

## Peculiarities of stress manifestation in women under war conditions and measures for its prevention

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### ABSTRACT

**Aim:** To investigate the peculiarities of stress manifestation in women under war conditions and to substantiate a set of measures for its prevention.

**Materials and Methods:** The research, which was conducted from 2022 to 2024, involved 157 women of different ages (from 18 to 70). Research methods were bibliosemantic, medical and sociological, statistical, system analysis, and logical generalization.

**Results:** The peculiarities of stress manifestation in women under war conditions have been investigated. It has been found that 42.0 % of women are constantly in a state of fatigue and exhaustion and assess their stress as maximum. A persistent negative emotional state is experienced by 72.6 % of women, and the inability to experience positive emotions – 52.8 %. More than 70.0 % of the respondents say they do not know how to cope independently with stressful conditions. A set of preventive measures to overcome stress has been proposed and practical recommendations for preventing stress among women have been developed.

**Conclusions:** Effective stress prevention measures include reducing the likelihood of stressors through self-realization, developing knowledge of the value of health, raising awareness of danger, determining one's life strategy, providing timely psychological assistance, learning to cope with stress using anti-stress techniques, and monitoring and adjusting one's reactions to stress. The developed practical recommendations can be used in awareness-raising activities by public health professionals to prevent stress in women under martial law.

**KEY WORDS:** stress, health, prevention, women, war

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### INTRODUCTION

Modern life is full of various stressors that negatively affect a person's mental state, weakening not only their mental health but also their physical and social health. This process has become especially acute in the context of the full-scale war unleashed by Russia. The emergence of new deep stressors related to the hostilities – missile attacks, air raids, bombings, leaving their homes, moving to other regions, loss of property, jobs, fear for their lives and the lives of children and other family members, grief over the death of loved ones, etc. – has affected the mental health of the entire population of Ukraine, especially women. Given this, it is important to study the peculiarities of women's stress as a psychophysiological phenomenon and to substantiate a set of measures for its prevention in the context of war within the public health system.

Stress is a physiological state characterized by the reaction of the human body to prolonged negative events, namely danger, excessive mental and emotional stress, grief, obligations imposed on a person, making important decisions that occur at a fast pace, and often a combination of several negative events happening simultaneously. [1]. The stress reaction has gender differences. The "fight or flight" response is activated in men, while in women, the brain areas responsible for visualization and cognitive and emotional processing of experience are activated [2, 3]. Therefore, women tend to focus on traumatic events and relive them over and over again. From the point of view of physiology, this condition is accompanied by a high level of stress hormones. In addition, the multifunctionality inherent in all women increases the psychological burden, which is why women are in a state of complete "combat readiness" [4].

Modern scientific research in public health focuses on developing and implementing measures to prevent and manage stress and overcome its negative consequences for the entire population [5, 6]. At the same time, the problem of stress prevention in women is not sufficiently studied, which determined the choice of the research topic. This issue has become extremely relevant and important in our time – in times of war.

## AIM

The aim is to investigate the peculiarities of stress manifestation in women under war conditions and to substantiate a set of measures for its prevention.

## MATERIALS AND METHODS

The research was conducted in 2022-2024 at Zhytomyr Medical Institute of Zhytomyr Regional Council and Zhytomyr Ivan Franko State University. It involved 157 women of different ages (from 18 to 70 years) and with different educations, and their geography of residence was Zhytomyr, Zhytomyr oblast.

Research methods: bibliosemantic – to study the nature and types of stress, causes of its occurrence, and effective methods of overcoming; medical and sociological – to determine women's awareness of the peculiarities of the occurrence and course of stress, measures for its prevention; statistical – to analyze the results of the women's survey; system analysis and logical generalization – to develop practical recommendations and formulate conclusions.

