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# Digital Engagement Patterns of Persons with War-Related Disabilities in Ukraine: A Mixed-Methods Study of Rehabilitation Tool Use

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**Abstract** This paper analyses the way war-related disabled people in Ukraine use digital rehabilitation devices by relying on three complementary data sources, such as diary self-observation (n = 50), in-depth interviews (n = 12) and digital footprint analytics on a state support platform (n = 117). The results show the similarity in behavioural patterns among datasets, as well as the inclination towards personalised modes such as online consultations and information browsing and a lack of use of automated services because of the emotional reluctance, complexity of interface and doubts in digital interaction. Interview data indicate the importance of psychological safety, trust and perceived predictability in digital use and metrics of digital footprint indicate that there are often problems with registration and short-term engagement with instructional content. The research defines the main usability and cognitive obstacles that restrict successful digital application and presents user-oriented guidelines of enhancing the development of rehabilitation instruments. These findings add to a more subtle comprehension of the digital rehabilitation practice in wartime and the necessity of the further studies based on larger and more diverse samples.

**Key Words** Digital Rehabilitation, War-Related Disability, Mixed-Methods Study, User Behaviour, Digital Engagement, Ukraine, Tele-Rehabilitation

## INTRODUCTION

The entire-scale war in Ukraine has contributed greatly to the number of citizens with war-related diseases and has hastened the transition to the digitally mediated type of rehabilitation in the medical, psychological and social fields. Tele-consultations, exercise modules that are based on video, informational platforms, automated support systems and hybrid communication interfaces have turned into an indispensable part of service delivery in the contexts of mobility limitations, damage to infrastructure and psychological susceptibility. The term innovative methods that are used in the context of this study do not mean the technological novelty but user-centred digital practices can be applied to allow individuals with disabilities remote access, 24-7 support and personalised engagement during times of war. In spite of the widespread marketing of digital technologies as an accessibility barrier-overcoming tool, very little is told about the behavior of users who actually interrelate to them, face emotional and cognitive barriers and influence the efficiency of digital rehabilitation services through their behavioural patterns.

The contemporary literature has stressed the importance of digital solutions, interdisciplinary coordination and psychosocial assistance of the disabled in the armed conflicts situations but there is little scholarly empirical research on the practical interaction of the user. Past research indicates the problem of digital inequality, complexity of interfaces and lack of accommodations to users with heterogeneous functional abilities but lacks works that examine behavioural data and subjective experience simultaneously. Such a gap is especially applicable to Ukraine, where digitalisation is advancing at a very fast pace throughout the war but where few findings are made on whether or not actual user behaviour is in line with the desired functionality of digital tools.

In order to resolve these questions, the current research paper discusses the ways persons with war-related disabilities use digital rehabilitation services by combining three empirical sources including diary self-observations (n = 50), in-depth interviews (n = 12) and digital footprint data available in one of the state rehabilitation sites (n = 117). It is proposed to discover behavioural patterns,

emotional and cognitive barriers and usability issues that influence digital participation and add to a more grounded concept of how rehabilitation technologies can be applied during crisis conditions. We do not consider the general efficacy of digital tools, which is a task that must be performed with longitudinal and outcome based indicators, which is not within the framework of the current study but we are going to describe user practices and limitations that determine the perceived usefulness and accessibility of digital rehabilitation services. This method offers an empirically realistic description of digital engagement and preconditions the further studies of the evaluation mechanisms and long-term monitoring.

### Objectives

The proposed study will focus on analyzing how war veterans with disabilities use digital rehabilitation technologies, incorporating the diary self-observation, in-depth interview and digital footprints analytics. In addition to the description of usage patterns, the goals are to find out the mechanisms of digital engagement, examine emotional and cognitive barriers implying the inability to use digital tools effectively and compare results based on qualitative and behavioural data to identify the uniformity or inconsistencies in user behaviour. In order to frame this analytical interest, the research questions that will be answered in the study include:

- What are the behavioural patterns of online activity based on the data collected in the diary, interview and digital footprint?
- What are the emotional, cognitive and usability constraints affecting the user using digital rehabilitation tools?
- What is the relationship between self-reported behaviours and actual digital traces that are recorded by the rehabilitation platform?
- So how does personalised and automated digital formats differ in terms of user acceptance and stability of interaction?

These research questions and objectives give a framework of analytical consistency in interpreting the mixed methods data and give the scope of the study an appropriate fit to the methodology design.

## LITERATURE REVIEW

In the context of the full-scale war in Ukraine, social rehabilitation of persons with disabilities has attracted increased attention from scholars and social work practitioners. Recent research highlights both general concepts of rehabilitation and specific tools developed with combat experience, psychosocial needs and inclusion in mind. The studies by Lekholetova *et al.* [1], Zaviršek and Cox [2] and Klymenko *et al.* [3] emphasize the need for a comprehensive approach to working with military veterans, including those with post-traumatic stress disorder. Considerable attention is paid to TV rehabilitation, digital interventions and gaming platforms as a means of supporting children and youth with disabilities in war [4,5]. The role of digital solutions is also considered in the context of psychological first aid and support for social workers [6,7]. The studies by Druz *et al.* [8] and Pustovoyt *et al.* [9] reveal medical and psychological mechanisms to support military personnel returning to civilian life, with a focus on phased reintegration.

Some publications focus on strengthening social services for children with disabilities and the importance of immediate action [10,11]. Other studies, such as Castle *et al.* [12] and Armitage [13], focus on rehabilitation potential through participation in sports initiatives and the introduction of assistive technology. When combined, these results suggest that technological solutions have grown but the user experience is also not even because of psychological stress, digital inequality and inconsistent institutional support. The concept presented in the literature comes together to exhibit that the adoption of digital rehabilitation tools depends on behavioural patterns but not technology, which explains the significance of studying real user usage, the gap that this study addresses in particular. A look at the institutional level of rehabilitation services is presented in Klos *et al.* [14] and Recovery [15], which describe the experience of higher education institutions and regional rehabilitation centers. The issue of mental health of survivors of traumatic events is addressed in the works of Pinchuk *et al.* [16], Kiro *et al.* [17] and Predko *et al.* [18], focusing on the effectiveness of interventions aimed at developing stress resistance. A significant contribution to the conceptualization of reintegration was made by Nestulia [19] and the United Nations Development Program [20], analyzing policies for returning to active life.

There should also be noted the significant international expertise on social work in armed conflict [21,22], which allows us to correlate Ukrainian experience with global challenges. In this context, the study by Gutenbrunner *et al.* [23] is relevant, offering an institutional vision of responding to global challenges in the field of disability. Thus, modern scientific thought reflects shifts in approaches to social rehabilitation, demonstrating both local initiatives and their alignment with international standards [24,25]. The theoretical background of the idea of social support in wartime is widely available but it is a rare occasion that such publications discuss the interaction between people with disabilities and digital rehabilitation tools. This gap indicates the relevance of empirical research that can study the user practices but not only institutional frameworks.

