DOI https://doi.org/10.32782/2415-8151.2023.29-30.19
UDC 338.1+376+364-3

INNOVATIONS TO SUPPORT THE REHABILITATION PROCESS FOR PEOPLE WITH DISABILITIES

Gnatiuk Liliia Romanivna[1], Zhuravlova Kseniia Serhiivna[2]
[1]PhD (Architecture), Associate Professor,
Department of Computer Technologies of Design and Graphics
of the National Aviation University, Kyiv, Ukraine,
e-mail: liliia.hnatiuk@npp.nau.edu.ua, orcid: 0000-0001-5853-9429
[2]National Aviation University, Kyiv, Ukraine,
e-mail: 6872610@stud.nau.edu.ua, orcid: 0009-0006-0921-1420

Abstract. The rehabilitation of servicemen and women in Ukraine after war-related injuries is extremely relevant and vital for the physical, psychological and social well-being of veterans and has significant implications for their successful reintegration into civilian life.

This project presents the innovation means of rehabilitation for military personnel in Ukraine, focusing on institutions and their goals. Additionally, international assistance programs aimed at supporting Ukrainian soldiers in their rehabilitation are discussed. The research methodology includes a review of available literature, reports and official documents. The results of the study highlights the challenges and opportunities in providing rehabilitation services to military personnel in Ukraine, and have implications for project practice in the field of health care and support services.

***The purpose** of the study is to reveal the accessibility, ergonomics and application of universal design in the equipment that fills rehabilitation centers in Ukraine. Additionally, the work aims to study, analyze and solve various aspects related to the infrastructure and equipment in these centers, as well as present a personal development. Given that the institutions are aimed at effectively meeting the needs of their diverse clientele, including military personnel and veterans. The study can also be useful for design practice in the field of health care and support services, as it takes into account the specific needs of veterans, including accessibility of facilities, mental health services, and vocational training programs.*

***Methods.** The research methodology included an analysis of the structure and functions of institutions, as well as an assessment of international assistance programs and experience available to Ukrainian soldiers [6]. Although the data of specific study participants are not provided for reasons of confidentiality in the context of war, the conclusions are based on publicly available information and expert analysis. To gather information, a comprehensive review of available literature, official reports and documents related to the rehabilitation of military personnel in Ukraine was conducted.*

***Scientific novelty.** Implementation of the technologies developed and considered during the research will improve the quality of medical care for servicemen and women and ensure equal access to safe, effective and inclusive rehabilitation services, facilities and conditions.*

***Practical significance.** Based on the conducted research, a personal innovation is presented to support the rehabilitation process of people with disabilities.*

Key words: *rehabilitation, military personnel, Ukraine, innovations, international assistance, specialized equipment, universal design, ergonomic, support, people with disabilities, rehabilitation process.*

INTRODUCTION

The rehabilitation of military personnel is a critical aspect of psychological and physiological recovery after completion of service [13]. Ukraine is a country living in a military conflict, so sufficient attention should be paid to the institutions involved in the rehabilitation of soldiers. To assess the current accessibility of rehabilitation centers in Ukraine, identifying architectural and infrastructural barriers that may impede the movement and use of facilities by persons with disabilities, such as veterans with musculoskeletal disorders [2].

Unfortunately, the number of institutions specializing in the rehabilitation of veterans is not encouraging. The wards and specialized equipment need to be replaced with innovation and more accessible equipment for people with different physical needs. Understanding the structure and goals of these institutions is important to improve the quality of care and support provided to veterans [3]. This article aims to provide an overview on the current situation with the interior design of institutions, shed light on international assistance programs and experience, and discuss the benefits of placing specialized equipment in terms of ergonomics and universal design. Will be offered own design, explain the purpose and benefits of its use in this type of institution.

PURPOSE

The purpose of the study is to reveal the accessibility, ergonomics and application of universal design in the equipment that fills rehabilitation centers in Ukraine.

RESULTS AND DISCUSSION

Today, rehabilitation of military servicemen and women in Ukraine is carried out by various institutions, for their successful reintegration into civilian life, each with its own purpose.

The leading institution is the Central Military Clinical Sanatorium of the Ministry of Defense of Ukraine, which primarily focuses on medical and psychological rehabilitation. It provides medical treatment, physical therapy, and psychological counseling to veterans to restore their physical and mental health.

