний опитувальник якості життя досліджуваних Ankylosing Spondylitis Quality of Life Questionnaire (ASQoL).

Життєстійкість забезпечується низкою фізіологічних, особистісних та соціальних чинників. Виявлення та конкретизація характерологічних ресурсів людини, сприяють визначенні її резистентності, особистісних потенціалів, які б сприяли збереженню психосоматичного здоров'я людини, її готовності до змін, особистісного становлення та саморозвитку в професійній діяльності, що актуально для побудови корекційної моделі відновлення резильєнтності особистості за умов воєнного часу.

**Conclusions.** Згідно результатів дослідження відмічено категорії низької стресостійкості, що відповідало 50 осіб (з них 24 жінки та 26 чоловіків), помірна стресостійкість була визначена у 12 осіб та категорії високої стресостійкості відповідав 1 респондент чоловічої статі. Нами виявлено певні статеві відмінності щодо стресостійкості потерпілих: вища в чоловіків. Респонденти з високою травмованістю характеризувалися суттєвою втратою психофункціональної здатності за шкалою BASFI. Наявність значних порушень психофункціональної здатності підтверджено за показниками метрологічного індексу BASMI та опитувальником якості життя за шкалою ASQoL.

**Ключові слова:** резильєнтність, життєстійкість, психосоматичне здоров'я, особистісні потенціали, сенсожиттєві орієнтації.

The article discloses the psychological meaning of resilience, which includes meaningful life orientations that shape a person's adaptive potential. The purpose of the article is to study the phenomenon of resilience as the ability to form effective ways to overcome negative environmental impacts. The Connor-Davidson Stress Resistance Scale-10 (CD-RISC-10) was used among the psychodiagnostic methods of assessing stress resistance. The Bath Ankylosing Spondylitis Metrology Index (BASMI) and the Bath Ankylosing Spondylitis Functional Index (BASFI) were used to assess the functional status of respondents (trauma witnesses). The Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) was used to determine the activity of psychotrauma. To assess the quality of life, a specific questionnaire of the quality of life of the studied Ankylosing Spondylitis Quality of Life Questionnaire (ASQoL) was used.

Vitality is ensured by a number of physiological, personal and social factors. The identification and specification of a person's characterological resources contribute to the determination of his resistance, personal potentials that would contribute to the preservation of a person's psychosomatic health, his

readiness for changes, personal formation and self-development in professional activity, which is relevant for building a corrective model for restoring the resilience of a person under wartime conditions.

*Conclusions.* According to the research results, we defined the categories of low stress resistance, which corresponded to 50 people (24 women and 26 men), moderate stress resistance was determined in 12 people, and the category of high stress resistance corresponded to 1 male respondent. We found certain gender differences in the stress resistance of the victims: it is higher in men. Respondents with high trauma were characterized by a significant loss of psychofunctional ability according to the BASFI scale. The presence of significant violations of psychofunctional ability was confirmed by the BASMI metrological index and the ASQoL quality of life questionnaire.

**Key words:** resilience, vitality, psychosomatic health, personal potentials, meaningful life orientations.

**Introduction.** The problem of human resilience in the face of difficult life situations has always been interesting and attracted the attention of researchers studying various aspects of human life - psychologists, social workers, teachers and doctors. Today, resilience as a feature of the human psyche acquires great importance due to the need to resist stresses associated with current socio-economic problems - life in the conditions of a pandemic, socio-political conflicts, aggravation of economic problems in the state, etc. In a broad sense, resilience is the ability of a person or a social system to build a normal, fulfilling life in difficult conditions. In general, the phenomenon of resilience in psychology is understood in three dimensions - as a trait or ability of the individual, as a process and as an adaptive and protective mechanism of the individual.

*Resilience* as a personality trait/skill is a complex, multidimensional and dynamic complex of human characteristics. Grishin E. defines personal resilience as the ability of an adult who has been affected by a single potentially devastating event (the death of a loved one or a life-threatening situation), to maintain relatively stable, healthy levels of psychological and physical functioning, as well as the ability to feel positive emotions and learn on their own experience. Psychological resilience is defined as the ability of an individual to resist and adapt to adverse and traumatic events. Therefore, we consider 'resilience' as a personal characteristic of an individual, which moderates or mitigates the negative consequences of stress and contributes to the adaptation of a person to the conditions of the external environment [3, 4].