An important place in the current scientific discourse is occupied by the coverage of the direct experience of recipients of social services in war, in particular users of social work [21], which allows for better adaptation of interventions to real needs. The work of Fellegi *et al.* [25], although related to the global context, emphasizes the gender challenges that persist in the field of rehabilitation. The study by Lawry *et al.* [22] highlights a qualitative analysis of veterans' requests for services, which creates a basis for targeted improvement of the assistance system. Practical

aspects of rehabilitation programs and cross- sectoral cooperation are presented in the report Recovery [15], which demonstrates the creation of local centers as a form of direct response to community demand. Armitage [13] emphasizes the importance of assistive rehabilitation technologies, which is becoming increasingly relevant against the background of limited access to offline services. The issue of integrating state policies and strategies for the development of social work in the context of military instability is also highlighted in the United Nations Development Program [20] and the World Bank Group [11], which emphasizes the need to formulate inclusion policies as a pillar of social stability.

Thus, the existing body of research shows a growing scientific interest in innovative forms of social rehabilitation of persons with war-related disabilities, including psychosocial support, digital technologies, multidisciplinary models of care and the involvement of local communities in the reintegration process. In all these studies, one can note three significant themes: the growing dependence on digital technologies because of disruptions in the war; ongoing emotional, cognitive and technical barriers to their implementation and the necessity of user-centred rehabilitation models that would integrate technological solutions with psychosocial support. The themes show that the success of rehabilitation is not only dependent on the presence of digital tools but also their usability capacity and willingness of users to utilize them. However, a number of important issues remain unresolved. First, there is a lack of established mechanisms for monitoring the effectiveness of rehabilitation programs in the face of constant threat. Secondly, the long-term impact of war trauma on the quality of life of persons with disabilities and their ability to find sustainable employment has not been sufficiently studied. The literature reviewed is compatible in its assertions of constraints in the real user behaviour, emotional barrier and discrepancies between self-reported and actual digital practices. Such gaps explain why a multi-faceted approach that incorporates diaries, interviews and digital footprint analytics should be used to provide a multi-perspective analysis of how people with disabilities caused by the war interact with the digital rehabilitation tools.

## METHODS

### Methodology

This study was designed as a mixed-methods project integrating quantitative diary self-observations, qualitative semi-structured interviews and digital footprint analytics. Data observation involved three concerted processes that were executed in the same period of observation. The participants had to fill in a 7-day digital diary of self-observation (Appendix A); the selected respondents had semi-structured interviews to discuss the diary-recorded behaviours; triangulation of the anonymised digital trace data were gained through the Social Support Online platform. All procedures were performed with the same principles of recruitment and data protection. This combination allowed for the simultaneous examination of self-reported experiences, subjective interpretations and objective behavioural patterns in the use of digital rehabilitation tools by persons with war-related disabilities.

### Sampling and Recruitment

A stratified purposive sampling strategy was applied to ensure variation by age, gender, type of disability and regional distribution. In this section, the sampling procedures were brought together to eliminate the problem of division throughout the manuscript. All data about recruitment, eligibility, data verification of digital users and data composition are reported here to guarantee consistency in the structure and complete methodological transparency. The final sample included 50 participants in the diary study, 12 participants in the interview component and 117 anonymised digital footprint users. Recruitment was conducted through social service agencies, professional associations, rehabilitation NGOs and online communities that work with persons with disabilities. Participation was voluntary. Each recruiting option was assigned an established subgroup target: Social services recruited those who were in the rehabilitation process; professional associations recruited those with disability certificates; NGO recruited those that had psychosocial disabilities and the online communities recruited those who were digitally active and had limited mobility. This was a multi-channel method that enhanced inclusiveness and minimized sampling bias. Respondents received a study description and provided informed consent prior to data collection. The research objectives, risks and data use were clarified to all the participants in writing and verbally in advance. Diary and interview consent were recorded digitally. The data on the digital footprint was given as anonymised system logs via an official agreement with the department of social protection in the region and did not include any personally identifiable information. The ethics board at Dragomanov Ukrainian State University approved all the procedures (protocol number on request). Ethical approval for the study was obtained from the institutional review board of the Dragomanov Ukrainian State University (protocol number available upon request) and procedures complied with standards for research involving vulnerable groups. The sampling size has been calculated according to the principles of the methodological feasibility and saturation. Daily digital behaviour variability was adequate as the diary cohort was made up of 50 participants. The 12 participants interviewed were sufficient to reach thematic saturation where there was repetitive appearance of the underlying behavioural and emotional patterns. The dataset of digital footprint of 117 users reflected the entire category of verified active users of the Social Support Online platform over the course of observation.

The order of sample construction among all three parts was based on the single stream: all 50 diary subjects were the starting pool; 12 of them were further invited to interviews due to the difference in demographic factors and behaviours recorded in the diaries; at the same time, another data set of 117 confirmed users of the Social Support Online

platform was taken out to analyse the digital footprint. This design provided the methodological consistency of the components and in representation of the empirically unique character of each dataset.

**Diary Self-Observation Procedure**

The quantitative component consisted of a 7 day structured diary in which 50 respondents documented each instance of accessing a digital rehabilitation-related service. The diary captured: Type of platform, purpose of use, session duration, perceived usefulness and encountered difficulties (technical, cognitive, emotional). The form was provided in a unified digital format (Appendix A). No analytical indicators (e.g., averages, proportions) were computed at this point; the only task at this point was to accumulate diaries as raw behavioural records, which were processed during the analytical stage.

**Interview Design and Protocol**

Twelve respondents from the diary stage were invited to participate in follow-up semi-structured interviews aimed at exploring motivations, emotional and cognitive barriers, perceived trust in digital platforms and expectations of future services. The interview guide contained open-ended questions covering the user experience, interface challenges, psychological reactions during digital interactions and opinions on existing rehabilitation tools. The entire interview guide is placed in Appendix B, with the blocks of questions on motivations, barriers, trust, expectations and emotionally sensitive triggers. Interviewers had a standardized guideline on interview formality, which included introduction statement, confidentiality statements, probing techniques and closure. Interviews lasted 30-55 minutes, were fully transcribed, anonymised and analysed using reflexive thematic analysis following Braun and Clarke. Coding was conducted manually in two cycles: initial open coding and theme consolidation. Inter-coder agreement was ensured through joint review sessions.