Veterans' rehabilitation centers have been established throughout Ukraine [7], offering a wide range of services, including vocational training, employment assistance, and social reintegration programs. Their goal is to help veterans successfully adapt to civilian life.

The State Service of Ukraine for Veterans' Affairs is a special case in point, an institution that oversees veterans' affairs and provides rehabilitation and social support programs, and plays a crucial role in coordinating assistance efforts.

On the Day of Defenders of Ukraine, last year, President Volodymyr Zelenskyy visited the military hospital. The illustrations show that, unfortunately, the facilities are in need of new specialized equipment (Fig. 1), which will provide comfortable conditions for patients, promote inclusiveness and meet international accessibility standards. That includes wheelchair ramps, wide doorways, tactile signage, and accessible toilets so that all people, regardless of physical ability, can comfortably access and use facilities.

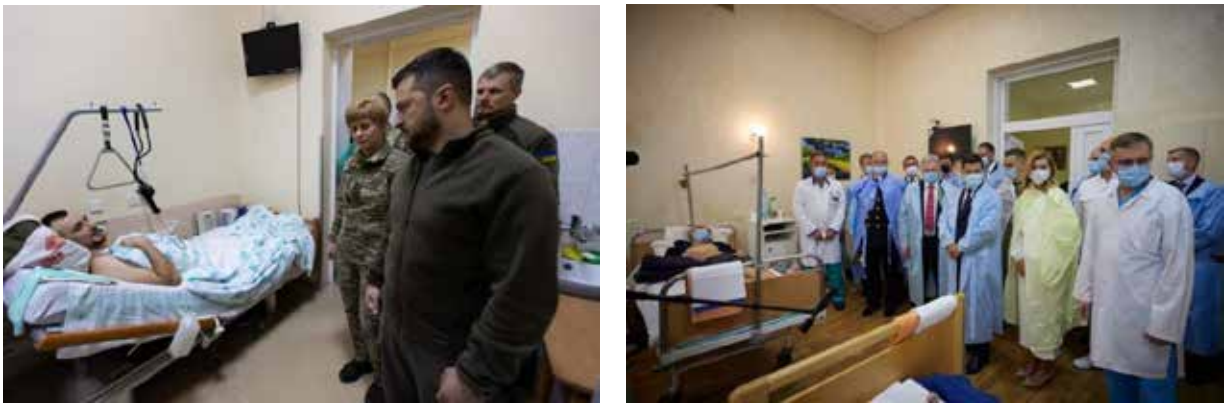

Fig. 1. Central Military Clinical Hospital

Теорія та практика дизайну: зб. наук. праць. Культура та мистецтво. 2023. Вип. 29–30. С. 164–173.
doi: https://doi.org/10.32782/2415-8151.2023.29-30.19

Ergonomics and user-centered design [4] are key aspects of the development of such facilities. Improving the usability of equipment, such as exercise equipment, mobility aids, or supplies that are designed to meet basic needs to ensure that they are convenient, safe, and effective. This involves assessing the equipment's adjustability, ease of use, and comfort [5].

Taking into account the above factors and features will help reduce the risk of injury to both patients and healthcare workers. Ergonomically designed equipment can increase the effectiveness of rehabilitation programs and reduce the potential for musculoskeletal strain among healthcare workers.

The integration of universal design principles into the physical layout and equipment selection of rehabilitation centers is a key factor. This involves ensuring that facilities and equipment are adapted and suitable for use by people with different needs and abilities.

Rehabilitation centers can, and ideally should, tailor equipment and facilities, adaptation to the different specific needs of service members and veterans, taking into account factors such as age, gender, type of disability and nature of injuries sustained during service.

Integrate modern technologies and capabilities into the rehabilitation and post-traumatic processes. Japan has been at the forefront of developing and implementing robotic devices to assist in rehabilitation. Robotic rehabilitation assistants (Fig. 2), such as the HAL (Hybrid Assistive Limb) exoskeleton, help patients regain mobility by providing support to their limbs. These systems are designed to be universal, making them adaptable to the needs of different patients.

Virtual Reality (VR) and Augmented Reality (AR): VR and AR technologies are incorporated into rehabilitation programs to offer immersive and interactive environments that can be customized to meet individual patient needs, helping to improve motor skills, coordination, and cognitive function.

These technologies are designed to be user-friendly and adaptable to different needs and skill levels of users [14].

