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Supervision in Crises: Neuropsychological Support for Clinical Work during Wartime

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Abstract: War creates significant challenges for the mental health of the affected population and professionals providing psychological support. In such conditions, supervision plays a crucial role in maintaining a professional environment. It helps prevent emotional burnout, enhances the effectiveness of trauma-related work, and supports the resilience of specialists. This article explores the supervision of clinical cases in wartime conditions and emphasises its critical role in supporting mental health professionals. Additionally, it focuses on the neuropsychological mechanisms that affect patients and supervisors during periods of both acute and chronic stress. It examines how traumatic events alter cognitive and emotional functions. Moreover, it highlights the specific challenges of supervision when resources are limited and addresses the ethical dilemmas that supervisors may face under such conditions. Importantly, the article discusses various supervision formats, including individual, group, and online supervision. It outlines common challenges such as professional burnout and countertransference. Emphasis is placed on integrating digital technologies into the supervision process, as well as the emerging potential of artificial intelligence to assist in clinical analysis. By proposing an interdisciplinary approach, the article offers practical recommendations for neuropsychologists and supervisors working in crisis settings. Finally, it underscores the importance of adaptive supervision practices that meet the unique demands of wartime environments.

Keywords: supervision; neuropsychology; war; trauma; clinical cases; mental health; artificial intelligence.

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1. Introduction

Armed conflicts result in a significant increase in mental health issues, including post-traumatic stress disorder (PTSD), depressive disorders, psychological trauma, and anxiety. Professionals who support affected individuals face intense emotional strain, increasing the risk of burnout. In such conditions, supervision becomes quite essential. It not only enhances the effectiveness of psychological support but also helps specialists maintain emotional stability.

War disrupts normal psychological functioning and contributes to widespread mental health issues. People experience acute crises, loss of loved ones, forced displacement, helplessness, and fear. At the same time, mental health professionals work under immense pressure, assisting numerous clients who have endured traumatic events. This demands not only professional expertise but also resilience against secondary trauma.

Supervision during wartime serves several critical functions: 1) maintaining professional competence (providing guidance and tools to manage crises); 2) preventing professional burnout (allowing supervisees to share challenges and receive emotional support); 3) ensuring effective clinical case analysis (fostering collaborative problem-solving for complex cases), and 4) building a professional support network (creating opportunities for knowledge exchange and peer learning).

Existing research proves that supervision is vital for supporting professionals who work with trauma survivors. According to a report by the OECD (2015) on strategic crisis management, traditional supervision methods must be adapted for crisis settings, including war. Due to security risks and limited physical access, online platforms have become a necessary tool for conducting supervision sessions. Baum (2012b) suggests that group supervision helps reduce burnout by fostering peer support and shared learning. In contrast, individual supervision allows for a deeper analysis of clinical cases and personalised guidance.

Supervision is especially important during wartime. Mental health professionals face severe psychological trauma, acute post-traumatic conditions, and adjustment disorders. In this context, neuropsychology, as the science of the connection between brain structures and mental functions, offers additional tools. These tools help deepen the understanding of changes caused by stress and trauma. Integrating neuropsychological knowledge into the supervision process allows for a more accurate assessment of clients' conditions. It also helps select appropriate therapeutic strategies. Moreover, it provides essential support for professionals who work under intense emotional pressure.

The international relevance of this article lies in its exploration of clinical case supervision during the total war – a situation that resonates globally and requires practical and scientific analysis. In current scientific literature, the topic of supervision in wartime and mass psychological trauma is addressed only in fragments, mostly within human psychology or crisis psychology. This article exceeds traditional analysis. It proposes the integration of a neuropsychological approach with digital support tools and artificial intelligence, fields that are becoming increasingly important in the global professional landscape.

The authors performed a critical evaluation of existing supervision models and identified their limitations in wartime conditions. These include limited resources, high levels of transference, challenges in ethical decision-making, and the need to adapt to digital formats. The authors' contribution is the development of an interdisciplinary supervision model. It considers neuropsychological mechanisms, digital risks and opportunities, and the practical functioning of mental health systems in emergencies. The proposed approaches are scalable and adaptable for international programmes supporting professionals in conflict zones or humanitarian crises.

A review of scientific sources reveals that, despite the numerous publications on secondary traumatisation and emotional burnout, only a few studies connect these topics to neuropsychology and digital supervision tools. This article fills that gap and creates a platform for further interdisciplinary scientific discussion.

Accordingly, this article aims to broaden the understanding of supervision in wartime contexts. It outlines the key objectives of such supervision and describes effective methods suited to

conflict conditions. The role of neuropsychology in enhancing supervisory practices is also explored. Furthermore, the article examines the unique challenges faced by supervisees during periods of war. It presents the methodology and findings of a relevant study. Finally, it offers perspectives on the development of supervision in crises.

2. Theoretical Foundations of Supervision in Clinical Practice

Supervision is an essential part of clinical practice. It serves both an educational and supportive role. In psychotherapeutic and neuropsychological contexts, supervision is defined as a structured process. It involves interaction between an experienced specialist (the supervisor) and a practising professional (the supervisee). The aim is to ensure quality clinical care, develop professional skills, and prevent emotional burnout.

Supervision serves three main functions: 1) *pedagogical* (developing theoretical and practical skills); 2) *administrative* (ensuring adherence to professional standards); and 3) *supportive* (providing a safe space to discuss emotional experiences).