**Digital Footprint Analytics**

The third data set included anonymised behavioural data in the digital platform Social Support Online a governmental service that offers online consultations, application registration, educational resources, reminders and updates of information to persons with disabilities. The 117 platform users were verified in the regional Department of Social Protection before data transfer. Only those accounts that had received the officially proven disability status and at least one interaction with the platform over the course of three months of observation were considered. Incomplete registeries, duplicate accounts or the lack of demographic metadata were removed out of the dataset to guarantee the reliability of digital traces. Information was supplied by one of the regional Departments of Social Protection through a formal cooperation agreement. Variables were: Rate of sessions, session duration, the proportion of repeated logins, completion of registration processes, amount of time spent on the instructional pages and use of content modules. The full variable dictionary and extraction protocol are documented in Appendix C, enabling verification of the digital metrics and ensuring reproducibility of the analytic process. The analysis of digital traces was conducted in accordance with the main parameters of web-analytics and the further clustering of the most common patterns of behaviour was done in the form of: quick login:logout without registering an account, rare crisis-induced activity and repeated stable use. No personal identifiable information was accessed or stored. Even though the data gathering processes had varied methods, all the three streams were aligned both in time and ideologies. The daily behaviour was captured in diary entries, the interviews were able to give the behaviours an interpretative quality and the digital traces provided objective behavioural indicators. This combined design allowed a mutual complement of each approach as opposed to each one operating as independent databank.

**Data Analysis**

**Quantitative Analysis:** Descriptive statistics (frequency distribution, means and variability of sessions) were used to process the diary data. The independent-sample t-tests and one-way ANOVA were used to examine the possibility of differences between age group and gender groups with respect to digital engagement but the small sample size made the results to be presented as exploratory and not conclusive. All the quantitative analyses were done using SPSS 29.

**Qualitative Analysis**

Reflexive thematic analysis was used to code the interview transcripts. Three over-themes were established, namely: (1) Emotional, hesitation and fear of making mistakes, (2) Interface, uncertainty and cognitive load and (3) Conditional trust and a preference to predictability. The Results contain selected participant excerpts (e.g., “I’m afraid to press the wrong button...). Two round coding were done with intercoder discussion as the only way to arrive at consensus.

**Digital Footprint Analysis**

The platform data were then summarised in terms of aggregated behavioural measures such as registration completion, session duration, recurrent logins and instructional-page engagement. These indicators were grouped together into three clusters of behaviour such as quick entry-exit, crisis-driven activity and stable repeated interaction. The results section includes summary tables of the digital metrics.

**Triangulation Procedure**

Triangulation was done through self-reports of diary entries, subjective qualitative themes and objective digital traces. The convergences (e.g., preferring personalised formats) and divergences (e.g., lack of agreement between autonomy reported in self-reports and avoidance behaviour reported in traces), were recorded down and subsequently discussed in the Discussion.

**Analytical Framework**

A convergent parallel mixed-methods design was used in order to integrate the three datasets. The quantitative metrics of a diary were initially analysed separately; qualitative

themes were created using interview transcripts; the pattern of digital traces was generated using the platform data. Triangulation of the three sources was subsequently conducted to discover convergences (e.g., preference of personalised services), divergences (e.g., differences between perceived and actual digital behaviour) and explanations of the situation, which were contextual (e.g., emotional hesitation, interface-related uncertainty). This guaranteed an overall interpretation of the user engagement that was not limited to self-reporting.

### Reliability and Validity Measures

To ensure the reliability of diary data, daily prompting and unified record-template were used. Member checking was conducted with three participants of the interviews to make qualitative themes more valid. The reliability of the digital footprints was by viewing the behavioural logs that were recorded within the system. Cross-dataset triangulation provided methodological strength and minimized bias in case of any particular source of data.

## RESULTS

This section presents the results of a mixed-methods study that included diary self-observation of 50 respondents, in-depth semi-structured interviews and analysis of digital footprints of rehabilitation service users. The results are presented according to the logic of the identified models of digital behavior, identified barriers and actual practices of using digital tools. Figure 1 and 2 only visualise the diary-based part of the research but the results of the interviews and digital footprint analytics are in text and tabular formats since these two data sets are multidimensional. This method maintains the interpretative clarity and at the same time,

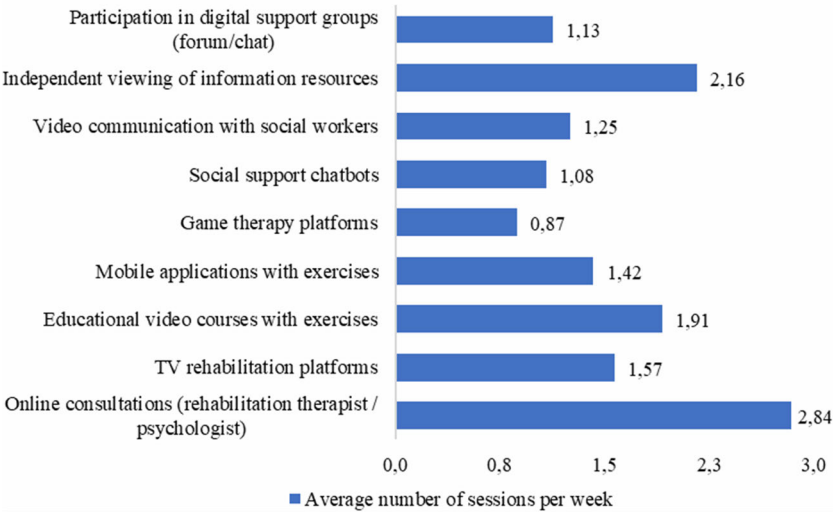


Figure 1: Average Number of Sessions per Week by Type of Digital Rehabilitation Service (n = 50)
Source: Compiled by the Author Based on his Own Survey

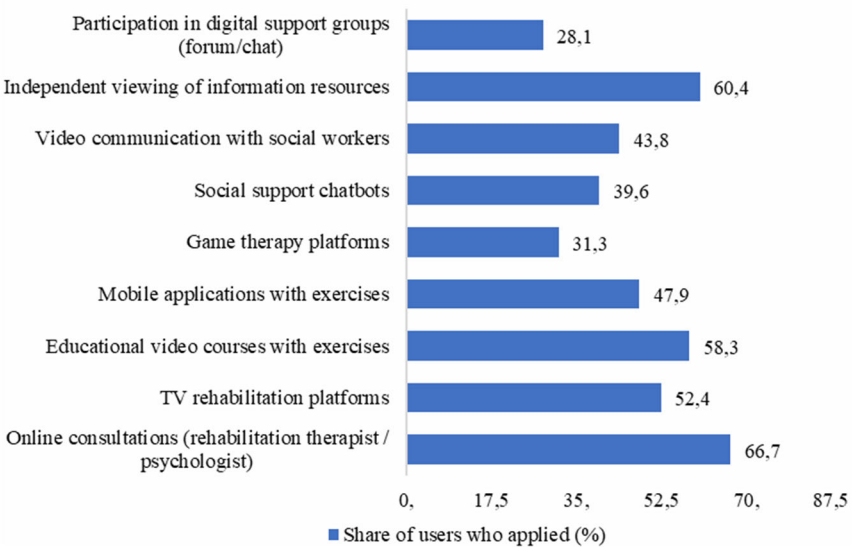


Figure 2: Share of Users Who used Different Types of Digital Rehabilitation Services (%)
Source: Compiled by the Author Based on his Own Survey