The significant personality characteristics in the aspect of resistance to life difficulties and their successful overcoming are *vitality* (in particular, psychological and stress resistance) and *personal potential*. D. Leontiev characterizes vitality as 'a measure of an individual's ability to withstand a stressful situation, maintaining internal balance and not reducing the success of activities' [1, p. 3]. The set of qualities and characteristics that make it possible to withstand significant loads, form the basis of a person's stability and endurance, in Western literature is denoted by the term 'hardiness', offered for use by the American scientists Salvatore Maddi and Suzanne C. Kobasa. According to the personality theory developed by these scientists, 'hardiness' means 'the pattern of the structure of attitudes and skills that allow you to transform changes in the surrounding reality into human capabilities' [1, 4].

Preservation of the vitality of the individual, personal potential and resilience in modern conditions is an urgent problem, the solution of which means achieving harmonious development of the individual, maintaining optimal mental health throughout life.

The **purpose** is the study of the phenomenon of resilience as the ability to form effective methods of overcoming negative environmental impacts.

**Experimental part.** The problem of psychological trauma experienced during war affects a person on many levels, including the brain, thoughts, spirit, relationships with relatives and friends. According to research, conducted by the scientists from the American Psychological Association: in the initial stages of recovery after a traumatic event, a person can feel extremely disorganized and broken. However, after recovery, their well-being will be better than it was before receiving psychotrauma. Scientists found that the majority of American participants in combat operations felt stable and self-efficacious due to their war experience [2, 3].

According to the ukrainian researcher Tetiana Tytarenko, resilience is considered not so much as a person's physical endurance, but as an important moral and psychological characteristic of an individual that determines the way they interact with the world, since resilience 'is not equal to survival and adaptation' and is needed not only in extreme and stressful conditions, in case of a life crisis, but also in everyday life, when a person is forced to constantly make responsible decisions, important choices and set himself or herself to solve life tasks. We also understand resilience as a certain system of attitudes and beliefs of a person that allows him to remain active and prevent the negative consequences of stress [1, 4].

Therefore, the development of resilience makes a person not only more resilient in crisis situations, but also involves the 'turning on' of certain volitional mechanisms, increasing the level of activity and effectiveness, strengthens the orientation to the meaning of life and humanistic values, and creates the basis for resilience. A resilient person has and/or develops such character traits as: poise, self-confidence, willpower, tolerance, optimism, healthy critical thinking, responsibility, the desire to improvise and find creative solutions etc. [2, 4].

*Environmental impacts* are exogenous factors associated with disturbance and dangerous pollution of the environment. Most factors of environmental impact on human consciousness are quite harmful. Numerous medical studies have established a correlation between soil pollution with heavy metals and population morbidity. Among the population that works and lives in conditions of increased noise, cases of hearing loss, functional changes of the central nervous system, autonomic and vascular disorders, coronary heart disease, etc. are more often registered. Scientific studies also testify to the negative impact of infrasound on the living organism. The basis of the influence of infrasound acoustic vibrations is vascular changes in the peripheral part of the hearing organ, which lead to hyperemia of the tympanic membrane, the ear mucosa, which causes permanent disruption of the sound-conducting apparatus. Certain changes occur in the cells of the brain and cellular structures of the myocardium. The detonation of munitions can have a negative impact on the environment, leading to soil, water and air pollution. Numerous negative eco-influences of modernity are most often destructively reflected on the human psyche. During a war (stress goes overboard, the balance in the brain is disturbed), the parasympathetic nervous system is mainly involved. It leads to changes in behavior, 'turning off' all emotions. This is necessary for a person to function effectively for survival [2, 3].

During stress, a small structure of the brain's limbic system, the amygdala, is activated. It keeps adrenaline levels high and sends signals of potential threat. When an extreme threat is combined with helplessness, as happens during military operations, the brain can send signals to the body: 'Stay still'. As a result, the heartbeat slows down, blood pressure, body temperature and intensity of movement decrease. In the conditions of war, such reactions can be instantaneous and temporary, and can last several days and weeks. Everything depends on the general mental state and strength of the traumatic event [1, 4].

Increasing the level of people's vitality is due to the identification of activity, indifference to the situation, the development of responsibility, creativity, orientation in one's own resources and methods of their mobilization, which makes it possible to ensure life-sustainable beliefs and attitudes of the individual.

Modern society is dynamically developing, experiencing serious socio-economic, legal, moral, and spiritual changes that affect various spheres of human activity, including the sphere of professional activity. The conditions in which modern people live are often called extreme and stimulate the development of stress.