From a theoretical perspective, Stoltenberg & McNeill (2012) explain that supervision is realised through several models. The most common models are: 1) *the developmental model*, which focuses on increasing the professional's competence; 2) *the integrative model*, which combines various therapeutic approaches based on the clinical situation; and 3) *the relational model*, which highlights the supervisor-supervisee interaction as a key factor in the process's effectiveness. Each model has its strengths. They are applied based on the clinical context, the nature of the cases, and the participants' experience.

As noted by Baum (2012a), in crises such as war, supervision undergoes significant alterations in both content and structure. Supervisees often work with traumatic cases, accompanied by intense emotional responses such as fear, survivor's guilt, loss of life's meaning, and PTSD symptoms in clients. In these situations, supervision must address the specifics of crisis response. This includes the need for rapid support, the use of stabilising techniques, and helping professionals manage their reactions to difficult material. Effective methods include "rapid supervision" models, crisis interventions in a supervisory format, and flexible hybrid approaches. These approaches, such as online sessions or shortened formats, are adapted to unstable conditions.

Shah et al. (2023) emphasise that ethical aspects of supervision in high-stress conditions are of particular importance. The supervisor is responsible not only for the professional level of the supervisee but also for their psychological safety. This involves minimising secondary traumatisation, providing a safe space for emotional expression, and maintaining boundaries between personal and professional matters. During wartime, ethical challenges become more complex. Confidentiality is often not guaranteed, access to supervisors may be limited, and professionals face a dilemma between needing emotional support and dealing with limited resources. In such cases, flexible, context-sensitive ethics must be followed. These ethics should prioritise humanity, transparency, and mutual support.

Supervision in clinical practice serves as both a tool for professional development and a means of psychological and emotional protection. This is especially important for professionals working in difficult social situations. To be effective, supervision must adapt theoretical models to crisis conditions. It must also carefully consider both neuropsychological and ethical factors.

During times of war, professionals often work with clients who have experienced traumatic events while being under significant stress themselves. In such circumstances, supervision becomes especially important. It calls for a re-evaluation of both the aims and the methods used in supervisory support.

Supervision practices during wartime must take into account a number of challenges. These include increased emotional pressure, limited resources, irregular contact with clients, and the risk of re-traumatisation. In this context, flexible and adaptive supervision models are particularly relevant. They should combine elements of crisis counselling, group support, and remote work.

Such methods need to support not only professional development but also promote emotional stability and help specialists restore their internal resources.

3. Supervision Methods in Wartime Conditions

In wartime, working with victims and providing assistance becomes more difficult due to stress, loss, and constant risk. As a result, supervision is an indispensable resource for supporting specialists. The methods of supervision used depend on the nature of the work, psychological stress, and limitations. These methods can be traditional or adapted to the wartime context, taking crisis factors into account.

Busse (2009) explains that classic supervision methods follow standard practices such as individual meetings with the supervisor, group reflection, and analysis of professional situations. However, during wartime, these methods often need to be adjusted to address new challenges.

Individual supervision is a traditional form where a specialist works with a supervisor to address specific work situations and develop professional skills. During wartime, this method is adapted to more frequent and intense sessions. Staff are often under high stress and need regular support. Individual sessions focus on helping individuals adapt to crises, cope with traumatic experiences, and maintain mental health.

Group supervision involves several specialists discussing their cases with a supervisor. This method is especially effective in crises, as it allows colleagues to support each other, share experiences, and exchange strategies for coping with stress. During wartime, group supervision is vital because it fosters mutual support and reduces feelings of isolation. It helps specialists cope better with stress and provides them with ideas for managing difficult situations.

At the same time, adapted counselling methods take into account the specifics of wartime (Jones, 2004; Mardanshahi et al., 2025). For instance, supervision in wartime plays a crucial role in PTSD. Adapted methods can include emotional stabilisation exercises, discussions of traumatic situations, and techniques to prevent burnout and psychological overload.

After all, group supervision remains important in wartime, as it enables workers to share their stress experiences and challenges within a supportive group. This creates a sense of solidarity, reduces stress, and combats isolation. It also allows colleagues to share effective work methods in extreme conditions and help each other find solutions to complex problems. Meanwhile, individual supervision during wartime often becomes the main method. It provides personalised support tailored to each specialist's unique needs and stress factors. Working with a supervisor helps individuals understand how to manage stress and trauma, avoid burnout, and maintain professional effectiveness in crises.

According to Wang & Gupta (2023), crisis supervision is a specific method used in extreme stress and trauma cases. It provides support after traumatic events, helps specialists adapt to dangerous new circumstances, and adjusts behaviour in high-stress situations. Crisis supervision helps workers in conflict zones or disaster areas recover from stress and maintain their professional competence.

In wartime, when physical meetings are impossible due to danger or transportation limitations, online supervision becomes a crucial tool. It allows specialists to receive support and professional assistance even in conditions of limited access or isolation.

Online supervision enables professionals to obtain the support they need without leaving their workplace or travelling to dangerous areas. This format allows sessions to take place even without physical infrastructure or when mobility is limited. It also facilitates global consultation and support for experts. However, certain technical and ethical concerns must be addressed. For example, sensitive information must be kept confidential when transmitted online. Additionally, online supervision can be less effective emotionally than in-person meetings, as it is harder to establish full contact and interpret non-verbal cues.

