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## APPLICATION OF MINDFULNESS PRACTICES IN WORK ON STRESS REDUCTION DURING THE WAR

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# **Application of Mindfulness Practices in Work on Stress Reduction during the War**

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### **Abstract**

The mindfulness practice involves working with internal mental states based on awareness and the ability to be present in the here and now, contributing to stress reduction. Implementing a stress reduction program is highly relevant in the context of the war in Ukraine. Our research focused on internally displaced persons in Ukraine (20 persons) affected by the war's consequences (loss of loved ones, property, housing, and employment). The program spanned 8 weeks and consisted of 8 sessions in a group therapy format. The structure of the group sessions comprised three main components: working with personal emotions, cognitive processing, and using meditation. It was necessary to alleviate emotional tension by helping participants become aware of their feelings and cognitions and prepare them to enter a meditative state effectively. The results of our work showed that before the start of the therapy group, the stress level of the 20 persons, as measured by a subjective introspective scale, was 9 points ( $\sigma = 0.45$ ;  $\sigma = 0.2$ ), while after

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its completion, it reduced to 6 points ( $\sigma = 0.22$ ,  $\sigma = 0.05$ ). Our research results demonstrated that mindfulness practice has a beneficial impact on reducing stress reactions in individuals during times of war and can be successfully applied in the work of clinical psychologists and psychotherapists as a practical approach to addressing and overcoming stressful situations, particularly during the war.

*Keywords*: mindfulness, consciousness, stress, psychotherapy group, therapy, self-regulation, resilience, coping strategies.

## Introduction

New challenges and tasks characterize the current stage of human development. In addition to natural disasters, the ongoing pandemic (Covid-19), and the modifications of viruses that compete with living organisms, globalization has engulfed humanity. All of this is happening against the backdrop of active developments in neuroscience, nanotechnology, artificial intelligence, and the movement towards digitization and inclusive society. Amidst such rapid and "blowing-up" changes, people live in difficult conditions. Successful adaptation, instant decision-making, social mobility, openness to new experiences, and responses to rapidly growing demands are essential for survival.

One of the most significant challenges Ukraine faces today is the war. Nevertheless, the Ukrainians defend their right to independence, uniqueness, consolidation with the European community, and a democratic development path. These challenges, which Ukrainians are particularly acutely aware of, highlight issues related to political, military-defense, economic, and other levers of state and citizen protection. One of these issues is preserving people's mental health, developing resilience, self-management, self-regulation, and acquiring coping strategies in complex life conditions. The Ukrainian psychological community is faced with a task of paramount importance – to assist people in coping with stress during the war and acquire self-preservation technologies as an integral component of mental health (Mishchikha *et al.*, 2020; Vitiuk, 2022).

This research aims to conduct a theoretical analysis of the aforementioned issue within the contemporary neurobiological and psychological sciences field and to pilot a stress reduction program during times of war using mindfulness practice.

#### Literature review

Today, the field of psychological science has accumulated significant experience in dealing with stress, one of which is mindfulness. As a rapidly developing approach, mindfulness integrates theoretical knowledge and practical meditation experience as a practice of human awareness in each specific moment of existence. Mindfulness is a mental state in which an individual tracks their experiences occurring here and now, as opposed to there and then (aspects of experiencing temporal parameters of the past or future). It refers to the ability to consciously live through each given moment of life without getting stuck on those life situations that are already concluded (immutable) or those that have not yet occurred (although the individual constantly actualizes them). It is the capacity of consciousness for introspection of one's activities.

The practice of mindfulness is not new in science. Its roots can be traced back to Buddhist traditions and involve "awakening consciousness" to help individuals live in harmony with themselves and the surrounding world. Through self-knowledge, as an understanding of the environment, it directs the appreciation of every moment of one's existence, fully experiencing it. It teaches not detachment from the world but rather a sense of co-participation with it, as it provides an understanding and a postulate of "the external through the internal."