Resilience is a key resource for overcoming stressful situations, the ability and willingness of the subject to take part in situations of increased complexity, to control them, to manage them, to be able to perceive negative events as experience and successfully cope with them [3, p. 45].

The psychological content of vitality includes meaningful life orientations that form the adaptive potential of a person. Personality is determined by a developed semantic regulation, which is characterized by a high level of general consciousness of life, an awareness of semantic connections between events in life, an internal locus of responsibility in realizing the meaning of life, saturation and structuredness of the value system as a higher level of semantic regulation [4, p. 72].

*Sense-of-life orientations* are a multifunctional psychological formation that regulates behavior and goal setting, which is individualized and reflects the attitude of the individual to those objects for which his activity is deployed, which creates conditions for a sense of unity of the individual with the environment, which ensures self-development and personal growth.

Olha Kornika singles out the following levels of formation of social and personal vitality:

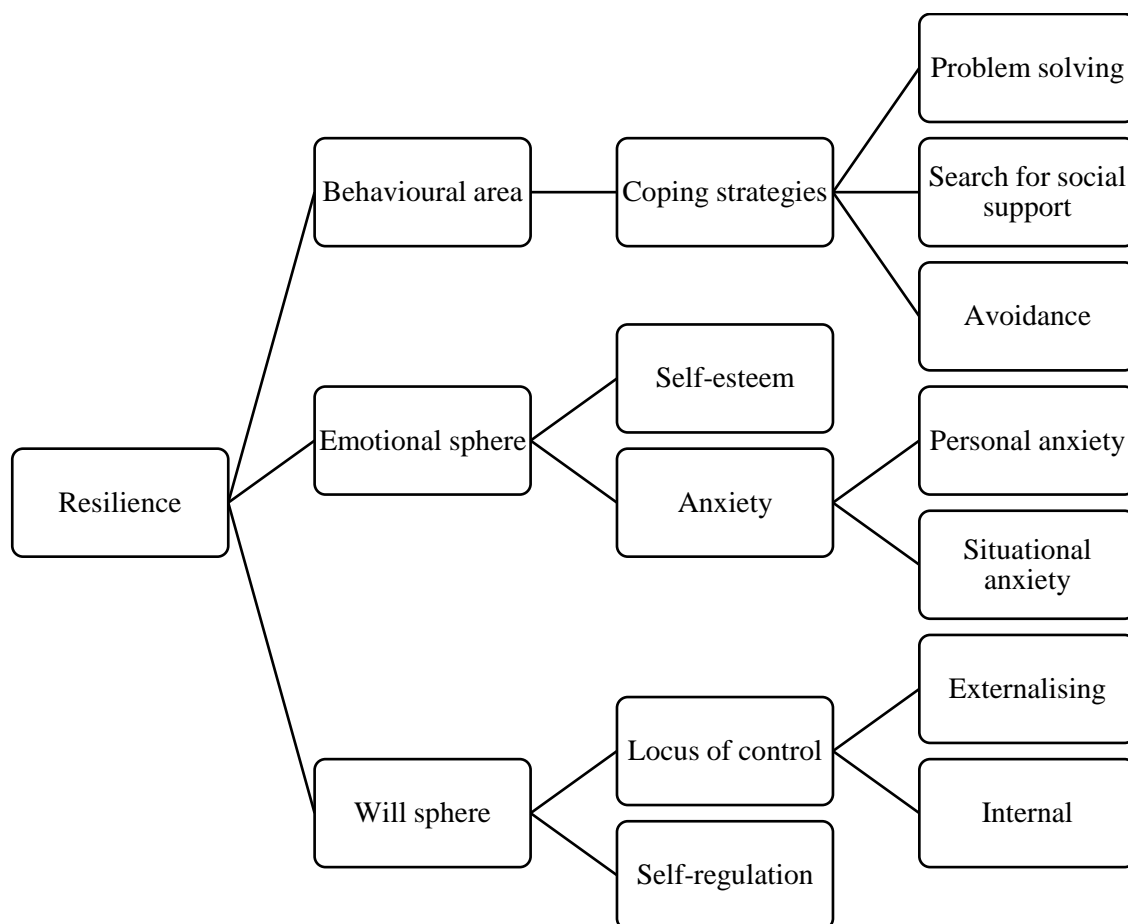
- a) level of negative attitude towards socio-cultural rules and norms of life;
- b) the level of neutrally adaptive attitude to social and cultural rules and norms of life;
- c) the level of incomplete (partial) acceptance of socio-cultural rules of life;
- d) the level of acceptance of social and cultural rules of life, etc.