As noted by Almendingen, Skotheim, & Magnus (2023), online supervision should be part of a comprehensive strategy that includes traditional and individualised methods. This approach

combines the convenience of online communication with the depth of face-to-face meetings, providing the most effective support. Consequently, supervision methods during wartime must be flexible and adapted to crisis conditions. They should offer not only professional assistance but also emotional support for workers facing extremely stressful and difficult situations.

In such circumstances, it is especially important to recognise how stress, fear, and psychological exhaustion influence a specialist's thinking, emotional well-being, and ability to work effectively. The neuropsychological approach is particularly valuable in this context. It helps better understand the psychophysiological factors that affect professional performance under conditions of chronic stress. Incorporating neuropsychology into supervision creates new possibilities. It enables a clearer interpretation of emotional and cognitive changes in professionals. It also supports the creation of tailored self-regulation strategies and strengthens resilience in the face of constant demands.

4. Neuropsychological Approaches in Supervision

Neuropsychology is a key branch of psychology that explores the relationship between the brain's structure, function, and human behaviour. When dealing with stress, trauma, or crises, neuropsychological approaches are especially important. These approaches are critical for helping individuals who have experienced traumatic events or PTSD. Neuropsychological research helps one understand how stress and trauma affect cognitive functions and offers effective methods for addressing these issues.

According to Girotti, Bulin, & Carreno (2024), stress and trauma can have serious consequences for brain activity and cognitive functions. They include memory, attention, concentration, decision-making, planning, and adaptation to change. In traumatic situations, the brain experiences acute stress reactions that disrupt cognitive processes.

Prolonged stress can cause damage to areas such as the hippocampus (responsible for memory and learning) and the prefrontal cortex (involved in task execution, attention, and planning). This damage can lead to difficulty concentrating, organising thoughts, making decisions, and even memory loss. Traumatic events can also alter the brain's neurochemistry, particularly through changes in cortisol, the stress hormone. As a result, cognitive functions such as memory, adaptability, and information processing may be impaired. Chronic stress or trauma can lead to serious cognitive impairments that impact one's ability to work, adapt to change, and interact with others. PTSD, in particular, can make it difficult for individuals to control their emotions and complete everyday tasks (Centre for Substance Abuse Treatment (US), 2014).

PTSD is a serious mental health disorder that can develop after trauma or high-stress events. Neuropsychology is particularly useful in studying how trauma changes brain function and how it affects behaviour and mental health. People with PTSD often show dysfunction in brain structures responsible for emotional responses, memory, and stress regulation, such as the amygdala. Moreover, PTSD can cause the emotional system to become hyperactive, resulting in symptoms such as aggression, anxiety, depression, and frequent panic attacks. This can hinder healthy social interactions and lead to social isolation.

Watkins, Sprang, & Rothbaum (2018) claim that neuropsychologists use various methods to treat PTSD, including cognitive-behavioural techniques, neuropsychological therapy, and cognitive training. Techniques such as relaxation, meditation, and mindfulness are crucial in helping individuals regain self-regulation and cope with stress.

Neuropsychological approaches are especially beneficial in supervision. This is particularly true when working with professionals who support people who have experienced trauma. These approaches are also valuable in high-stress environments. They provide a deeper understanding of how stress and trauma impact cognitive and emotional functions, offering tools to improve performance. Managers with neuropsychology expertise can use neuropsychological tests and tools to assess their employees' cognitive state. This allows them to identify early signs of cognitive dysfunction, such as memory or attention issues, caused by stress or trauma.

Using neuropsychological approaches, managers can teach employees techniques to restore cognitive functions, improve memory and attention, and help them adapt to stress (Nuralieva et al., 2024). These techniques may include exercises that develop cognitive flexibility, self-control, and resilience to stress.

Thus, integrating neuropsychological approaches into supervision enables professionals to better understand the biological and cognitive factors affecting their colleagues' mental states. This enhances support, promotes psychological resilience, and improves crisis management. Additionally, it helps maintain professional capacity in high-stress or traumatic situations.

5. Neuropsychological Consequences of Chronic Stress and Trauma

Chronic stress is linked to ongoing changes in the hypothalamic-pituitary-adrenal (HPA) system, which regulates the body's response to threats. Continuous activation of this system increases cortisol secretion. Over time, this has a neurotoxic effect, especially on brain areas sensitive to stress hormones, such as the hippocampus, prefrontal cortex, and amygdala. The consequences include memory impairments, reduced attention span, and difficulties with planning and impulse control. These effects complicate both psychotherapeutic work and supervision, as clients' behaviour may become disordered or rigid (Prasko et al., 2022).

Acute trauma triggers the "lower" evolutionary levels of neural regulation, based on the flight and survival reflexes. In such states, the prefrontal cortex, responsible for rational thinking, temporarily decreases its activity. Meanwhile, the amygdala dominates, leading to fear, anxiety, and hypersensitivity to threats. While this mechanism helps with immediate adaptation, it can lead to emotional exhaustion, impaired emotional regulation, flashbacks, dissociation, and hyperactivity in the long term. Clinically, this manifests as decreased self-reflection, altered perception of reality and challenges in forming a secure therapeutic alliance. Supervisors need to understand these neuropsychological phenomena to select appropriate interventions (Nielsen et al., 2024).