all three empirical instruments, self-reported behavior, qualitative tales and objective digital traces are presented in the full Results section. In the context of a full-scale war in Ukraine, social rehabilitation of persons with disabilities is gaining new importance, as the scale of trauma, both physical and psychological, requires the prompt implementation of modern innovative approaches. In particular, digital interventions, TV rehabilitation and multidisciplinary support models are becoming increasingly popular. These approaches not only allow responding to the challenges of limited access to offline services but also contribute to the personalization of assistance adapted to the context of the military conflict and the specifics of disability. The introduction of digital tools makes it possible to reach a wide range of service recipients, including people in areas with limited infrastructure or temporary isolation due to security factors. For example, the use of mobile applications, online platforms and specialized gaming solutions can not only support the rehabilitation process but also reduce the level of social isolation among people with war-related disabilities. The study by Kushnir *et al.* [5] shows a positive perception of TV rehabilitation with elements of serious games among children with disabilities, which confirms the effectiveness of innovative models of engagement in the recovery process.

It is worth noting the importance of tele-rehabilitation platforms that allow for remote consultations, psychotherapy sessions and exercises aimed at restoring motor or cognitive functions. This approach not only facilitates the continuity of services in crisis situations but also minimizes the time and resources required to transport patients. According to Frankova and Sijbrandij [4], digital interventions have proven effective in preventing common mental disorders in war-affected populations, especially when it comes to rapid first aid. This experience is consistent with the findings of Shraga *et al.* [6], which analyzed the effectiveness of international telephone support aimed at stabilizing the psycho-emotional state of Ukrainian civilians.

Another promising practice is the introduction of multidisciplinary support models that combine medical, psychological, social and educational components. In such models, not only social workers play a key role but also doctors, psychologists, rehabilitation specialists, pedagogical specialists and representatives of NGOs. Such integration contributes to a holistic approach to rehabilitation, where each component complements the other, forming a flexible system of care adapted to the needs of each individual client. The study by Klymenko *et al.* [3] indicates that effective psychosocial rehabilitation of military personnel with PTSD is impossible without the involvement of multidisciplinary teams working with veterans in a «one-stop shop» format. This is especially true in the context of a shortage of specialists and limited access to quality services in many regions.

A key factor in the success of such models is support from institutions and local governments. For example, as noted in the Recovery [15] analytical report, the creation of a rehabilitation center in Ternopil is an example of an effective response to a community request by organizing an infrastructure that combines different types of services, from medical to social. In turn, the study by Klos *et al.* [14] emphasizes the role of higher education institutions in the process of comprehensive rehabilitation through education, resocialization and the creation of an inclusive educational environment. Such institutional practice is in line with the principles of an integrated approach supported by international organizations, in particular in the documents of the World Bank Group [11] and the United Nations Development Program [20], which emphasize the need to develop inclusion policies as a basis for social sustainability.

Thus, innovative approaches to the social rehabilitation of persons with war-related disabilities in Ukraine are characterized by flexibility, interdisciplinarity and a high degree of adaptability to wartime conditions. Their effectiveness largely depends on the integration of digital technologies, the expansion of tele-rehabilitation practices and institutional support for multidisciplinary teams. However, to ensure a long-term effect, it is necessary to continue developing mechanisms for evaluating the effectiveness of interventions and deepen research on the social impact of these approaches on the quality of life of service recipients.

In the process of social reintegration of war veterans, educational and medical institutions play a key role, providing a platform for comprehensive support, from professional retraining to psychological assistance. Table 1-3 are not primary empirical results but are analytical syntheses that were created to put the empirical results into context. They are designed to chart institutional, demographic and monitoring aspects described in the qualitative content, as opposed to reporting new statistics. These conceptual tables would be reported separately in case of misinterpretation of the empirical data found in the diaries, interviews and digital footprints. In today's Ukraine, these institutions are becoming centers of stabilization and adaptation, creating spaces of safety, learning, interaction and treatment. Higher education institutions perform not only the functions of professional retraining for veterans but also implement inclusive educational programs that take into account the special needs of people with disabilities caused by combat. Medical institutions, for their part, are not limited to providing classical services; they are actively implementing interdisciplinary rehabilitation practices aimed at returning veterans to full social life. In this context, coordination between these two sectors becomes crucial for the formation of an effective support system. Table 1 presents

Table 1: The Role of Educational and Medical Institutions in the Social Reintegration of Veterans and Their Families

| Category of institutions | Main functions | Forms of support | Target groups | Examples of practices |
|---|---|---|---|---|
| Educational institutions | Professional retraining, resocialization, inclusion | Individual educational routes, mentoring, support inclusive education | Veterans, family members, people with disabilities | HEI programs for veterans [14], learning platforms |
| Medical institutions | Medical, psychological, social rehabilitation | Comprehensive treatment programs, PTSD support, TV rehabilitation | Veterans with physical/mental injuries, children of military personnel | Recovery centers [15], PTSD therapy [3,8] |
| Joint initiatives | Inter-sectoral cooperation, integration of services | Single case managers, mobile teams, institutional partnerships | Veterans with complex needs, families | Regional projects, support from UNDP, World Bank [11,20] |

Source: Created by the Author on the Basis of Klymenko *et al.* [3]; Druz *et al.* [8]; World Bank Group [11]; Klos *et al.* [14]; Recovery [15]; United Nations Development Program [20]

Table 2: Gender and Age Characteristics of Requests for Social Services Among Persons with War-Related Disabilities

| Category | Main types of requests | Specific needs | Barriers to access | Examples of research |
|---|---|---|---|---|
| Women with disabilities | Psychosocial support, safety, care services | Protection from violence, maternity support, resocialization | Stigmatization, double vulnerability | Lawry *et al.* [22]; Fellegi *et al.* [25] |
| Men with disabilities | Vocational rehabilitation, physiotherapy, PTSD services | Restoration of working capacity, self-realization | Shame of vulnerability, fear of discrimination | Klymenko *et al.* [3]; Druz *et al.* [8] |
| Children and adolescents | Play therapy, inclusive education, TV rehabilitation | Cognitive development, family support, stability | Learning disabilities, psychological maladjustment | Kushnir *et al.* [5]; Slozanska *et al.* [10] |
| Older persons | Medical care, support, housing services | Social isolation, care, financial support | Lack of mobility, digital divide | United Nations Development Program [20]; Lawry *et al.* [22] |
| Youth (18-35 years old) | Education, employment, mentoring | Independent living, inclusive initiatives | Distrust of the system, instability | Slozanska *et al.* [10]; World Bank Group [11] |

Source: Created by the Author on the Basis of Klymenko *et al.* [3]; Kushnir *et al.* [5]; Druz *et al.* [8]; Slozanska *et al.* [10]; World Bank Group [11]; United Nations Development Program [20]; Lawry *et al.* [22]; Fellegi *et al.* [25]

Table 3: Summary of Key Digital Footprint Indicators (n = 117)

| Indicator | Value |
|---|---|
| Mean session duration | 18.4 min |
| Repeat login rate | 47% |
| Registration not completed on first attempt | 62% |
| Instructional page engagement (<10 sec) | 41% |

Source: Compiled by the Author Based on Platform Analytics

a comparative analysis of the functions of educational and medical institutions in the process of social reintegration of veterans.