Consciousness and focus on the present are central concepts in Gestalt psychology (Perls, 1969). It refers to maintaining constant contact with one's internal and external worlds. The inner plane of awareness encompasses processes and events occurring within the body. The external plane represents the totality of external circumstances that enter consciousness as sensory signals. Perls identified an additional middle plane, which he called the plane of fantasy. According to the scientist, this plane consists of dreams, beliefs, attitudes, and other cognitive processes. Thus, Perls asserted that this plane is "responsible" for the emergence of neuroses in individuals by excluding events from the consciousness of their internal and external worlds. Self-regulation of the organism depends on the awareness of the present moment and the ability to fully live here and now, openness, and readiness for new experiences, with various emotional modalities.

By removing all religious overlays, mystification, and the symbolism of archetypes in Eastern culture, John Kabat-Zinn (Medical School of the University of Massachusetts, the 1970s) proposed an inclusive approach, considering cultural traditions from both the East and the West (Kabat-Zinn, 2003). These efforts to integrate mindfulness (by translating it into the field of scientific knowledge - modern psychology) have led to further adaptations of meditation practice into more secular and psychological forms and scientific explorations in this field (Rapgay & Bystrisky, 2009). Consequently, the experiential knowledge of Eastern sages and Zen masters, who have been exploring this realm of consciousness for millennia, has been incorporated into the practice of Western psychotherapists as a turn towards the exploration of one's inner nature of consciousness through self-observation, making life more meaningful and purposeful, and pointing the way to wisdom.

Regarding its integration into the scientific realm, let us attempt to define the specificity of meditation and science. Undoubtedly, there are points of contact,

although there is a significant difference in the way of knowing. From the scientific perspective, it is a way of understanding the external world through empirical objective knowledge, while meditation is a way of self-understanding (the nature of the inner self), the essence of insight into the experience of oneself through mindfulness. However, both science and meditation use the observation method.

Thus, the MBSR (Mindfulness-Based Stress Reduction) program was founded by John Kabat-Zinn. His well-known work, "Full Catastrophe Living: How to Cope with Stress, Pain, and Illness Using Mindfulness Meditation" (2013), became an international bestseller on mindfulness practice. It paved the way for new medical, psychology, and neurophysiology development directions. This innovative work opens the pathway to access individuals' internal resources, where through self-observation, one can achieve a level of awareness in various aspects of their existence, primarily in reducing the impact of stressors on human mental functioning (by cultivating resilience).

MBSR utilizes a combination of mindfulness meditation, body awareness, and exploration of behavioral, cognitive, and emotional patterns.

The program is scientifically grounded and recommended in treatment protocols for various disorders. It encompasses patients with chronic pain, depression, and other mental disorders (Kabat-Zinn, 1982). Additionally, neurobiological studies (Siegel, 2007) demonstrate that mindfulness offers numerous physiological benefits, including improved well-being, heart, and immune function, and promotes the development of resilience and emotional balance. The neuro-visualization study has shown that meditation enhances activation and connectivity in self-regulation-related brain parts (Tang *et al.*, 2013). In the study by Vago & Zeidan (2016), a neurophenomenological approach to investigating modality-specific forms of concentration and non-conceptual awareness is presented, which can improve the understanding of the state of calmness.

The research by Janssen *et al.* (2018) has confirmed the positive impact of Mindfulness-Based Stress Reduction (MBSR) on reducing emotional exhaustion, stress, depression, anxiety, and more. In addition, improvements were found in mindfulness, personal achievements (professional), self-compassion, sleep quality, and relaxation.

Mindfulness practice is gaining particular relevance today, as evidenced by numerous scientific investigations into its application in various areas such as clinical and rehabilitation psychology, medicine, and others.

Regarding the effectiveness of mindfulness practice in stress reduction, confirmation has been obtained in the study by Sevel *et al.* (2019) and Creswell (2017). They indicate that mindfulness-based interventions positively impact physical and mental health, cognitive processes, emotional states, and interpersonal relationships. Hence, they hold promise for treating both psychological and physical symptoms. Furthermore, the scientific work by McEwen, (2016) also demonstrated the positive influence of mindfulness practice and meditation in stress reduction,

as did the findings of Sagui-Henson et al. (2018), suggesting that mindfulness can complement behavioral health interventions.