Assessing clients in wartime requires not only clinical intuition but also the use of reliable tools to identify functional changes in brain activity. Key tools include neuropsychological interviews, which uncover subjective complaints and behavioural patterns, as well as brief cognitive tests, such as the Montreal Cognitive Assessment (MoCA), Mini-Mental State Examination (MMSE), and Frontal Assessment Battery (FAB). These tests evaluate memory, attention, and executive functions. Given limited access to technological resources, rapid methods, adapted for online or telephonic support, are becoming increasingly important. Additionally, subjective scales such as the Hospital Anxiety and Depression Scale (HADS) and the Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5) are crucial for tracking symptoms of PTSD, anxiety, and depression (Blevins et al., 2015).

Integrating neuropsychological assessments into supervision helps create more accurate interventions. It allows these interventions to be tailored to the client's cognitive level, preventing overload and enables professionals to understand their patients' behavioural mechanisms. This approach not only improves therapy effectiveness but also helps prevent emotional burnout among therapists working in high-stress environments.

6. Supervision of Clinical Cases in Wartime

In wartime conditions, clinical supervision plays a crucial role in supporting the quality of psychotherapeutic care and the emotional stability of professionals. The format of supervision varies based on factors such as availability, safety, and technological resources. In this regard, three main supervision models are commonly used: individual, group, and online supervision.

Individual supervision is particularly effective when dealing with complex clinical cases that require in-depth analysis and confidentiality. It allows specialists to better understand their reactions to challenging material, recognise transference, and avoid projection when working with traumatised clients. Group supervision, often conducted online, provides a space for a collective understanding of trauma dynamics, broadens professional knowledge, and reduces isolation. Online

supervision, driven by safety concerns and limited access to in-person meetings, is a pragmatic and efficient tool for supporting professionals in conflict zones or those who have been displaced (McMahon, Jennings, & O'Brien, 2022).

One of the main challenges in wartime supervision is working with traumatic content, such as stories of death, torture, sexual violence, loss, or war experiences. Frequent exposure to such content increases the risk of secondary trauma and burnout. It is also important to recognise and address countertransference – unconscious reactions of the therapist to the client. In a wartime setting, these reactions can become more intense and influence clinical decisions.

Effective supervision in these conditions requires adapting traditional methods to the new realities. For example, when treating a soldier with dissociative disorder, the supervisor might focus on assessing the client's neuropsychological profile, especially changes in working memory, attention, and emotional regulation. In cases of civilians who have survived the bombing, supervision may prioritise stabilisation techniques that address psychological and neurophysiological responses to triggers. Integrating knowledge of the hippocampus, amygdala, and prefrontal cortex in the context of post-traumatic reactions helps therapists create more targeted interventions (Kredlow et al., 2022).

Thus, supervision in wartime requires a blend of classic psychotherapeutic skills, an understanding of neuropsychological processes, and the ability to adapt strategies to an ever-changing environment. It serves a dual purpose: 1) maintaining professional effectiveness, and 2) preventing burnout while supporting clinicians working under conditions of uncertainty and danger.

This has laid the groundwork for moving towards a broader, interdisciplinary approach to providing supervisory support. In today's crisis context, it is becoming increasingly important to involve knowledge from related fields such as medicine, information technology, military psychology, ethics, and even cybersecurity. Such an interdisciplinary perspective, along with the potential to integrate technology, offers new possibilities. It allows developing flexible, scalable, and personalised supervision, particularly through the use of online platforms, artificial intelligence, and digital tools for psycho-emotional self-assessment.

7. Interdisciplinary Approach and Opportunities for Technology Integration

Nowadays, clinical case supervision increasingly demands an interdisciplinary approach. This approach combines psychology, neuroscience, information technology, and medicine. In wartime, when specialist resources are limited and the need for psychological support is high, integrating technological solutions into supervision becomes crucial. Supervisors and psychotherapists often find themselves in situations where digital platforms are not merely alternatives. In many cases, they are the only viable tools for professional interaction.

Digital platforms such as Zoom, Doxy.me, PsyToolkit, and other specialised services enable regular communication between supervisors and specialists, even when access is remote or when there are threats to life or internal displacement. These platforms exceed simple communication. They allow for case structuring, secure data storage, integration of psychometric tools, and analysis of client status dynamics. The online format also facilitates the formation of multidisciplinary teams. This enables neuropsychologists, psychiatrists, social workers, and lawyers to quickly coordinate their actions. They can also tailor their interventions to the complex realities of wartime.

Zoom is the most frequently utilised platform for online supervision. It offers several advantages, including flexible scheduling for both group and individual sessions, the use of breakout rooms for small group discussions, shared document viewing, and the ability to record sessions with participants' consent. However, there are important ethical considerations. These include ensuring confidentiality, securely storing recordings, obtaining informed consent, and respecting the privacy of both clients and professionals.

Doxy.me is a platform specifically designed for telemedicine and provides a high level of personal data protection, meeting HIPAA standards in the United States. It does not require any

software installation and allows users to create virtual offices, which helps reduce participants' concerns. At the same time, its user interface is less flexible than that of Zoom. For this reason, it is typically used for structured and brief sessions.

PsyToolkit is a free platform primarily used for neuropsychological screening and designing experiments. In the context of supervision, it can be useful for assessing professionals' cognitive resources, such as attention and stress resilience. It can also serve as a self-observation tool between sessions. Still, interpreting the results requires specialised training, which limits its use by non-experts (Mardanshahi et al., 2025).