In the period of long-term stress that every Ukrainian is faced with today, resilience is an internal dynamic force in terms of the ability to maintain a stable level of psychological and physical functioning in adverse situations, to adapt and to come out of them without persistent violations. In simple words, it is resilience, the ability to cope with difficulties, crisis situations and grow, having survived difficult experiences and challenges. Thus, in our time there is an increasing need to study the phenomenon of resilience, as the ability to form effective ways to overcome stressful situations.

Vitality is ensured by a number of physiological, personal and social factors. There is a need to identify and specify the characterological resources of a person, which would determine his resistance,

personal potentials and contribute to the preservation of a person's psychosomatic health, readiness for changes, personal formation and self-development in professional activities, which is relevant for building a corrective model for restoring the resilience of a person according to wartime conditions.

One more important factor of vitality is self-regulation, which is an important quality that helps maintain internal balance by controlling one's own consciousness and preventing negative influences. Volitional component is expressed in the conscious regulation of actions, bringing them into line with the requirements of the situation [2, p. 378]. Psychological factors contributing to the development of sustainability are presented in Figure 1.



*Fig. 1. Psychological factors of vitality*

**Results and their discussion.** The empirical study of resilience was conducted in accordance with the Council of Europe Convention on Human Rights and Biomedicine (from April 4, 1997), in compliance with the main provisions of the GCP (2018), the Helsinki Declaration of the World Medical Association on the ethical principles of conducting scientific medical research with human participation (1964 -2000) and the order of the Ministry of Health of Ukraine dated November 1, 2000 No. 281. In the study, after consent to participate in the survey, the demographic data of each participant was obtained and a questionnaire was filled out to assess the assessment of stress resistance - the Connor-Davidson Stress Resistance Scale-10 (CD-RISC-10). The Bath Ankylosing Spondylitis Metrology Index (BASMI) and the Bath Ankylosing Spondylitis Functional Index (BASFI) were used to assess the functional status of respondents (trauma witnesses). The Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) was used to determine the activity of psychotrauma. To assess the quality of life, a specific questionnaire of the quality of life of the studied Ankylosing Spondylitis Quality of Life Questionnaire (ASQoL) was used. All methods are adapted to the Ukrainian version.

The experimental base of the research was the Military Medical Clinical Center of the Central Region (VMKC CR), where the general sample of persons was made up of victims, whose potential features were used to reveal the features of psychosomatic health as a factor of sustainable human life support. 158 people were

involved in the experimental study, among them 72 people are trauma witnesses (experimental group - EG) and 86 people - psychosomatically healthy people (control group - CG), who were selected based on the results of a medical professional advisory opinion.

The results of stress resistance assessment according to the Connor-Davidson stress resistance scale-10 (CD-RISC-10) in EG and CG of individuals are presented in Table 1. The results of the survey showed a significant decrease in stress resistance among respondents of EG. Indicators of stress resistance were significantly higher in CG individuals (28.8±6.06) compared to EG individuals (23.8±4.39).

Table 1

**Indicators of results on the CD-RISC-10 scale in CG and EG individuals**

| <i>Structure CD-RISC-10</i>   | CG        | EG        | <b>p</b> |
|---|-----------|-----------|----------|
|   | M±σ       | M±σ       |          |
| 1. <i>The ability to adapt to changes</i>                             | 2,98±1,06 | 2,45±0,95 | <0,01    |
| 2. <i>The ability to cope with obstacles on your way</i>              | 2,79±0,97 | 2,18±0,73 |          |
| 3. <i>Attempting to see the funny side of the problems that arise</i> | 2,95±1,09 | 2,53±0,80 |          |
| 4. <i>The need to face stress can be reinforcing</i>                  | 3,09±0,87 | 2,34±0,71 |          |
| 5. <i>The tendency to recover quickly after illness or adversity</i>  | 2,83±0,97 | 1,97±0,68 |          |
| 6. <i>The ability to achieve goals in spite of obstacles</i>          | 2,98±0,86 | 2,29±0,57 |          |
| 7. <i>The ability to remain focused under pressure</i>                | 2,58±0,91 | 2,34±0,71 |          |
| 8. <i>The ability to not stop in the face of failure</i>              | 2,95±0,82 | 2,63±0,75 |          |
| <i>Considers himself a strong personality</i>                         | 2,95±0,87 | 2,71±0,80 |          |
| 9. <i>The ability to cope with unpleasant or painful sensations</i>   | 2,70±0,91 | 2,34±0,58 |          |
| <i>Overall score of CD-RISC- 10</i>                                   | 28,8±6,06 | 23,8±4,39 |          |