The research was conducted in three stages. The first stage was based on the study of a sufficient number of literary sources and provided for the analysis of physical and psychological signs of the impact of stress on the health of the population, including women. This made it possible to clarify the essence of the concept of "stress" and identify its types, manifestations, methods of assessing the stress level, and basic preventive measures. The second stage included the development of a special questionnaire to determine the level of women's psychological state, their anxiety and its impact on the respondents' daily lives, and women's knowledge of effective ways to overcome stress. The questionnaire contained 54 questions intended to study the peculiarities of women's reactions to stress and identify their predominant types and preventive measures. The questionnaire was anonymous without any references to the authors of the article in the answers. The results were used for scientific purposes only. Questionnaire was assessed by the experts in this field (2 professors and 4 associate professors) and was approved by

the Academic Council of Zhytomyr Ivan Franko State University (Protocol No. 7 dated 21.11.2022). The third research stage involved conducting surveys, analyzing them, and statistically processing the study results. This stage provided for the scientific substantiation of a set of measures to prevent stress in women and the formulation of general conclusions and practical recommendations.

Data collection, processing, and analysis were performed on a personal computer using MS Excel, a software package that can use statistical data processing methods. Consent to voluntary participation in the survey was obtained from all the respondents involved in the study. This research followed the regulations of the World Medical Association Declaration of Helsinki – ethical principles for medical research involving human subjects.

## RESULTS

After analyzing the signs of stress in women during the war, we found that 42.0 % of the respondents are constantly in a state of fatigue and exhaustion and rate their stress with a maximum score of "5," with other answers of "4" – 28.7 %, "3" – 19.8 %, "2" – 7.6 %, and "1" – 1.9 %. It has also been found that women experience no less irritability and mood deterioration. The largest part of the respondents rated their level of irritability with the highest score of "5" – 43.9 %, "4" – 26.1 %, "3" – 17.2 %, "2" – 10.1 %, and "1" – 2.5 %. When investigating the causes of irritability, the war and a chronic state of psychological and physical exhaustion are mentioned first. When we asked women about their level of concentration, we got opposite results: "1" – 12.1 %, "2" – 17.2 %, "3" – 51.5 %, "4" – 13.3 %, "5" – 5.7 %. Due to stress and constant anxiety, the ability to concentrate and focus on work or study is extremely low. This leads to a decrease in working capacity while performing duties at work, provoking an even greater stress level.

It has been found that women have recorded cases of appetite disorders or overeating, especially for a night, over the past two years. One-third of the respondents emphasized that they periodically suffer from overeating or complete lack of appetite – 30.5 %; the rest rated their appetite disorders as follows: "1" – 21.0 %, "2" – 21.0 %, "4" – 17.2 %, "5" – 8.9 %. Fear, anger and anxiety, pain, despair, confusion, powerlessness, shame, guilt, apathy and sadness, excitement – all these emotions are normal to experience in any situation, but during the war, these emotions can prevail over positive ones. During war, the main emotions are fear, anger, powerlessness, and guilt. The analysis of the answers showed that most often the respondents felt

**Table 1.** Aspects of the war that cause stress or severe nervousness in women (n = 157)

Aspects of war	Absolute frequency of responses	Share of responses
Safety of loved ones	156	28,4%
Loss of source of income/job	87	15,8%
Lack of opportunity to leave their town or village in case of possible hostilities	39	7,1%
Fear of moving to a new settlement	36	6,5%
Fear of what awaits abroad	34	6,2%
Risk of dying during hostilities	31	5,6%
Loss or risk of loss of property	29	5,2%
Lack of opportunity to leave the country	27	4,9%
Risk of injury	23	4,2%
Wounds received during the war	22	4,0%
Problems with access to products	21	3,8%
Problems with communication with friends/family	19	3,4%
Problems with access to medicines	17	3,1%
Problems with buying clothes and shoes	7	1,2%

Source: compiled by the authors of this study

**Table 2.** Situations that women faced during the war that led to stress

Situations	Absolute frequency of responses	Share of responses
Losing your job and being forced to be unemployed	34	12,2%
Feeling helpless	32	11,5%
Surviving the death of loved ones	31	11,1%
Surviving other stressful situations	29	10,4%
Surviving a serious illness of loved ones	25	9,0%
Living in a state of near-suicide	21	7,5%
Losing faith in your abilities	19	6,8%
Surviving bombing, shelling	19	6,8%
Serious conflict with others	14	5,0%
Surviving a serious illness or surgery	13	4,6%
Losing faith in people, facing meanness	12	4,3%
Suffering from an attack or robbery	11	3,9%
Applying to the court for help	6	2,1%
Losing your livelihood	4	1,4%
Suffering from theft or fraud	3	1,0%
Being subjected to threats, intimidation	3	1,0%
I did not experience any stressful situations	1	0,3%