One of the promising opportunities is the use of artificial intelligence (AI) to analyse clinical cases under supervision. Algorithms already exist that, based on session descriptions, video recordings, or psychometric test results, can automatically identify signs of cognitive dysfunction or emotional destabilisation. These AI systems can assist supervisors by helping them recognise warning signs in client behaviour or the specialist's methods more quickly. Additionally, machine learning models can pre-classify common clinical case scenarios. This helps optimise the training of new specialists and structure supervision sessions more effectively.

Despite its potential, the use of AI in clinical supervision requires careful ethical consideration. There is a risk of losing the contextual understanding of individual situations, over-standardisation, or breaching confidentiality. However, when combined with human expertise and the flexibility of the supervisor, digital tools can significantly enhance the effectiveness of supervision. This is particularly true for tools based on neural networks. These tools can be especially useful during complex social upheavals, such as those experienced during war (Garibay et al., 2023).

The integration of technology into supervision does not replace the human element. Instead, it opens up new possibilities for systemic analysis, adaptability, and scaling professional support in situations of limited resources. This approach requires ongoing research and the adaptation of methods. It also calls for active collaboration between IT professionals, mental health specialists, and ethicists. Their goal is to develop standards for the safe and effective use of new technologies in supervision.

8. Empirical Study on the Interdisciplinary Approach and Potential for Integration with Technology

Methodology. Due to changes in clinical practice and supervision during wartime, this study explores the experiences of professionals who use digital technologies and artificial intelligence (AI) in supervising clinical cases. A mixed-methods research design was chosen, combining quantitative and qualitative approaches to achieve this objective.

Participant Selection. The study included 20 participants – psychologists, psychotherapists, and supervisors with experience handling traumatic clinical cases during wartime. Participants were aged between 29 and 56 years old. The group consisted of 14 women and 6 men.

The *inclusion criteria* are the following: 1) a minimum of two years of clinical experience working with trauma-affected clients; 2) regular participation in supervision sessions (individual or group) at least once a month for the past six months; and 3) willingness to participate in an online interview and provide written informed consent.

Meanwhile, *exclusion criteria* include: 1) no consistent supervision practice; 2) refusal to take part in a video interview; and 3) current signs of psychological instability, based on self-assessment.

Special Considerations and Ethical Issues. When selecting participants, several factors were considered: their emotional state, whether they were located in combat zones or evacuation areas, and their access to the Internet. Interviews were conducted confidentially. All recordings were anonymised and encrypted. The study was approved by the internal ethics committee of the hosting organisation.

Data Collection Methods. Data were collected using two methods:

- An online questionnaire (Google Forms), which included closed (quantitative) and open (qualitative) questions. These focused on a) the use of digital platforms (e.g., Zoom, Skype, Signal, and other practical tools); b) the challenges and benefits of online supervision; and c) attitudes towards using AI in clinical analysis.

- Semi-structured interviews were conducted with each participant via Zoom, lasting 45-60 minutes. Topics included adaptation to digital environments, trust in digital tools, confidentiality, and the impact of stress.

The responses were analysed using Atlas.ti software. Thematic codes were applied, frequency data were reviewed, and key characteristics were visualised.

Data Analysis and Validation. Quantitative data from closed questions were analysed using descriptive statistics (percentages and frequencies). Qualitative data from open responses and interviews were analysed through thematic content analysis. A triangulation method was used, comparing survey results with interview content to enhance credibility. To ensure coding reliability, two researchers independently coded the data. Their results were then compared, achieving a strong inter-rater agreement (Cohen's $\kappa = 0.82$).

Rationale for Methodological Approach. The mixed-method design was chosen for several reasons: 1) to quantify the use of digital tools in supervision; 2) to gain deeper insights into professionals' experiences, ethical challenges, and views on AI in extreme conditions; and 3) to apply methodological triangulation (survey, interview, content analysis) and increase the validity of the findings.

The data analysis revealed the findings, presented in Figure 1.

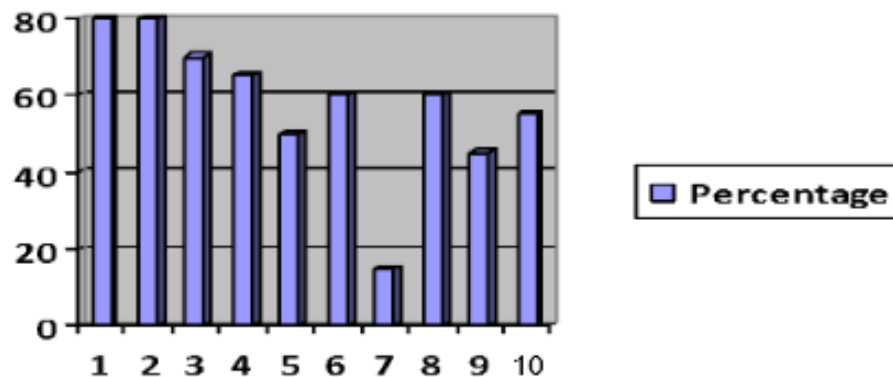


Figure 1. Findings on the use of digital platforms and attitudes towards AI in supervision

Source: the authors' own conception

1. Regular use of online supervision
2. Pros: flexibility and accessibility
3. Cons: lack of non-verbal information
4. Cons: emotional distancing
5. Cons: diminished depth of the therapeutic relationship
6. Interested in applying AI to case analysis
7. A high level of trust in automated tools without specialist involvement
8. AI functions considered useful: thematic content analysis of case texts
9. AI functions: the visualisation of emotional dynamics
10. AI functions: the identification of symptom patterns

The findings indicate that 85% of respondents regularly use online tools for supervision. They highlight flexibility and geographical availability as the main benefits. However, respondents also pointed out several disadvantages. These include the lack of non-verbal information (70%), emotional distance (65%), and a reduction in the depth of contact (50%).