This project was created in Japan to develop an information support system using PaPeRo (Fig. 3), a communication robot manufactured by NEC, as a platform to support and improve independent living for people with cognitive disabilities.

Nuprodx, based in Livermore, California, offers a wide range of mobility products for people with disabilities and those who need an extra support. A chair that combines a bathtub access slider system and a home mobility aid in one set (Fig. 4). Safe and comfortable, the system includes the smoothest moving mobility system available on the market.

The «Transfer Open Pool» system is a revolutionary new electronic swimming invention by a student from Limerick, Ireland, who has been announced as the winner of the Irish James Dyson Award. The electronic lifting device (Fig. 5) provides people of all mobility levels with a safe, comfortable and dignified way to move

Fig. 2. Hybrid assistive limb

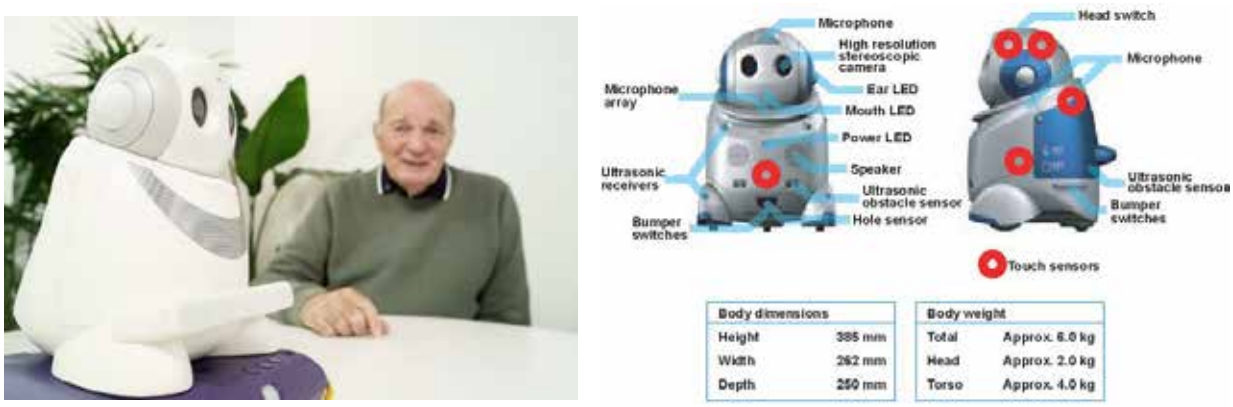

Fig. 3. PaPeRo

Fig. 4. Slide chair for the bathroom

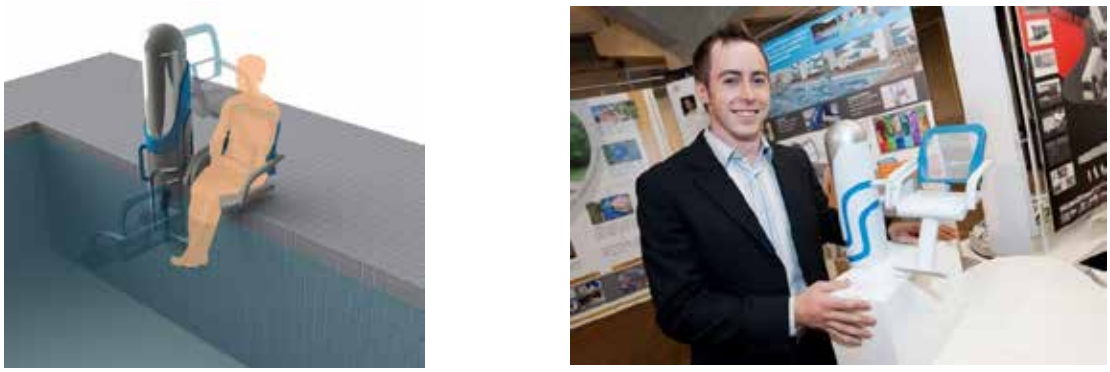

Fig. 5. Transfer Open Pool

from the pool to the water, operated by the user or an assistant. The person sits with their face parallel to the pool wall, lowering themselves into the water to see both the device and the pool wall. The controls in the armrest are used to lower the seat into the water in two steps. This results in a greater sense of security and a better experience.