The study by Shapiro *et al.* (2005) examined the underlying mechanisms of mindfulness-based interventions and proposed a model of mindfulness to elucidate its potential mechanisms of positive influence. Finally, Ding *et al.* (2019) investigated the impact of mindfulness on emotions, explicitly showing that mindfulness had a positive effect on daily emotions through reflection.

The MBSR program is currently thriving at the Center for Mindfulness, led by Dr. Eric Dickson, the President and CEO of UMass Memorial Health, for nearly 40 years and remains a leading institution in stress reduction through mindfulness (MBSR). The Therapeutic Neuroscience Lab, also housed within the mindfulness department, conducts research focused on the neurobiological underpinnings of how mindfulness affects the mind and associated behaviors. It aims to develop and refine mindfulness-based treatment methods grounded in biological mechanisms and optimized for individual benefit. The research conducted at the Therapeutic Neuroscience Lab encompasses basic science, translational medicine, clinical trials, and public and population health to enhance well-being and realize human potential.

## Methodology

Mindfulness practice was applied in our work with internally displaced persons in Ukraine (a group of 20 individuals) affected by the consequences of war.

All clients sought assistance in reducing their diminished quality of life due to high-stress levels. Among them, 15 had their homes completely destroyed, while 5 had to flee their homes and seek refuge in western regions of Ukraine amidst explosive bombings. In addition, four people experienced the loss of close family members. During the diagnostic process, stress factors were identified among the respondents, such as increased anxiety, fear, despair, apathy, confusion, helplessness, psychological tension (anticipation of further harm), irritability, fatigue, sadness, feelings of abandonment, pessimistic outlook on the future, aggressive tendencies, anger, loneliness, rumination, as well as insomnia and psychosomatic physical pain.

Our work in the psychotherapeutic group was conducted per a stress reduction program tailored for war conditions in Ukraine, spanning 8 weeks. We also considered the research conducted by Brown *et al.* (2022) that examined the impact of meditation training focused on attention, open monitoring, and mindfulness-based cognitive therapy on reactivity and emotional regulation: neural and subjective evidence from the study.

Thus, we incorporated not only mindfulness-based stress reduction (MBSR) but also mindfulness-based cognitive therapy (MBCT), which includes training in

two key forms of meditation: focused attention (FA) and open monitoring (OM). We also found the study by Tang, Y., and Tang, R. (2020) particularly important, as it emphasized the consideration of individual psychological characteristics and differences among individuals. It is significant since people with specific personality traits and characteristics may find meditation more attractive and beneficial, motivating them to continue practicing throughout their lives.

Before starting the project, all participants underwent assessments to determine their stress levels and psychological well-being.

The stress level of the group of 20 individuals, assessed using a subjective introspective scale, was 9 points ( $\sigma = 0.45$ ;  $\sigma = 0.2$ ) at the beginning of the group's work, indicating a high-stress level among the respondents during the war.

Our practical experience working with clients in overcoming stressful situations through mindfulness-based practices allowed us to identify three main blocks of therapeutic group work.

First block. The work aims to reduce psychological tension triggered by emotional reactions to stressful situations during the war. Firstly, reacting to a stressful situation requires immediate release of emotional tension - a person's response to stress. The group offers techniques for releasing emotional tension through body-oriented therapy practices, gestalt psychology (releasing muscular tension through appropriate physical exercises and actions), and yoga exercises. In addition, breathing practices (with various options and techniques) play a significant role, serving not only as a means of calming and relaxation but also contributing to the harmonization of mental states and, consequently, making informed decisions (not in a state of emotional arousal). The main message of the first block of group work is: "What do I feel? Where in my body is fear (or another relevant emotion) located? What is its image? What does it feel like to touch?" etc. (analyzing sensations at different levels of the sensory system). These exercises help redirect attention from the "stress fixator," thus reducing its impact. Moreover, this is where the mindfulness practice itself comes into play -a selfobservation of one's sensations here and now.