Thus, both educational and medical institutions are crucial in the process of social reintegration of veterans and their families. Educational institutions facilitate the return to active professional life by providing adaptive educational models, while medical institutions form the basis for physical and psycho-emotional recovery. Models of intersectoral cooperation that combine the resources of both types of institutions and focus on an individualized approach are particularly effective. In the future, further improvement of such practices should be based on systematic monitoring of their effectiveness and involvement of local communities in the support process.

In the context of the armed conflict in Ukraine, there is a growing need for a detailed understanding of the structural and substantive features of requests for social services among persons with disabilities. The gender and age structure of this population is critical for building effective models of support. Women, men, children, youth and the elderly with disabilities face different challenges in terms of both access to and content of assistance. Studies show that women's needs are often related to caring for family members and increased vulnerability to gender-based violence, while men are more likely to have requests for vocational reintegration or specialized medical care after participation in hostilities [22,25]. Children and youth with disabilities need additional pedagogical and psychological support, including through digital technologies. Table 2 presents a generalized analysis of gender and age differences in requests for social services among persons with war-related disabilities.

An analysis of gender and age differences in requests for social services reveals a significant need for a differentiated approach to rehabilitation and support for persons with war-related disabilities. Women need services with a focus on safety and care, men need services to restore physical and psychological capacities, young people need services to promote developmental prospects and children and the elderly need services to promote stability and adaptation. Social work policymakers and practitioners should take these specificities into account when designing intervention programs, increasing the level of individualization of services and taking into account barriers to access to care in different demographic groups.

The war in Ukraine has created unprecedented challenges for the rehabilitation system, especially in terms of accessibility of services for people with disabilities in the face of constant risks, population mobility and infrastructure

destruction. In this context, digital tools-including smart technologies, online services, TV rehabilitation platforms and game systems with therapy elements-are beginning to play a key role in the transformation of social work. They create new formats of interaction, reduce barriers to communication and provide access to psychosocial and educational support regardless of the person's location. Research confirms that such solutions are positively perceived by target groups, especially youth, children and people with mobility impairments [4,5,13]. However, the real potential of these tools requires in-depth empirical verification, in particular, taking into account the subjective assessments of users. That is why the author's study was conducted (Appendix A).

The methodological basis of this study is based on the mixed methods paradigm, which involves the integration of quantitative and qualitative approaches to better understand the experiences of persons with war-related disabilities in using digital tools in the rehabilitation process. This combination allows us to overcome the limitations of one-dimensional analysis and cover both individual perceptions of services and behavioral patterns in the digital environment. The total sample was 50 people, of whom 38 had experience using digital rehabilitation services and the rest showed potential interest in them but did not realize this interest in practice. The main recruitment channels were professional associations, online communities and social services that have contact with the target group.

The quantitative component of the study was implemented in the form of a diary self-observation method, in which 50 respondents recorded all cases of using rehabilitation-oriented digital services in a specially designed digital template for 7 days (Appendix A). The purpose of the login, session duration, usability, technical or psychological barriers and an indicative self-assessment of the usefulness of the service for their own condition were recorded. This approach made it possible to identify behavioral patterns of digital participation and their recurrence in different social groups. In order to provide a clear distinction between the empirical information and its interpretation, only primary data were reported in the following subsections, that is, the diary study, interview transcript and digital footprint analytics. Explanations or theoretical contextualizations based on literature are clearly avoided at this point and are included in the discussion section only. This design follows the principles of transparency of the methods used in mixed-method research and enables the Results section to display the empirical results without conceptual overlap.

The selection was balanced: 3 interviews with women, 3 with men, 2 with young people (under 25), 2 with people aged 60+ and 2 with representatives of groups with psycho-emotional consequences of combat (PTSD). The interview questions covered the following topics: Motivation to use digital services; obstacles faced by respondents; level of trust in government and non-government platforms; expectations of services in the future; experience of interaction with social workers online and advice on how to improve existing digital practices. The interviews lasted from 30-55 minutes, were transcribed in full and analyzed using the thematic coding method according to Braun and Clarke, which allowed us to identify recurring semantic blocks (themes) and related subthemes in the respondents' statements. The criteria Inclusion criteria of diaries and interviews were: (1) Adult age (18+), (2) War-related disability identification, (3) Access to digital devices and the willingness to participate. The exclusion criteria were; acute psychiatric instability, the inability to fill the diary, irregular digital presence throughout the week of the study. In the case of digital footprints, it had to include confirmed disability status and an active account, whereas incomplete, duplicated or inactive accounts were not included.

A separate analytical block was the use of anonymized digital footprints from the state platform Social Support Online, which were provided as part of a project of cooperation with the regional social protection department. The analysis includes data from 117 active users with a confirmed status of a person with a disability who used the following services for 3 months: online consultations, application registration, viewing educational materials, mobile reminders, etc. The focus was on the frequency of use of functions, the average duration of sessions, the share of repeat logins, the time spent reviewing instructions and the level of completion of registration procedures. These digital patterns were superimposed on a socio - demographic questionnaire, which allowed us to identify typical behavioral scenarios (e.g., «quick login and logout without registration»; «occasional use only in times of crisis»; «regular activity with high interaction», etc.).

**Qualitative and Digital Footprint Findings**

The qualitative interviews demonstrated that there is a combination of common themes among the demographic groups. The respondents stressed that there were three prevailing impediments, including emotional hesitation to seek help online, interface complexity and an ingrained fear of mistake making in the process of digital registration. One of the participants mentioned: I always think that I may commit a mistake and lose my papers online. Another respondent said: When the system freezes, I would panic and not use it within days. These findings were corroborated by digital footprint analysis: 62% of users have not completed registration processes the first time and 41% spent less than 10 seconds on an instructional page, which means that there are significant usability issues. These findings show that a mixed-method design involving the combination of qualitative insights and behavioral digital information is of added value.

The integration of three sources of empirical data-diary entries, in-depth interviews and digital analytics-created a multidimensional framework for analyzing not only the perception of digital tools but also practical patterns of their use in real life. This approach allowed us to go beyond declarative assessments and reflect the complexity of the

experience of interaction between persons with disabilities and digital technologies in the context of rehabilitation. This is especially important in a time of war, when rapid changes in infrastructure, level of trust, access to the Internet and psychological resilience radically affect people's ability to interact with the digital environment.