The GRÚA VICTOR 2600 folding lift (Fig. 6) has a load capacity of 175 kilograms and is easy to use for various types of movement. The latest technology was used in the development, which

Теорія та практика дизайну: зб. наук. праць. Культура та мистецтво. 2023. Вип. 29–30. С. 164–173.
doi: https://doi.org/10.32782/2415-8151.2023.29-30.19

Fig. 6. Lift GRÚA VICTOR 2600

gives the lift an ergonomic and compact design. The lift can be easily folded when not in use and can be stored in a flat or upright position, extremely easy to operate. It is powered by a battery and uses a linak drive and control unit. The compact design of the folding lift ensures the safety and comfort of caregivers and the patient. The device can lift a person from the floor, chair or bed. Due to the durable nylon coating, it is easy to clean from dirt.

The introduction of innovative technologies and developments [5] in rehabilitation centers is extremely important for several reasons, as they can significantly improve the quality of treatment and the overall level of well-being of patients, facilitating their return to civilian life.

Modern technologies [8] in rehabilitation centers can lead to better treatment outcomes, often offering more accurate diagnostic capabilities, individualized treatment plans, and real-time monitoring of patient progress. For example, devices can track vital signs and physical activity, allowing healthcare providers to adjust rehabilitation plans as needed.

Advanced technologies can facilitate and speed up the recovery process. For example, robotic rehabilitation devices can provide targeted and intensive therapy, helping patients regain strength and mobility faster. This can lead to shorter hospital stays and a quicker return to normal life [9].

Additionally, personalized care plans can be created based on the patient's individual needs. Machine learning algorithms analyze patient data to recommend individualized rehabilitation exercises, dietary plans, and medication regimens, optimizing treatment effectiveness.

Interactive technologies [10], such as virtual reality and gamified rehabilitation exercises, make therapy more interesting and enjoyable for patients. This increased engagement can lead to better adherence to treatment plans and better outcomes.

Modern technologies allow for remote monitoring of treatment progress and telemedicine services [11]. Individuals can receive ongoing care and support even after leaving the rehabilitation center, which ensures continuity of treatment and reduces the risk of relapse. Despite the initial investment in the acquisition and implementation of these technologies, they can lead to cost savings in the long run. Faster recovery, fewer readmissions, and reduced complications can decrease overall healthcare costs.

Advanced technologies often incorporate universal design principles, making them accessible to patients with different needs and abilities. This inclusiveness ensures that all patients, regardless of physical or cognitive limitations, can benefit from the latest innovations and their stay in the hospital room is much more comfortable.

Technologies such as smart beds and patient monitoring systems increase safety. These systems can alert healthcare providers to changes in a patient's condition, reducing the risk of adverse events [18].

Rehabilitation centers can introduce assistive technologies to reduce the physical burden on healthcare workers. For example, exoskeletons can help in lifting and moving patients, reducing the risk of injury to medical staff [17]. By introducing the most recent technologies, rehabilitation centers contribute to ongoing research and innovation in this area.

They serve as testing grounds for new treatments, devices, and therapies, pushing the boundaries of what is possible in

© Gnatiuk L., Zhuravlova K. (2023). Innovations to support the rehabilitation process for people with disabilities. *Theory and practice of design. Culture and Art.* 3–4(29–30). P. 164–173, doi: https://doi.org/10.32782/2415-8151.2023.29-30.19

rehabilitation [16]. Items that facilitate the process of eating (Fig. 7). Adaptive utensils have ergonomic handles, non-slip grips, and special shapes that make them easier to hold and manipulate for people with limited dexterity or hand strength. Safety devices are attached to the utensils to prevent food from spilling or falling off the plate, allowing users with tremors or limited motor control to eat more easily. Some types of cutlery have extra weight in the handles, which can help people with hand tremors to better control themselves while eating. Trivets with non-slip surfaces hold plates and dishes in place, preventing them from moving around the table and making it easier to access food. Straw holders – attach to drinking straws

Fig. 7. Items that make eating easier

Fig. 8. Visualization of development

Теорія та практика дизайну: зб. наук. праць. Культура та мистецтво. 2023. Вип. 29–30. С. 164–173.
doi: https://doi.org/10.32782/2415-8151.2023.29-30.19

Fig. 9. Visualization of development

to ensure they stay in place and are comfortable for people with limited arm mobility. Adaptive cups and sippy cups have spill-proof lids, large handles, and angled straws or spouts to make drinking easier for people with physical or coordination issues. Swivel trays attach to chairs or wheelchairs, allowing users to bring food closer to them without having to reach across the table.