At the same time, 60% of participants expressed a cautious interest in using AI to analyse clinical cases. Yet, only 15% trust automated tools enough to use them without professional guidance. The AI functions deemed most suitable for use were: a) analysing key themes in case texts, b) recognising symptoms, and c) visualising emotional dynamics based on language or intonation.

The results show that supervision practices have quickly adapted to the wartime context. A hybrid model is gradually forming, combining human expert analysis with technological support. However, respondents stressed the importance of ethically considering the use of digital tools, especially in trauma work. In these cases, empathy, understanding of context, and confidentiality are essential.

Even though the idea of introducing AI into supervision remains controversial, the study suggests high potential for an interdisciplinary approach. This approach would account for both psychotherapeutic and technological factors. Further research could focus on developing adaptive support systems for supervisors, which would complement, not replace, human experience through analytical tools.

While AI is being actively integrated into education, many ethical issues remain underexplored. One major risk is the loss of context. AI algorithms may interpret or assess learning activities without considering the emotional, social, or cultural background of individual learners. For example, automated assessment systems might mark unconventional answers as wrong, ignoring creative approaches or different cultural perspectives.

Another concern is the excessive standardisation of educational content. AI models tend to promote uniform approaches, which can devalue personalised learning paths. This is especially problematic in inclusive education, where tailoring learning to individual needs is crucial. Transparency of algorithms is also a critical issue. Those involved in education have the right to know how decisions affecting their learning are made.

To tackle these challenges, it is important to develop ethical guidelines for AI use in education and provide digital ethics training for educators. In addition, teachers, students, and parents should be involved in creating policies that regulate the implementation of these technologies. Careful research into AI's impact on critical thinking, learner autonomy, and equal access to knowledge is necessary. This will help ensure a fair balance between innovation and humanity in education.

9. Prospects for Developing Supervision in Crises

Supervision plays a vital role in supporting professionals during crises such as war, natural disasters, economic instability, or social upheaval. It helps psychologists, social workers, medical staff, and other specialists manage their responsibilities while addressing emotional, mental, and professional challenges. To improve supervision in crisis settings, novel approaches, innovations, training programmes, and international cooperation are essential.

Supervision in crises is evolving to meet the demands of unstable environments. One key challenge is adjusting supervision methods to rapidly changing conditions and limited resources (Vashchenko & Ivanenko, 2018). Flexible strategies ensure that professionals receive the necessary support despite unpredictable circumstances.

Online supervision is a promising solution, providing ongoing support to professionals in remote or high-risk areas where traditional supervision is unavailable. Digital platforms offer consistent feedback, psychological assistance, and professional development regardless of physical constraints.

Technology also plays an important role. Artificial intelligence (AI) can enhance supervision by monitoring stress levels and identifying early signs of burnout. AI-powered applications can help caregivers respond more effectively to their needs and those of their clients.

Supervision methods must be adaptable to meet the diverse needs of professionals facing different levels of stress, trauma, and emotional exhaustion. Crises require tailored approaches to ensure that strategies remain effective under changing conditions.

Preparing specialists for crisis-related work is essential. Training should focus not only on technical skills but also on psychological resilience. Balfour & Zeller (2023) highlight the need for specialised programmes covering crisis counselling, psychotherapy, and psychosocial support. These programmes should address the realities of war, natural disasters, and emergencies, equipping professionals with practical tools for working with trauma survivors.

Building emotional resilience is a key aspect of training. Workshops on self-care, stress management, and relaxation techniques help prevent burnout and maintain mental well-being. At the same time, supervisors often work with entire teams rather than individuals. Effective leadership training can help managers create supportive environments where professionals feel comfortable sharing experiences and seeking assistance.

International cooperation is crucial for enhancing supervision during crises. Kokudo & Sugiyama (2020) emphasise that collaboration among professionals from different countries allows for the exchange of best practices, new approaches, and additional resources. Supervisors can benefit from learning how other countries support professionals working with trauma survivors. They can also explore the use of advanced technologies for psychosocial support.

Almakky (2023) highlights the importance of international organisations in crises. These organisations provide valuable resources, training materials, and experienced professionals to strengthen supervision efforts. Joint research initiatives can also improve crisis supervision by analysing the effectiveness of different methods. Such studies help identify the best strategies and tools for supporting professionals in extreme conditions.

To remain effective, supervision in crises must adapt to new challenges. Innovations in supervision methods, specialised training, and international cooperation can improve support for professionals working under difficult conditions. Still, ensuring the mental well-being of supervisors is crucial, as their ability to help others depends on their emotional and professional stability.

10. Discussion

The findings of this study are significant, and the development of an interdisciplinary approach to supervision in crises shows promising potential. However, several limitations should be taken into account when interpreting the results.