This stage made it possible to determine the intensity of use of digital rehabilitation services, as well as the proportion of users who actually used each of them. The results are presented in Figure 1-2. The data show an uneven distribution of digital activity, where is dominated by online consultations, self-browsing of information resources and educational video courses, while gaming platforms, chatbots and forums remain less used (Figure 1).

According to the data, respondents most often sought online consultations with rehabilitation therapists or psychologists-an average of 2.84 sessions per week. The second most frequently used method was independent viewing of information resources, which was recorded 2.16 times per week. Educational video courses were used on average 1.91 times, TV rehabilitation platforms-1.57 times and mobile applications-1.42 times. The rates for other services were lower: Video communication with social workers-1.25, participation in digital support groups-1.13, chatbots-1.08 and gaming platforms-the least, only 0.87 times per week. This demonstrates the preference for personalized forms of digital rehabilitation over automated or group-based ones and also indicates a high demand for individual counseling as a form of sustainable support. Some of the participants said that automated tools, including chatbots, were more anxiety-inducing when the response was not provided promptly or necessarily. The data of the digital footprint also confirmed the extended average time of the session ( M = 18.4 minutes) and an increased percentage of repeat logins (47) in the users who used personalized services in comparison with users who used automated options as the primary ones.

As can be seen from the results, most of the respondents used online consultations with rehabilitation therapists or psychologists-66.7% of all respondents. The second most popular were educational video courses (58.3%) and independent viewing of information resources (60.4%). TV rehabilitation platforms were used by 52.4% of respondents and mobile applications by 47.9%. Video communication with social workers was less common (43.8%), as were chatbots (39.6%). Game-based therapy platforms were used much less frequently (only 31.3%) and digital support groups in the form of forums or chats were used the least (28.1%). These data demonstrate that individual and educational formats of digital interaction remain the most popular, while automated or group services need to be improved and increase the level of trust among the target audience (Figure 2). Another empirical data besides the diary data were used to support the mixed-methods findings. Interviews showed that there were five themes of repeatedly reoccurring themes, which included motivations to use digital, emotional barriers, trust in platforms, expectations of future tools and perceived gaps in the quality of services. Digital footprint analytics offered quantitative measures in the form of session duration, registration procedure completion and recurring logins which are reported in a different subsection below to supplement the self-reported diary data.

The task of systematic monitoring of the effectiveness of rehabilitation programs for people with disabilities is becoming particularly relevant. The absence of uniform evaluation criteria, fragmented data collection, limited interagency information exchange and imperfect digitalization of processes make it difficult not only to analyze program performance but also to formulate evidence-based policies. At the same time, the experience of individual initiatives shows the potential for implementing multi-component monitoring mechanisms that include both quantitative and qualitative indicators, digital data collection systems, feedback from service recipients and cross-sectoral coordination [11,20,22]. Table 4 presents proposals for improving the system of monitoring the effectiveness of rehabilitation programs in wartime and post-war settings, divided by levels of implementation and key elements.

The proposed system for improving monitoring covers four key levels-institutional, technological, cross-sectoral and analytical-and involves the integration of modern digital solutions with the practices of professional development, interagency cooperation and social partnership. Its implementation will allow not only to promptly identify shortcomings in the implementation of rehabilitation programs but also to formulate policies based on reliable and representative data. In wartime and post-war conditions, such a monitoring model can become a key to the sustainable functioning of the support system for persons with disabilities and its effective transformation in accordance with the real needs of society.

## DISCUSSION

The results of the study confirm the relevance of integrating digital tools into the system of social rehabilitation of persons with disabilities as a result of war. The data obtained indicate a high level of subjective effectiveness of such solutions as online consultat ions, TV rehabilitation and educational video courses. These results are consistent with the findings of Frankova and Sijbrandij [4], who proved the significant preventive effectiveness of digital interventions in working with high-risk groups. At the same time, the lower rating of mobile apps and gaming platforms in the survey can be explained by barriers to digital literacy, which is also documented by Slozanska *et al.* [10].

Nevertheless, the empirical results of this study demonstrate that there were a number of trends that had not been outlined in the literature. First, the interview information prove that emotional hesitation and the fear of errors in digital communication are highly influential factors that define user behaviour and determine the period of interaction and chances of returning to log in. Second, the measurements of digital footprint indicate that instructional

Table 4: Proposals for Improving the System of Monitoring the Effectiveness of Rehabilitation Programs in the War and Post-War Period

| Level of implementation | Key area of improvement | Specific proposals | Expected effect |
|---|---|---|---|
| Institutional | Unification of performance indicators | Develop a single national standard for assessing rehabilitation outcomes | Increase comparability and transparency |
| | Professional training of staff | Introduce monitoring modules into professional development programs | Increase the competence of specialists |
| Technological | Digitalization of data collection | Deploy a single IT platform for data collection, analysis and exchange | Efficiency, analytics, integration |
| | Implementation of self-reporting tools | Create a mobile application for service recipients' feedback | Increasing client-centeredness |
| Intersectoral | Coordination of monitoring entities | Establish interagency working groups at the level of communities and regions | Avoid duplication, exchange of experience |
| | Social participation and public control | Involvement of civil society organizations in program quality assessment | Increasing trust and social legitimacy |
| Analytical | Expanding analytical tools | Use of mixed methods: Statistics, surveys, case analysis | Comprehensive vision of results |
| | Systematization of data for decision-making | Publication of open reports with recommendations | Strengthening strategic planning |

Source: Created by the author based on World Bank Group [11], United Nations Development Program [20], Lawry *et al.* [22]

materials are not used extensively, which means that users do not find them useful or lack the mental capacity to access them when experiencing stress. These understandings build on previous understanding by shedding light on micro-level behavioural processes that are not reflected in earlier studies.

The triangulation of the three sets of data provided significant overlaps and disagreements. An example is that although the use of digital tools was said to be marked by confidence in navigation, digital footprints showed characterized cycles of engagements being short and fragmented. This gap was interpreted through interview narratives which revealed emotional hesitation and cognitive overload as contents between them. This integration between methods and methods enabled the establishment of a layered explanation of user behaviour and the opportunity to get beyond single-source constraints.

Another group of authors Shraga *et al.* [6] and Snoubar *et al.* [7] points to the strong potential of telephone and remote support in emergency situations, which is also confirmed in our study, especially in regions with limited access to offline services. At the same time, a number of studies [3,24] emphasize the need for multidisciplinary approaches to working with veterans, which is consistent with the findings of our analysis on the integrity of support.

Although the current literature offers a valuable framework, a number of findings presented in this research contradict or provide a twist to the existing assumptions. As an example, as opposed to previous research where a focus on rather technical barriers is emphasized, our data indicate that emotional and cognitive barriers, including fear of errors, uncertainty during registration and anxiety caused by delayed automated reactions have a more important role in determining digital engagement. This shows the importance of reconsidering the conceptual framework of digital rehabilitation based on the user psychology and not technological availability in one.