Thus, integrating the innovation technologies and developments into rehabilitation centers is extremely important, as they have the potential to improve treatment outcomes, personalize care, reduce healthcare costs, and enhance the overall patient experience. These technologies not only support the physical recovery of patients, but also improve their emotional and psychological well-being, leading to a more holistic and effective rehabilitation.

Taking into account the research conducted, it was found that the most relevant is the development of an ensemble to facilitate the nutrition of people who are in hospital or rehabilitation, have special needs, motor and cognitive impairments. Before starting the development, was formed a technical task for the design and explication of each object in the ensemble.

A stand and a service tray were designed (Figs. 8–9). The product is designed for people in the hospital or the elderly who find it difficult to eat at a table. Due to its sturdy design, the structure can be leaned on, for example, to stand up, and the top has a 90-degree rotation angle. The ensemble is transformable and transportable. The stand has a unique shape with four wheels at the base. The height of the stand can be easily adjusted using a button on the bottom surface of the tray, which is specially made in red for easy recognition. Patient can easily separate the tray from the base and use it separately on a bed or sofa, the legs hide into the bottom horizontal surface of the service tray. Upper part follows the configuration of the base.

The sides are specially designed to prevent objects from falling out of the base. The color is quite neutral (beige).

There are holes of different diameters for different dishes. The plates can be interchanged depending on their size. This differentiation allows individuals to accommodate a variety of foods in a small area, and a person can pick up and bring to the mouth as needed. The surface of the tray is divided into two levels. The right side is equipped with a magnet that helps to keep the cutlery on the surface.

Additionally, a yogurt holder has been developed, thanks to which it can be fixed and easily opened with one hand.

CONCLUSIONS

The findings of the study emphasize the importance of a comprehensive approach to rehabilitation of military personnel. While Ukraine has made progress in establishing institutions and receiving international support, challenges remain, such as limited resources and the need for ongoing mental health support. A personal innovation to support the rehabilitation process of people with disabilities is presented.

The rehabilitation of military personnel in Ukraine is a multifaceted process involving various institutions and international assistance programs. This paper provides an overview of

© Gnatiuk L., Zhuravlova K. (2023). Innovations to support the rehabilitation process for people with disabilities. *Theory and practice of design. Culture and Art.* 3–4(29–30). P. 164–173, doi: https://doi.org/10.32782/2415-8151.2023.29-30.19

the goals of these institutions and discusses international support efforts. Design practices for medical and support services should take into account the diverse needs of veterans to ensure effective and inclusive rehabilitation programs.

Means to improve rehabilitation outcomes are identified, focusing on accessibility, ergonomics and universal design. Accessible and well-designed facilities and the latest, practical equipment can increase the effectiveness of rehabilitation programs, leading to better recovery and overall well-being of patients.

Thus, the objectives of the study were achieved, as a comprehensive study of the accessibility, ergonomics and universal design aspects of rehabilitation centers in Ukraine was conducted. Implementation of the technologies developed and reviewed in the course of the study will improve the quality of care provided to servicemen and women and ensure equal access to safe, effective and inclusive rehabilitation services, facilities and conditions. Ultimately, the study revealed methods to improve rehabilitation outcomes and the overall well-being of those who have served their country.

ЛІТЕРАТУРА

[1] Балдинюк О. Універсальний дизайн як спосіб створення безбар'єрного середовища для людей з інвалідністю в Україні. Věda a perspektivy 2022. № 6(13). URL: https://doi.org/10.52058/2695-1592-2022-6(13)-153-165 (дата звернення: 17.09.2023).

[2] Вергунова Н.С., Вергунов С. В. Предметний дизайн. Тотожні терміни та їхні семантичні значення. *Вісник КНУКіМ. Серія «Мистецтвознавство»*. 2019. № 40. С. 183–188. URL: https://doi.org/10.31866/2410-1176.40.2019.172701 (дата звернення: 17.09.2023).

[3] Волянський О.М., Кіх А.Ю. Проблемо-сфокусована реабілітація військовослужбовців із вогнепальними пораненнями кінцівок. *Pain medicine*. 2018. Т. 3. № 2/1. С. 18. URL: https://doi.org/10.31636/pmjua.t1.25456 (дата звернення: 17.09.2023).