Second block. It involved the work on the cognitive component of the mind:

- the system of beliefs, values, attitudes, expectations, etc.;
- working at a conscious level: situation analysis, thought patterns;
- working with maladaptive thoughts (replacing them with more appropriate ones);
- reflecting on one's thoughts and beliefs in the present situation;
- consciousness through "checking" thoughts and beliefs for realism (differentiating between imagined and natural).

Third block. It encompassed meditative techniques as a way of mental rejuvenation and developing mindfulness.

Our work experience shows that after relieving psychological tension and analyzing their cognitions, clients undergo meditation practice more effectively,

without fixation on unresolved problems (which can hinder the transition of brain waves from the beta range to the alpha range). The process of observing thoughts occurs more productively (without struggle), and the level of focused attention is higher. Clients note greater effectiveness in entering a state of relaxation and attentiveness to their mental states and sensations. Brain-generated thought formations and the activity of mnemonic processes decrease while concentration on bodily sensations, sustained by attention, increases. Working with thoughts becomes effortless during observation, and their exploration leads to calming mental processes down.

Respondents were tasked with practicing meditation in and outside of group activities. Attention was focused on the formal (static state of meditation) and the informal (ongoing meditation in the awareness of one's activity) states in mindfulness practice. All participants kept an observation journal where they reflected on their work.

In particular, to maintain a state of psychological balance, clients were offered the practice of "Stop" (Liao *et al.*, 2020, p. 4), which develops consciousness when experiencing a stressful situation.

S = Stop

T = Take a breath

O = Observe

P = Proceed

The value of this practice lies not only in shifting attention in moments of stress (to objects of the surrounding world) but to inner sensations, breath, bodily reactions, analysis of thoughts, etc., which undoubtedly contributes to redirecting attention from being stuck in the "point" of fear to a broader field of the response. It reduces psychological tension and increases awareness of the situation here and now (event-reaction-understanding-release). We also utilized the practice of "Radical Acceptance" (Brach, 2004).

Radical acceptance refers to accepting oneself through attention to physical and mental states and accepting (rather than resisting) everything one experiences and denies. From there, one learns to accept oneself when becoming aware of the traps of self-judgment, resistance, and self-criticism. It involves not fleeing from pain but instead investigating it, not escaping from stress but studying it, including: where it is located in the body, what image, association, and sensation are present (engaging all sensory organs in the description and characterization), accepting, analyzing, and ultimately releasing it. Uncertainty and resistance, in themselves, bring about even more pain.

## **Results**

A stress reduction program based on mindfulness integrates meditation practice and body awareness (including yoga techniques). It is an experiential learning of how to deal with stress.

The main message of the MBSR program is that individuals cannot control stressors, but they can control their reactions to them.

In stressful situations, the MBSR program aims to support the physical and mental well-being of people, including:

- Helping individuals cope with stress, pain, everyday difficulties, and overcoming obstacles to achieving their goals.
- Experiencing challenging times with a sense of dignity and self-control.
- Being present in the here and now (mindfully experiencing each moment of life), feeling alive, and being in touch with oneself.
- Accepting one's emotions and resolving problems.
- Developing awareness of interactions with others fosters harmony in relationships (both with others and oneself).
- Providing access to internal resources for self-healing.

Mindfulness involves the ability to focus attention on the present moment without judgment consciously. It refers to living life in the fullness of its multidimensionality, recognizing each moment's opportunities and their potential for personal growth. However, insufficient awareness of the present moment inevitably leads to problems caused by unconscious and automatic patterns, often driven by deep-seated fears, insecurities, and other factors. When these habitual behavioral patterns persist, problems accumulate, and individuals may feel disconnected from life.

Through mindfulness practice, individuals gain direct access to their internal resources and facilitate the transformation of deep-seated processes related to self-acceptance and personal potential. A mindfulness development program includes daily meditation practices and journaling with work analysis. Meditation helps individuals experience life with full access to the spectrum of conscious and unconscious processes. Mindfulness practice involves non-judgmental acceptance and investigation of one's experiences, including bodily sensations, thoughts, emotions, impulses, and memories, to reduce stress.