First, the study involved a limited number of participants. This may affect the overall validity of the results. The sample is not statistically representative of the wider population of professionals working in crisis supervision. As a result, the findings cannot be broadly generalised to the entire professional community.

Second, the analysis does not account for gender differences in the perception of online supervision, the use of digital technologies, or trust in artificial intelligence (AI). Since gender roles can influence communication styles and coping strategies, future research should aim for a balanced representation of both genders.

Third, while the topic is relevant internationally, most of the respondents are from a specific region – likely Ukraine or neighbouring countries. This limits the international applicability of the results. Cultural, institutional, and technological differences may affect how online supervision and AI are perceived. To increase global relevance, future studies should involve participants from a wider range of countries and contexts.

Fourth, the results reflect attitudes towards AI at its current stage of development. As technology evolves rapidly, trust in AI and its use in supervision may change shortly. Therefore, conclusions about the potential of AI should be reviewed and updated regularly.

Fifth, the findings rely on self-reported data, which may be influenced by social desirability bias and other cognitive distortions. For example, respondents may underestimate their dependence on digital media or overestimate their readiness to use new technologies.

Finally, even though participants highlighted the importance of ethical issues such as confidentiality and empathy, this study does not include a detailed analysis of ethical risks related to AI use in supervision. This is a complex area that requires separate and more in-depth research.

This article introduces significant innovations in education and clinical practice through an interdisciplinary analysis of supervision in wartime conditions. It combines neuropsychological assessment with the unique challenges of crisis settings – a topic that, until now, has received limited attention in global literature.

The article presents adapted models of supervision. These models are applicable not only in Ukraine but also in other countries affected by war, humanitarian crises, or environmental disasters. It is the first scientific work to examine how digital technologies influence supervisory interactions. The study also explores how artificial intelligence affects the quality of these interactions in conditions of limited resources and high stress.

Emphasis is placed on addressing ethical challenges and developing professional resilience protocols. These protocols have the potential to be standardised for use in international supervision programmes.

The value of this work lies in its proposal of a universal approach to neuropsychological support for professionals working in emergency contexts. This approach can be integrated into training and continuing education programmes for psychologists, supervisors, educators, and humanitarian mission coordinators worldwide.

11. Conclusion

The article reveals that clinical case supervision during wartime plays a crucial role in psychiatric care, benefiting patients and professionals working under such conditions. Neuropsychological mechanisms, influenced by chronic stress and trauma, significantly alter the cognitive, emotional, and behavioural responses of patients. This requires supervisors to adjust their methods and strategies to accommodate these changes.

Supervision in wartime must address several unique challenges, including heightened stress, traumatic content, and the risk of clinician burnout. Ethical issues have also become important, especially concerns about controversy and maintaining the emotional well-being of supervisors. These aspects require careful analysis and modification of current practices.

Effective supervision strategies in wartime demand flexibility. This includes adapting methods to the specific needs of client cases and choosing the appropriate format for supervision, whether individual, group, or online. The use of digital platforms and advanced technologies, such as artificial intelligence, offers new opportunities for supporting professionals in these extreme circumstances.

Despite significant progress in this field, challenges remain. These include limited resources, insufficient training for some supervisors in crises, and the need for more research to improve the integration of technology into supervision practices. Nevertheless, given the high demands placed on supervisors in wartime, it is essential to continue developing supervision methods focused on neuropsychology. These methods should place a strong emphasis on the emotional well-being of clinicians and ensure the provision of quality support to patients in traumatic situations.

Accordingly, the article confirms the need for a comprehensive approach to supervision in wartime. This approach should combine neuropsychological strategies with the effective use of innovative technologies to provide high-level support and maintain professionalism in difficult conditions.