[4] Голобородько В.М. Ергономіка для дизайнерів : підручник. Харків : ХДАДМ, 2012. 378 с.

[5] Денисов В.Г. Ергономіка. Київ, 1971. 104 с.

[6] Єременко Л.К. Дизайн і технічний прогрес. *Теорія та практика дизайну*. 2016. № 9. С. 81–89.

[7] Литвиненко Л.І. Медико-психологічна реабілітація військовослужбовців та демобілізованих. *Актуальні проблеми психології. Консультативна психологія та психотерапія.* 2015. Т. 3. Вип. 11. С. 34–51.

[8] Мараховський А.А., Кузнецова І.О. Інноваційні чинники у дизайні : thesis, НАУ. 2013. URL: http://er.nau.edu.ua/handle/NAU/11977 (дата звернення: 17.09.2023).

[9] Масленнікова В. Реабілітація та працевлаштування інвалідів в Україні. *Вісник Пенсійного фонду України*. 2008. № 11. С. 24–27.

[10] Осадча А., Винничук М. Інтеграція у світовому дизайні. Humanities science current issues. 2020. Т. 5. № 28. С. 146–150. URL: https://doi.org/10.24919/2308-4863.5/28.208910 (дата звернення: 17.09.2023).

[11] Редактор Г. Технології збереження здоров'я, реабілітація і фізична терапія. *Health-saving technologies, rehabilitation and physical therapy*. 2020. Т. 1. № 1. С. 1–229. URL: https://doi.org/10.58962/hstrpt.2020.1.1.1-229 (дата звернення: 17.09.2023).

REFERENCES

[1] Baldyniuk, O. (2022). Universalnyi dyzain yak sposib stvorennia bezbariernoho seredovyshcha dlia liudei z invalidnistiu v ukraini. Věda a perspektivy. [Universal design as a way to create a barrier-free environment for people with disabilities in Ukraine]. *Věda a perspektivy*. 6(13). Retrieved from: https://doi.org/10.52058/2695-1592-2022-6(13)-153-165 (date of access: 17.09.2023). [in Ukrainian]

[2] Verhunova, N.S., & Verhunov, S.V. (2019). Predmetnyi dyzain. Totozhni terminy ta yikhni semantychni znachennia. [Subject design. Identical terms and their semantic meanings]. *Visnyk KNUKiM. Seriia «Mystetstvoznavstvo»,* 40. S. 183–188. Retrieved from: https://doi.org/10.31866/2410-1176.40.2019.172701 (date of access: 17.09.2023). [in Ukrainian]

[3] Volianskyi, O.M., & Kikh, A.Yu. (2018). Problemosfokusovana reabilitatsiia viiskovosluzhbovtsiv z vohnepalnymy poranenniamy kintsivok. [Problems of focused rehabilitation of patients with chronic injuries]. *Pain medicine.* 2018. T. 3, № 2/1. S. 18. Retrieved from: https://doi.org/10.31636/pmjua.t1.25456 (date of access: 17.09.2023) [in Ukrainian]

[4] Goloborodko, V.M. (2012). Ergonomics for designers: a textbook for students of higher educational institutions of design direction. [Ergonomics for designers: a textbook for students of higher educational institutions of design direction] Kharkiv: KHDADM. 378 s. [in Ukrainian]

[5] Denysov, V.H. (1971). Erhonomika. [Ergonomics] K. 104 s. [in Ukrainian]

[6] Ieremenko, L.K. (2016). Dyzain i tekhnichnyi prohres. [Design and technological progress]. *Teoriia ta praktyka dyzainu*, 9. S. 81–89. [in Ukrainian]

[7] Lytvynenko, L.I. (2015). Medyko-psykholohichna reabilitatsiia viiskovosluzhbovtsiv ta demobilizovanykh. [Medical and psychological rehabilitation of military personnel and demobilized persons]. *Aktualni problemy psykholohii. Konsultatyvna psykholohiia ta psykhoterapiia*. T. 3, vyp. 11. S. 34–51. [in Ukrainian]

[8] Marakhovskyi, A.A., & Kuznetsova, I.O. (2013). Innovatsiini chynnyky u dyzaini [Innovative factors in design]. Retrieved from: http://er.nau.edu.ua/handle/NAU/11977 (date of access: 17.09.2023). [in Ukrainian]

© Gnatiuk L.R., Zhuravlova K.S. Innovations to support the rehabilitation process for people with disabilities. *Теорія та практика дизайну: зб. наук. праць. Культура та мистецтво.* 2023. Вип. 29–30. С. 164–173. doi: https://doi.org/10.32782/2415-8151.2023.29-30.19

[12] Синишина В.М. Реабілітація учасників АТО методами психологічної допомоги. *Актуальні проблеми психології. Психологія особистості. Психологічна допомога особистості.* 2015. Т. 11. Вип. 13. С. 237–246.