Compared to the study by Lawry *et al.* [22], which emphasizes institutional barriers and fragmentation of services, our study emphasizes the potential of mobile solutions, provided that they are properly supported by infrastructure and educational support. In particular, according to the survey, even with the availability of the Internet and devices, up to 40% of respondents face difficulties in using them due to a low level of digital competence. This suggests that the mere availability of technology does not guarantee its effective use-it is necessary to create a digital support environment [11,13].

The question of the sustainability of the effect of digital tools remains controversial. Some researchers [19,23] point to the short -lived impact of digital interventions without proper institutional support and continuous monitoring. In turn, our findings demonstrate the high potential of such tools in the context of structured integration into the state rehabilitation system. This is in line with the United Nations Development Programme [20] approach, which proposes the

introduction of hybrid support models with a simultaneous digital and physical component.

Of particular interest is the gender and age differentiation of requests for digital rehabilitation. The differences authors found between the categories of women, men, children, youth and the elderly are consistent with the findings of Kushnir *et al.* [5], Lawry *et al.* [22] and Fellegi *et al.* [25] but indicate the need for deeper cross-sectional analysis, especially in the case of vulnerable subgroups (e.g., single women with disabilities or youth with traumatic experiences). Thus, the findings are generally consistent with international and also pointing to limitations that require further analysis. Given the complexity of the war context, it is important to take into account not only technical but also socio -cultural, psychological and educational factors in the perception of innovations. The following assumptions remain relevant: (1) The effectiveness of digital solutions increases with institutional support; (2) Individualization of services is the key to their effectiveness; (3) Digital rehabilitation should be accompanied by professional training of staff and clients.

There are also some significant weaknesses to the empirical base, as they can be also reflected critically. Although the mixed-methods design could result in triangulation of three datasets, the qualitative narratives and the digital footprints revealed some inconsistencies that are difficult to interpret: as one example, the users reported valuing autonomy but their behavioural traces indicated low tolerance of uncertainty in the interface. Also, the insufficient sample diversity did not allow the discussion of the regional disparities in depth and the fact that the diaries were observed only within a short period did not allow tracking the changes over time. These shortcomings define how far the findings can be extended.

There should also be methodological bias. The self-observation in the diaries could have exaggerated the visibility of the practices which the participants considered to be socially desirable, including consultations or educational courses whereas minimizing the spontaneous or chaotic digital behaviours. Interview responses were influenced by the recall bias and frames of emotions especially those who had recent traumatic experiences. Though the data on the digital footprint was objective in character, it did not imply any contextual depth or the possibility to describe the motifs and emotional conditions of the user activity. Such sources of bias have to be taken into account in the interpretation of the results.

Notably, the combination of behavioural, experiential and demographic data will enable us to further new explanatory propositions. The results indicate that digital rehabilitation use is a three-phase behavioural model with the first phase being initial exploration based on the perceived safety, the second phase is the intermediate engagement based on the barriers to usability and the final phase is the sustained use based on the personalised feedback. This developmental process was not characterized in the Ukrainian or global literature before and offers a theoretical framework of redesigning digital tools in rehabilitation ecosystems.

To summarize, it can be argued that the current system of social rehabilitation of persons with war-related disabilities is undergoing a transformation in which digital tools, institutional interaction and cross-sectoral cooperation play a leading role. However, the limited evidence base, structural barriers and uneven implementation of practices create the basis for further interdisciplinary research. It is also necessary to develop mechanisms for long- term monitoring of the effectiveness of rehabilitation programs that combine quantitative and qualitative approaches, taking into account the subjective experience of target groups. Only under these conditions is it possible to create a sustainable support system focused on the needs of war-affected people.

## CONCLUSIONS

This paper presents a scientifically based evaluation of the interaction of war-related disabled people with digital rehabilitation platforms and illustrates that the digital practices of these individuals are not driven by access to technology but rather by emotive hesitation, cognitive overload and doubts about the interfaces. The aggregate analysis of the data collected through the diary, interviews and digital footprint showed the stability of the behavioural patterns: the inclination toward the use of personalised formats and the lack of automated tools use confirms the existing assumption in the field. Meanwhile, there are multiple methodological constraints to the interpretation of findings, such as the potential bias in social desirability in diary reports, interview bias, lack of contextual richness of digital evidence, small sample size and a relatively brief observation period. These methodological constraints can be used to imply specific recommendations on how user experience can be enhanced, namely the simplification of interfaces, the minimization of ambiguity during interaction and the introduction of instantaneous support systems, without carrying over these implications into general policy assertions. Altogether, the research outlines the importance of user-centred design and the ongoing assessment of the digital rehabilitation services and also indicates the necessity of further studies using larger and more heterogeneous samples and long-term follow-up in order to understand how digital engagement changes in the crisis.

### Limitations

This research has a number of methodological and analytical constraints that are to be considered when extracting the findings. To begin with, the qualitative and digital aspects, though there were three datasets, diaries, interviews, digital footprints; both had relatively small or context-specific samples, which restricted the ability to generalize behavioural patterns. Second, the mixed-methods design, carried out in the conditions of wartime, caused under-complete overlap in data sets, which limited the extent of cross-validation, specifically, not all deviations between self-reported behaviour and digital traces can be sufficiently investigated within the size of available samples. Third, the analysis methods were mainly based on descriptive data and the inferential tests must be viewed with caution because of

low sample power and the qualitative analysis, in its turn, is thematically sound but it does not purport to be exhaustive among all the subgroups of persons with disabilities. Fourth, despite the stringent application of the ethical protocols under the revised study design, the lack of explicit documentation in the beginning points to the necessity of the increased uniformity of ethics governance application in research of digitally vulnerable populations. Lastly, the research concentrates on the short term behavioural engagement and fails to record long term rehabilitation patterns, implying that the patterns reported are pre-emerging and not conclusive. All these limitations define the contextual limits of the study and point to further work, big-scale and longitudinal research.

## REFERENCES


[1] Lekholetova, M. *et al.* "Peculiarities of Social Work with Persons with Disabilities due to War." *Pedagogical Sciences: Reality and Perspectives*, no. 98, 2024, pp. 42-46, https://doi.org/10.31392/UDU-nc.series5.2024.98.08.

[2] Zaviršek, D. and J. Cox. "Navigating Minefields: Social Work with People with Disabilities in the Context of War." *Journal of Human Rights and Social Work*, vol. 9, 2024, pp. 441-452, https://doi.org/10.1007/s41134-024-00329-9.

[3] Klymenko, I. *et al.* "Psychosocial Rehabilitation of Military Personnel with Post-Traumatic Stress Disorder: The Example of Ukraine." *Salud, Ciencia y Tecnología*, vol. 5, 2025. https://doi.org/10.56294/saludcyt20251298.

[4] Frankova, I. and M. Sijbrandij. "Preventing Common Mental Health Problems in War-Affected Populations: The Role of Digital Interventions." *Frontiers in Digital Health*, vol. 7, 2025. https://doi.org/10.3389/fdgth.2025.1586030.