According to these indicators (Table 1), 50 people (24 women and 26 men) corresponded to the category of low stress resistance, moderate stress resistance was determined in 12 people, and 1 male respondent corresponded to the category of high stress resistance. We found certain gender differences in the stress resistance of the victims (Table 2). Thus, the value of CD-RISC-10 was higher in men (25.1±4.34) than in women (21.2±3.30).

Table 2

**Indicators of stress resistance depending on gender in CG and EG**

| <i>Indicator</i> | <b>Stress resistance by CD-RISC-10</b> |     |          |      | <b>p</b> |
|------------------|--|-----|----------|------|----------|
|                  | M±SD                                   | low | moderate | high |          |
| <i>Men</i>       | 25,1±4,34                              | 26  | 22       | 2    | <0,05    |
| <i>Women</i>     | 21,2±3,30                              | 24  | 2        | 0    |          |
| <i>Total</i>     | 23,8±4,39                              | 50  | 24       | 2    |          |

Respondents in the category of low stress resistance had higher trauma activity according to the BASDAI, compared to the EG group of moderate stress resistance (6.46±1.56 vs 5.64±2.09; p0.05), which is shown in Table 3.

**Results indicators according to the BASDAI scale in CG and EG individuals**

| <i>Characteristics</i>                                     | <b>EG, n=72</b> | <b>CG, N=86</b> |
|--|-----------------|-----------------|
| <i>Age (years) M±σ</i>                                     | 44,60±10,6      | 39,28±11,9      |
| <i>Men, n (%)</i>  | 25 (65,8)       | 30 (69,8)       |
| <i>Women, n (%)</i>  | 13 (34,2)       | 13 (30,2)       |
| <i>Duration of psychological trauma (years), M±σ</i>       | 5,86±5,08       | --              |
| <i>Degree of disease activity according to BASDAI, M±σ</i> | 6,21±1,74       | --              |
| <i>Functional capacity according to BASFI, M±σ</i>         | 5,96±2,21       | --              |
| <i>BASMI metrological index, M±σ</i>                       | 4,24±1,95       | --              |
| <i>ASQoL quality of life assessment, M±σ</i>               | 11,71±3,68      | --              |

Note: indicators of the index BASMI, BASFI, BASDAI, ASQoL

According to the indicators in the table. 3 individuals of EG and CG were representative in terms of gender and age. The activity of trauma-witnesses among those examined according to the BASDAI scale was 6.21±1.74, which indicates high trauma activity. respondents were characterized by a significant loss of psychofunctional ability according to the BASFI scale – 5.96±2.21, which justifies the presence of significant violations of psychofunctional ability and confirmed by the indicators of the BASMI metrological index – 4.24±1.95. According to the obtained data, according to the questionnaire of the quality of life of the respondents, the EG of persons on the ASQoL scale was 11.71±3.68, which means a moderate impact of trauma on the quality of life of the subjects.

**Conclusions.** The phenomenon of resilience in the context of the study is understood by us as a trait and ability of an individual to overcome stressful environmental influences, as a process of restoring vitality to unusual life conditions and as an adaptation-protective mechanism of an individual that determines individual possibilities of adaptation to stress after psychotrauma. The advantages of overcoming resilience are the psychological well-being of a person, their high adaptability and success in activities, and the absence of significant violations of psychofunctional ability. Psychological factors in the development of resilience are positive holding in childhood, good relationships with adults in childhood, good upbringing, the presence of friends and partners, self-regulation and self-control of emotions, foresight and purposefulness of life, the ability to plan activities, motivation for success, a sense of sincerity and coherence life, resilience, preference for positive emotions, high spirituality of the individual, active coping, high adequate self-esteem, optimism, self-efficacy, ability to seek support from others and presence of social support and cognitive flexibility.

**Prospects for further research.** Taking into account the above, the relationship between the problems of psychosomatic health of the individual and the imperfection of medical and psychological services in the aspect of reforming the health system regarding the safety of human life becomes clear, and this is what determines the future prospects of research.

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