Meditation incorporates techniques such as body scanning (attending to various bodily sensations), concentration, and breathing exercises. Furthermore, mindful yoga practices focus on the accuracy of performing yoga asanas (postures) and awareness of physical and mental manifestations. In addition, some techniques for working with thoughts and mental formations are used to enhance self-observation of internal cognitive processes and consciousness.

The results obtained consistently confirm the benefits of mindfulness practice. For instance, before participating in psychotherapeutic group work, the stress level of a group of 20 individuals was subjectively measured at 9 points on an introspective scale (6 = 0.45; 62=0.2). After completion of the program, it was reduced to 6 points (6 = 0.22, 62=0.05).

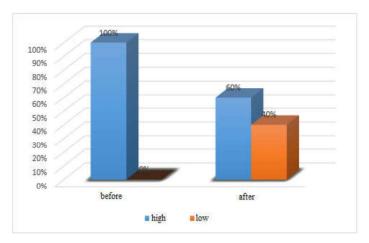


Figure 1. Dynamics of stress levels of the group before and after working in the therapy group

After the psychotherapeutic group work, an interview was conducted where each participant shared their emotional state. We obtained the following results:

- 46% of the respondents reported a sense of tranquility, relaxation, and calmness;
- 24% of the respondents noted the release of emotional tension and psychological rejuvenation (reaching a new level of meaning);
- 15% of the respondents experienced increased energy, joy, and uplifted mood:
- 10% of the respondents felt a clarity of thinking, cognitive interest, and insights;
- 5% of the respondents reported reduced physical pain (musculoskeletal pain).

In our study, we also utilized a phenomenological approach, according to which an individual's personal experience constitutes the psychological reality through which the interpretation of reality occurs. Consequently, the investigation of the personal experiences of individuals becomes a significant aspect of psychological research. We applied narrative psycho-techniques, employing a psychosemantic approach using metaphorical resources (Mishchykha, 2014: 215). Thus, before starting psychotherapy, the participants delineated their state in the categories of past and present.

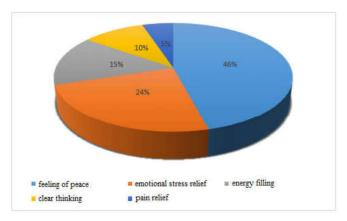


Figure 2. Respondents' state of mental health after mindfulness practice (in percentage)

As a result, all the positive aspects were described in the past tense, evoking nostalgia in the narratives of the group participants. Dominant nouns in these descriptions included: peace, tranquility, comfort, safety, plans, dreams, family, and home.

In the present tense descriptions, we encountered nouns such as war, shelling, death, fear, danger, hopelessness, tears, etc. The present tense descriptions included verbs characterizing indefinite actions, such as fear, cry, experience, worry, do not know, etc. When describing the future, we came across phrases such as: cannot see the future, end of my plans, don't know how to live on, and so forth.

When asked to provide associations or images for the past, present, and future, they were distributed as follows:

- The past a rainbow, a landscape of nature against a blue sky and a sun.
- The present an underground castle, an enclosed square, and a tunnel.
- The future a fog, a winter field.

After going through the work in the group, the participants depicted the future as a tunnel with an exit to the light; sunrise over the sea. There was also a shift in the semantic descriptions, such as hope, living in the present, today being a happy day, and today being the best day of my life. The verbs like hope, believe, dream, and love appeared in the descriptions of the future. The participants were offered to share their metaphors that emerged after completing the program. In particular, we received the following: (1) I live in the moment; (2) I captured tranquility and blissş (3) Silence in the mind, peace in the soul; (3) Being in the moment is what happiness is!; (4) I become gratitude myself; (5) I love myself, and I love the world; (6) I have become what I believe I am.

The effectiveness of mindfulness practice is also evidenced by 82% of respondents desire to continue practicing regularly even after completing the psychotherapeutic work.