References

- Almakky, R. (2023). The role of international organisations in the development of international law: An analytical assessment of the United Nations. *Law and World*, 9(28), 40–66. <https://doi.org/10.36475/9.4.4>
- Almendingen, K., Skotheim, T., & Magnus, E. M. (2023). Supervisors' perspectives on online interprofessional supervision: Results from a mixed-methods longitudinal cross-sectional study. *Education Sciences*, 13(1), 34. <https://doi.org/10.3390/educsci13010034>
- Balfour, M. E., & Zeller, S. L. (2023). Community-based crisis services, specialized crisis facilities, and partnerships with law enforcement. *Focus*, 21(1), 18–27. <https://doi.org/10.1176/appi.focus.20220074>
- Baum, N. (2012a). 'Emergency routine': The experience of professionals in a shared traumatic reality of war. *The British Journal of Social Work*, 42(3), 424–442. <https://doi.org/10.1093/bjsw/bcr032>
- Baum, N. (2012b). Field supervision in countries ridden by armed conflict. *International Social Work*, 55(5), 704–719. <https://doi.org/10.1177/0020872812447635>
- Blevins, C. A., Weathers, F. W., Davis, M. T., Witte, T. K., & Domino, J. L. (2015). The posttraumatic stress disorder checklist for DSM-5 (PCL-5): Development and initial psychometric evaluation. *Journal of Traumatic Stress*, 28(6), 489–498. <https://doi.org/10.1002/jts.22059>
- Busse, S. (2009). Supervision between critical reflection and practical action. *Journal of Social Work Practice*, 23(2), 159–173. <https://doi.org/10.1080/02650530902923700>
- Center for Substance Abuse Treatment (US). (2014). Trauma-informed care in behavioral health services. *Substance Abuse and Mental Health Services Administration (US)*. <https://pubmed.ncbi.nlm.nih.gov/24901203/>
- Garibay, O., Winslow, B., Andolina, S., Antona, M., Bodenschatz, A., Coursaris, C., Falco, G., Fiore, S. M., Garibay, I., Grieman, K., Havens, J. C., Jirotko, M., Kacorri, H., Karwowski, W., Kider, J., Konstan, J., Koon, S., Lopez-Gonzalez, M., Maifeld-Carucci, I., McGregor, S., Salvendy, G., Shneiderman, B., Stephanidis, C., Strobel, C., Ten Holter, C., & Xu, W. (2023). Six human-centered artificial intelligence grand challenges. *International Journal of Human – Computer Interaction*, 39(3), 391–437. <https://doi.org/10.1080/10447318.2022.2153320>
- Girotti, M., Bulin, S. E., & Carreno, F. R. (2024). Effects of chronic stress on cognitive function – From neurobiology to intervention. *Neurobiology of Stress*, 33, 100670. <https://doi.org/10.1016/j.ynstr.2024.100670>
- Jones, E. (2004). War and the practice of psychotherapy: The UK experience 1939-1960. *Medical History*, 48(4), 493–510. <https://doi.org/10.1017/s0025727300007985>
- Kokudo, N., & Sugiyama, H. (2020). Call for international cooperation and collaboration to effectively tackle the COVID-19 pandemic. *Global Health & Medicine*, 2(2), 60–62. <https://doi.org/10.35772/ghm.2020.01019>
- Kredlow, A. M., Fenster, R. J., Laurent, E. S., Ressler, K. J., & Phelps, E. A. (2022). Prefrontal cortex, amygdala, and threat processing: Implications for PTSD. *Neuropsychopharmacology: Official Publication of the American College of Neuropsychopharmacology*, 47(1), 247–259. <https://doi.org/10.1038/s41386-021-01155-7>
- Mardanshahi, A., Sreekumar, A., Yang, X., Barman, S. K., & Chronopoulos, D. (2025). Sensing techniques for structural health monitoring: A state-of-the-art review on performance criteria and new-generation technologies. *Sensors*, 25(5), 1424. <https://doi.org/10.3390/s25051424>
- McMahon, A., Jennings, C., & O'Brien, G. (2022). A naturalistic, observational study of the Seven-Eyed model of supervision. *The Clinical Supervisor*, 41(1), 47–69. <https://doi.org/10.1080/07325223.2021.2022060>
- Nielsen, T. R., Franzen, S., Watermeyer, T., Jiang, J., Calia, C., Kjærgaard, D., Bothe, S., & Mukadam, N. (2024). Interpreter-mediated neuropsychological assessment: Clinical

- considerations and recommendations from the European Consortium on cross-cultural neuropsychology (ECCroN). *The Clinical Neuropsychologist*, 38(8), 1775–1805. <https://doi.org/10.1080/13854046.2024.2335113>
- Nuralieva, N., Chang, M., Huang, L., & Ts, S. (2024). Neurocognitive remediation therapy: A promising approach to enhance cognition in community living pilots with depression and anxiety. *Psychology Research and Behavior Management*, 17, 2919–2939. <https://doi.org/10.2147/PRBM.S446634>
- OECD. (2015). The changing face of strategic crisis management. OECD Reviews of Risk Management Policies. *OECD Publishing*. <http://dx.doi.org/10.1787/9789264249127-en>
- Prasko, J., Ociskova, M., Vanek, J., Burkauskas, J., Slepecky, M., Bite, I., Krone, I., Sollar, T., & Juskiene, A. (2022). Managing transference and countertransference in cognitive behavioral supervision: Theoretical framework and clinical application. *Psychology Research and Behavior Management*, 15, 2129–2155. <https://doi.org/10.2147/PRBM.S369294>
- Shah, S. B., Afshan, G., Mirani, M. A., & Solangi, R. (2023). Effect of supervisors' stress on subordinates' unethical behavior: Moderating role of managers' despotic leadership. *Management Research Review*, 46(1), 148–171. <https://doi.org/10.1108/MRR-06-2021-0476>
- Stoltenberg, C. D., & McNeill, B. W. (2012). Supervision: Research, models, and competence. N. A. Fouad, J. A. Carter, & L. M. Subich (Eds.), *APA handbook of counseling psychology*, 1. Theories, research, and methods, 295–327. *American Psychological Association*. <https://doi.org/10.1037/13754-011>
- Vashchenko, I. V., & Ivanenko, B. B. (2018). Psykholohichni resursy osobystosti v podolanni skladnykh zhyttievykh sytuatsii. *Problemy suchasnoi psykholohii*, 40, 33–49. <https://doi.org/10.32626/2227-6246.2018-40.33-49>
- Wang, D., & Gupta, V. (2023). Crisis intervention. *StatPearls Publishing*. <https://pubmed.ncbi.nlm.nih.gov/32644507/>
- Watkins, L. E., Sprang, K. R., & Rothbaum, B. O. (2018). Treating PTSD: A review of evidence-based psychotherapy interventions. *Frontiers in Behavioral Neuroscience*, 12, 258. <https://doi.org/10.3389/fnbeh.2018.00258>