Source: compiled by the authors of this study

aggression – 12.7 %, fear – 12.4 %, fatigue – 11.3 %, anger – 11.2 %, and despair – 9.8 %. Only 1.0 % of the respondents felt joy. This distribution of the responses indicates that a significant number of the women surveyed are in a state of constant stress. It has been found that 56.7 % of the respondents assessed their emotional state as characterized by the emotions of hatred, fear, and anger; another third of the respondents stated

the prevalence of fatigue, sadness, apathy, insomnia, tearfulness – 35.6 %, only a small percentage noted a state of calm and peace – 7.6 %.

Constant uncontrollable thoughts about traumatic events, disturbing memories, dreams about them, a sense of continual danger, and excessive agitation – all these are symptoms of being in a state of prolonged stress. When asked whether they had experienced

disturbing memories or dreams, most respondents answered in the affirmative – 64.3 % said “yes,” and 35.7 % said “no.” The overwhelming majority of the respondents (72.0 %) reported experiencing severe physical or emotional stress from things that remind them of negative events over the past year. The desire to avoid talking about negative events was expressed by 88.5 % of the women, and the desire to avoid activities, places, and people reminiscent of negative events was expressed by 69.4 %, which confirms the state of stress among the women surveyed.

Negative attitudes toward others and distancing or withdrawing from them are signs of a devastated emotional state. When asked whether they felt a negative attitude towards themselves or other people, 55.4 % of the women surveyed answered “yes”; 69.43 % of the respondents felt a sense of detachment. The inability to feel positive emotions, depressed mood, and persistent negative emotional state are also signs of stress. It has been found that 52.8 % of the women answered affirmatively to the question, “Have you noticed your inability to feel positive emotions over the past year?” A persistent negative emotional state over the past year was reported by 72.6 % of the women surveyed.

Below are the results of the analysis of avoidance of mentions of traumatic events or situations that cause anxiety. Answers to the question “Do you avoid recalling events or situations that cause anxiety?” were distributed as follows: “very often” – 23.6 %, “often” – 29.3 %, “sometimes” – 21.0 %, “rarely” – 15.3 %, “never” – 10.8 %. The analysis shows that a third of the respondents try to avoid mentioning unpleasant events or talking about them in one way or another; the majority state that they do not follow the news about the war or do not watch TV to avoid stress or nervousness. When asked how often they are irritated, the respondents gave the following answers: 36.9 % of the respondents answered “very often,” 26.1 % answered “often,” 19.8 % answered “sometimes,” 12.1 % answered “rarely,” and 5.1 % answered “never.” It should be noted that psychologists define the state of irritability as a temporary reaction with various somatic manifestations, which can be caused by an increased emotional response to any external or internal factors.

The following questions provide an opportunity to assess whether women can cope with stress and overcome nervous conditions independently. The analysis of answers to the question “Is it difficult for you to “switch off,” to give up worrying, even if it seems justified?” showed the following results: 38.8 % of the women answered “very often,” 31.2 % – “often,” 17.2 % – “sometimes,” 8.3 % – “rarely,” and 4.5 % – “never.” The analysis of the answers shows that more than 70.0 %

of the respondents state that they are unable to cope with stressful conditions on their own: 40.8 % “very often” and 32.5 % “often” state difficulties in overcoming anxiety, even when the problem is solved and the stressor is eliminated.

By studying the peculiarities of the war’s impact on the manifestation of stress symptoms in women, we found out the main aspects of the war that cause stress or severe nervousness: “safety of loved ones” – 28.5 %, “loss of a source of income/job” – 15.9 %, “inability to leave their town or village in case of possible hostilities” – 7.1 %, “fear of moving to a new settlement within Ukraine” – 6.6 % (Table 1).

During the last two years of the war, the women surveyed experienced situations of job loss (12.3 %), feelings of helplessness (11.6 %), death of loved ones (11.2 %), and other stressful situations (10.5 %) (Table 2).