[5] Kushnir, A. *et al.* "Feasibility and Perceptions of Telerehabilitation Using Serious Games for Children with Disabilities in War-Affected Ukraine." *Applied Sciences*, vol. 15, no. 15, 2025. https://doi.org/10.3390/app15158526.

[6] Shraga, Y. *et al.* "Psychological First Aid for Ukrainian Civilians: Protocol and Reflections on a Volunteer International Phone-Based Intervention." *Frontiers in Digital Health*, vol. 7, 2025. https://doi.org/10.3389/fdgth.2025. 1539189.

[7] Snoubar, Y. *et al.* "Mental Health and Psychosocial Well-Being of Ukrainian Social Work Students Affected by Russia's Full-Scale Invasion." *The British Journal of Social Work*, 2025. https://doi.org/10.1093/bjsw/bcaf079.

[8] Druz, O. *et al.* "Social and Psychological Rehabilitation of Servicemen with Post-Traumatic Stress Disorder." *The Open Psychology Journal*, vol. 17, 2024. https://doi.org/10.2174/0118743501314928240923052532 6.

[9] Pustovoyt, M.M. *et al.* "From Treatment to Social Reintegration: Principles of Medical and Psychological Support of Veterans." *Mental Health: Global Challenges Journal*, vol. 7, no. 1, 2024, pp. 55-70, https://doi.org/10.56508/mhgcj.v7i1.196.

[10] Slozanska, H. *et al.* "Strengthening Social and Rehabilitation Services for Children with Disabilities in Wartime in Ukraine: There Is No Time to Wait." *SSRN*, 2024, https://doi.org/10.2139/ssrn.5361899.

[11] World Bank Group. *Ukraine Human Development Update - In Focus: Disability and Inclusion.* World Bank, February 2024.

[12] Castle, C.L. *et al.* "The Experiences of Attending an International Veteran Sporting Competition and Preparatory Camp for Team Ukraine during the Russo-Ukrainian Conflict." *Frontiers in Sports and Active Living*, vol. 6, 2024. https://doi.org/10.3389/fspor.2024.1395672.

[13] Armitage, R. "War in Ukraine: Public Health, Rehabilitation and Assistive Technologies." *Disability and Rehabilitation: Assistive Technology*, vol. 17, no. 1, 2022, pp. 1-2, https://doi.org/10.1080/17483107.2022.2110950.

[14] Klos, L. *et al.* "Implementation of Complex Rehabilitation of Disabled Veterans of the Russian-Ukrainian War in Institutions of Higher Education." *Rehabilitation and Recreation*, vol. 18, 2024, pp. 10-21, https://doi.org/10.32782/2522-1795.2024.18.3.1.

[15] Recovery. "A RECOVERY Rehabilitation Center for Wounded Soldiers Opened in Ternopil." *Recovery*, April 2025, https://www.recoveryua.org/en/a-recovery-rehabilitation-center-for-wounded-soldiers-opened-in-ternopil.html.

[16] Pinchuk, I. *et al.* "Mental Health Services during the War in Ukraine: Two-Years Follow-Up Study." *International Journal of Mental Health Systems*, vol. 19, no. 1, 2025. https://doi.org/10.1186/s13033-025-00667-9.

[17] Kiro, L. *et al.* "Intervention Impact on Quality of Life in Ukrainians with Post-Traumatic Stress Disorder." *BMC Psychology*, vol. 12, 2024. https://doi.org/10.1186/s40359-024-02109-6.

[18] Predko, V. *et al.* "Psychological Characteristics of the Relationship between Mental Health and Hardiness of Ukrainians during the War." *Frontiers in Psychology*, vol. 14, 2023. https://doi.org/10.3389/fpsyg.2023.1282326.

[19] Nestulia, O. "Reintegration of War Veterans into Peaceful Life in Ukraine: Current State and Future Challenges." *Economics and Region*, no. 4, 2024, pp. 89-96, https://doi.org/10.26906/EiR.2024.4(95).3611.

[20] United Nations Development Programme. *Rehabilitation of People with Visual Impairments: Analysis of the Situation.* United Nations Development Programme, Ukraine, April 2023.

[21] Slozanska, H. *et al.* "Social Work and Service Users' Experiences of the War in Ukraine." *Social Work in War-Torn Contexts*, edited by S. Ramon and D. Zaviršek, Springer, 2025, pp. 149-166, https://doi.org/10.1007/978-3-031-88789-5_9.

[22] Lawry, L.L. *et al.* "A Qualitative Assessment of War-Related Rehabilitation Needs and Gaps in Ukraine." *Journal of Health, Population and Nutrition*, vol. 44, 2025, article 175, https://doi.org/10.1186/s41043-025-00912-4.

[23] Gutenbrunner, C. *et al.* "Responding to the World Health Organization Global Disability Action Plan in Ukraine: Developing a National Disability, Health and Rehabilitation Plan." *Journal of Rehabilitation Medicine*, vol. 50, no. 4, 2018, pp. 338-341, https://doi.org/10.2340/16501977-2294.

[24] Puchyna, O. *et al.* "Features of Comprehensive Rehabilitation of War Veterans." *Clinical and Preventive Medicine*, no. 3 (41), 2025, pp. 91-95, https://doi.org/10.31612/2616-4868.3.2025.12.

[25] Fellegi, Z. *et al.* "Women's Political Power: Global Progress, Persistent Challenges." *Women's Studies International Forum*, vol. 101, 2023. https://doi.org/10.1016/j.wsif.2023.102818.

Appendix A: Form of Digital Self-Observation Diary on the Use of Rehabilitation Services (1 Participant, 7 Days)

| Date | Type of service | Name/Platform | Session duration (min) | Purpose of use | Obstacles/Difficulties | Usefulness (0-10) | Notes |
|---|---|---|---|---|---|---|---|
| 08.07 | Online consultation | Telemedicine/Zoom | 30 | Psychological support | Not always stable connection | 9,0 | I liked the specialist |
| 08.07 | Video course | YouTube/Hand rehabilitation | 15 | Physical exercises | There are no subtitles | 7,5 | I would like to see a translation |
| 09.07 | Independent viewing | Diia.gov.ua/Guide | 20 | Information about rights | No problems | 6,0 | Not enough examples |
| 10.07 | Chatbot | Social support bot | 10 | Request for help | Hangs after 3 steps | 4,0 | Did not complete the request |
| 11.07 | TV rehabilitation | ReabiTel/Mobile application | 25 | Breathing exercises | Video does not start | 6,5 | I will try again |
| 12.07 | Support group | Telegram group | 40 | Communication with others | It is difficult to write frankly | 5,0 | I did not feel supported |
| 13.07 | Online consultation | MedService+ | 35 | Consultation on pain | Convenient, good communication | 8,5 | Prescribed exercises |