## Discussion

Mindfulness-based stress reduction program is now a scientifically grounded and proven method initiated by Kabat-Zinn, (1982; 2003; 2013), widely represented in medical, psychological, psychotherapeutic, and other domains of scientific knowledge. However, further development of the scientific inquiry required advancements, specifically in neurobiological research, as neuroscience can investigate the functioning of neurons and their peculiarities at different levels of organismal and mental activity. Scientific investigations (Siegel, 2007; Tang et al., 2013) have shown that mindfulness practice enhances human brain functioning by activating self-regulation zones. Furthermore, it has been demonstrated by Janssen et al. (2018) that meditative practices are effective in starting cognitive processes, harmonizing sleep as a significant component of productive organismal functioning, and preventing depressive states. They also activate the parasympathetic nervous system (restoration of vital forces), improving mental health and restoring an individual's energy (life) balance.

We find the studies by Sevel *et al.* (2019) and Creswell (2017) important. They have shown the effectiveness of mindfulness practice in reducing stress and as a resource for preserving and restoring individuals' physical and mental health. It also positively impacts interpersonal relationships and overall behavioral patterns of individuals (McEwen, 2016; Sagui-Henson, *et al.*, 2018).

Since the stressful conditions of individuals are a part of the emotional and affective component of psychics, which serves a regulatory function, we found the research by Shapiro *et al.* (2005) and Ding *et al.* (2019) attractive. These studies examined the mindfulness model (Shapiro *et al.*, 2005) and the influence of mindfulness on emotions through reflection and self-observation (Liao *et al.*, 2020).

Brown *et al.* (2022) findings align with our understanding of mindfulness practice. The author discusses integrating mindfulness-based cognitive therapy (MBCT) and considering the individual psychological characteristics of the respondents being worked with by the psychologist during the mindfulness program (Tang & Tang, 2020). We refer to the internal response to such work without activating the zone of psychological defense, internal motivation for self-development, self-awareness, etc.

Since the application of mindfulness practice has not been explored under martial law and with internally displaced persons, our attention was explicitly focused on the possibility of implementing a stress reduction program during the war in Ukraine.

We assumed that implementing a mindfulness-based program would positively impact stress reduction in individuals, promote resilience and self-regulation, and facilitate the individual's discovery of internal psychological resources to live, cope, and work in a country at war.

## Conclusion

Thus, the stress reduction program (mindfulness) is a valuable resource for overcoming stressful situations. It considers the peculiarities of the psyche's functioning, including: (1) The individual's capacity for observation and self-observation (introspection); (2) The ability to access the inner Self by transitioning to the Alpha level (98-13 Hz) of brainwave activity, which promotes relaxation and mental rejuvenation and also activates cognitive processes; (3) The opportunity to become a more conscious 'agent' of one's life based on intentional behavioral patterns is achieved through acceptance, exploration, and understanding of one's emotional expressions and reactions (behavioral patterns); (4) The potential for a more meaningful life through the development of the ability to live in each moment of one's existence, finding one's path, and recognizing genuine internal needs (rather than imposed, externally influenced ones); (5) The ability to acquire self-regulation skills and cultivate resilience; (6) The potential to make life more efficient, fulfilling, and creative (insights).

The results of our research have shown that mindfulness practice has a favorable impact on reducing stress reactions in individuals during times of war. In addition, respondents noted the ability to manage their mental lives, exhibit self-control and self-effectiveness in both activities and everyday matters and envision a positive future through conscious awareness of traumatic episodes.

The mindfulness practice can be successfully applied in the work of clinical psychologists and psychotherapists as one of the practical approaches to addressing the problem of reducing and overcoming stressful situations in individuals, particularly in the context of war.

We see the prospect of conducting a long-term longitudinal study on the impact of mindfulness practices on individuals' ability to cope with stress and develop resilience. We are interested in verifying the results of working with mindfulness-oriented techniques within different temporal intervals. As for further scientific investigations in this area, we hypothesize that an 8-week practice in the aforementioned method forms new neural connections and, consequently, a habit of engaging in such work, which may yield the expected effect throughout one's lifetime. We are interested in developing the need for mindfulness practice from a therapeutic process to a personally recognized need, which becomes an integral

part of one's life alongside other aspects of life activities. Equally intriguing is the research on the influence of these practices on the development of self-awareness in individuals, their generation of creative ideas, and so on. It requires time and extensive observation, which awaites its unraveling.

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