When asked how women respond to stress, the majority of the respondents (72.6 %) said, “I enter into negotiations”; “I go into a state of numbness” – 15.9 %; “I try to escape” – 11.5 %. This distribution of responses confirms the judgment that women resort to dialog to resolve problems. At the same time, 77.1 % of the women verify their inability to overcome stress and demonstrate the ability to cope with stressful situations independently. To overcome stress, the women most often use the following methods: “take stress medication to calm down” – 19.6 %, “watch TV, movies, TV series” – 12.3 %, “get deeper into work” – 12.3 %, “surf the Internet” – 11.8 %, “eat more sweets/delicious food” – 9.8 %.

An important task of specialists is to prevent stress in the population during the war. The main goal of stress prevention is to avoid stressors, eliminate negative manifestations of stress, and increase the body’s stress resistance. Depending on the actors involved in preventive measures, the following types of prevention are distinguished: individual, interpersonal, and public. Individual prevention includes a system of socio-psychological and medical measures aimed at an individual. The interpersonal level of prevention involves the impact of measures on the person’s social environment. As a rule, this is done through group therapy, including family therapy. Public prevention includes educational activities conducted by public health professionals in cooperation with government agencies and NGOs to prevent stress, teach the community to overcome its consequences and inform citizens about the health risks of stress.

Preventing stressful conditions involves a systemic impact on a personality’s emotional, motivational, volitional, and behavioral components, as well as on reducing the negative effects of external stressors, to

prevent stressful conditions and create a high quality of life. The basis of a person's stress resistance is their lifestyle. Therefore, targeted adjustments to lifestyle and behavior are most useful for resilience to stressors. Here are simple methods for preventing stressful conditions in women. Good sleep: the human body and psyche recover best during sleep. Sleep loss leads to increased stress. Balanced diet: following basic nutritional rules helps prevent stressful conditions. A balanced daily diet helps to replenish energy losses, provide the body with nutrients, and restore working capacity. Physical activity: active recreation, regular walks in the fresh air for 30-40 minutes, and medium and high-intensity sports for 10-20 minutes will help restore the body and overcome negative stress. Positive emotions: spend more time on things that bring pleasure and are in line with a person's values (music, movies, nature, etc.). Planning and daily routine: a planned daily routine and strict adherence help to have more certainty, orderliness, and consistency and help avoid overload. Communication with important and close people: psychological relief is provided by communication with close people, which eases the psychological state.

## DISCUSSION

The founder of the stress theory, Hans Selye, considered stress as a protective reaction of the body to external and internal stimuli and dangers that act on the biological, chemical, and physiological levels [7]. According to experts [8], isolated stressful situations are the norm, inherent and provided by nature, and the reaction to stressful situations is aimed at preserving life and health. The body quickly becomes exhausted if traumatic events or episodes occur frequently, especially daily. A feeling of loss of strength and a complete lack of energy compensation leads to a sense of失控 over one's own life, which in itself becomes a powerful stressor.

The imbalance between the human body and environmental events results from a sudden, often unexpected, and tense situation. This results in a certain nonspecific body reaction as a response to this event – stress [9]. Scientists [10], describing the signs of stress, distinguish the following: personal and medical, physiological and psychological. They also add that stress of any nature is accompanied by emotional tension and has its causes.

Currently, the main objective reason for the stress of the Ukrainian population is the war waged by Russia against our country. Living in conditions of uncertainty and constant threats to life leads to a decrease in labor productivity and the emergence of health problems of

various kinds. Stress is especially dangerous for women, especially pregnant women. Due to being in a state of stress that disrupts the adaptation processes inherent in physiological pregnancy, cases of miscarriages and premature births have become more frequent in Ukraine in recent years [11, 12].

Scientists [13] note that to manage and overcome stress, in addition to specific measures of psychological influence or assistance, methods should be used to promote health and prevent the onset and development of diseases. Psychologists advise combining various methods of preventing and dealing with stressful conditions. Prevention of many diseases, especially cardiovascular disorders caused by stress, should include a whole range of measures: reducing physical inactivity, optimizing daily routine, alternating tension or excitation of the nervous system with rest, walking in the fresh air, and balanced nutrition with strict adherence to meals [14].

In addition to the scientific developments in stress management offered by psychologists, simple traditional methods of relaxation and doing your favorite things should be combined with walks and good sleep. Such common simple ways to overcome stress include being outdoors, playing music, sleeping, pets, socializing with friends, doing extreme sports and recreation, watching movies, reading books, etc. [15].

Given the current situation in Ukraine, practical psychologists advise using various methods [16]. Public health professionals should join the prevention activities in this area by conducting awareness-raising activities among women of different age groups. Prevention of occupational stresses should be carried out through planning working hours and strict adherence to them; arrangement of the workplace and working tools in accordance with personal preferences; development of a regime of alternating work and rest that will not lead to exhaustion; creation of a favorable psychological climate in the work team; increasing personal responsibility for the results of work. Prevention of information stresses should be aimed at reducing the share of negative information, limiting the time spent on social networks, etc.; communication stresses – by prioritizing communication only with pleasant, positive, "safe" people for a given woman; traumatic stresses – avoiding situations that can lead to physical and, as a result, psychological trauma, observing safety precautions in the context of military operations; emotional and domestic stresses – constructive resolution of family and domestic conflicts with relatives, neighbors, etc., demonstrating understanding and tolerance, resisting crossing personal boundaries, seeking help for domestic violence, etc. Based on our research, we

have developed practical recommendations for improving the awareness-raising activities by public health professionals on stress prevention among the female population of Ukraine under martial law: 1) Development of a model for stress prevention in women and its implementation in the awareness-raising activities by public health professionals in the following areas: a) avoidance of exposure to stressors; b) development of mechanisms for "hardening" women's psyche to the negative effects of stress; c) use of coping strategies to overcome existing stress (self-control, distancing, acceptance of responsibility, positive reassessment, confidential actions to change the situation, seeking social support, drawing up a plan to solve the problem). 2) Organization of counseling, medical, and psychological assistance to women by public health professionals to help them overcome stresses that cause psycho-emotional disorders and depression and refer them to specialized professionals (psychologists, psychotherapists, doctors of various specialties) if necessary. 3) Conducting awareness-raising activities at the community level to prevent stress in women of different age groups (training, simulation games, conversations, etc.). 4) Posting information materials on the websites of the Public Health Center of Ukraine, regional centers for disease control and prevention, and online educational platforms on approaches to avoiding and overcoming stress in women, creating relevant applications, apps, films, etc.

## CONCLUSIONS

The peculiarities of stress manifestation in women under wartime conditions have been investigated. It has been found that 42.0 % of women are constantly in a state of fatigue and exhaustion and evaluate their stress with the highest score. Most often during the war, the women felt aggression – 12.7 %, fear – 12.4 %, fatigue – 11.3 %, anger – 11.2 %, and despair – 9.8 %,

which indicates that a significant number of the surveyed women were in a state of constant stress. The inability to feel positive emotions and depressed mood are experienced by 52.8 % of women, and a persistent negative emotional state – by 72.6 %. At the same time, more than 70.0 % of the respondents state that they do not know how to cope with stressful conditions independently.

The main aspects of the war that cause stress or severe nervousness in women are: "the safety of loved ones" – 28.5 %, "loss of a source of income/job" – 15.9 %, "inability to leave their town or village in case of possible hostilities" – 7.1 %. At the same time, 77.1 % of the women confirm their inability to overcome stress independently and demonstrate the ability to cope with stressful situations. Stress prevention is based on the need to avoid or reduce the impact of stressors, "harden" the human body to their possible effects, and develop the ability to overcome the effects of stress on their own. Effective stress prevention measures include reducing the likelihood of stressors through self-realization of the individual; developing knowledge about the value of health; raising awareness of the danger (military operations, exposure to toxic substances, etc.); determining one's life strategy; providing timely psychological assistance; learning to cope with stress using anti-stress techniques and coping strategies; monitoring and adjusting one's reactions to stress, etc.

Based on our research, we have developed practical recommendations for improving the awareness-raising activities by public health professionals on stress prevention among the female population of Ukraine under wartime conditions.

## PROSPECTS FOR FURTHER RESEARCH

The research aims to investigate the level of post-traumatic stress disorder in military personnel who participated in combat operations.

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## CONFLICT OF INTEREST

The Authors declare no conflict of interest

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