[13] Синишина В. Реабілітація військовослужбовців засобами дебрифінгу. *Перспективи та інновації науки*. 2021. № 5(5). URL: https://doi.org/10.52058/2786-4952-2021-5(5)-814-826 (дата звернення: 17.09.2023).

[14] Сіньова Л.М. Соціальна реабілітація як напрям соціального захисту : thesis. 2014. URL: http://essuir.sumdu.edu.ua/handle/123456789/36812 (дата звернення: 17.09.2023).

[15] Макаренко С. Соціально-психологічна реабілітація учасників бойових дій. *Psychological journal*. 2018. Т. 13. № 3. С. 86–95. URL: https://doi.org/10.31108/2018vol13iss3pp86-95 (дата звернення: 17.09.2023).

[16] Шекера О.Г. Медичне забезпечення збройних сил НАТО. *Health of Society*. 2022. Т. 11. № 2. С. 34–45. URL: https://doi.org/10.22141/23062436.11.2.2022.292 (дата звернення: 17.09.2023).

[17] Тельна О. Універсальний дизайн у навчанні як інструмент інтенсифікації інклюзивної освіти. *Вісник Луганського національного університету імені Тараса Шевченка*. 2019. Vol. 2. № 1(324). С. 329–337. URL: https://doi.org/10.12958/2227-2844-2019-1(324)-2-329-337 (дата звернення: 17.09.2023).

[18] Ядовчак М.А., Бакалюк Т.Х., Стельмах Х.О. Реабілітаційні заходи в Україні та світі. Реабілітаційні підходи після ендопротезування кульшового суглоба. *Медицина*. 2021. № 4. С. 44–46. URL: https://doi.org/10.11603/2411-1597.2020.4.11873 (дата звернення: 17.09.2023).

[9] Maslennikova, V. (2008). Reabilitatsiia ta pratsevlashtuvannia invalidiv v Ukraini. [Rehabilitation and employment of disabled persons in Ukraine]. *Visnyk Pensiinoho fondu Ukrainy.* 11. S. 24–27. [in Ukrainian]

[10] Osadcha, A., & Vynnychuk, M. (2020). Intehratsiia u svitovomu dyzaini. [Integration in world design]. *Humanities science current issues,* T. 5, № 28. S. 146–150. Retrieved from: https://doi.org/10.24919/2308-4863.5/28.208910 (date of access: 17.09.2023). [in Ukrainian]

[11] Redaktor, H. (2020). Tekhnolohii zberezhennia zdorovia, reabilitatsiia i fizychna terapiia. [Health-saving technologies, rehabilitation and physical therapy]. T. 1, № 1. S. 1–229. Retrieved from: https://doi.org/10.58962/hstrpt.2020.1.1.1-229 (date of access: 17.09.2023). [in Ukrainian]

[12] Synyshyna, V.M. (2015). Reabilitatsiia uchasnykiv ATO metodamy psykholohichnoi dopomohy. [Rehabilitation of ATO participants by methods of psychological assistance]. *Aktualni problemy psykholohii. Psykholohiia osobystosti. Psykholohichna dopomoha osobystosti*, T. 11, vyp. 13. S. 237–2. [in Ukrainian]

[13] Synyshyna, V. (2021). Reabilitatsiia viiskovosluzhbovtsiv zasobamy debryfinhu. [Rehabilitation of military personnel by means of debriefing]. *Perspektyvy ta innovatsii nauky,* 5 (5). Retrieved from: https://doi.org/10.52058/2786-4952-2021-5(5)-814-826 (date of access: 17.09.2023). [in Ukrainian]

[14] Sinova, L.M. (2014). Sotsialna reabilitatsiia yak napriamok sotsialnoho zakhystu. [Social rehabilitation as a direction of social protection]. Retrieved from: http://essuir.sumdu.edu.ua/handle/123456789/36812 (date of access: 17.09.2023). [in Ukrainian]

[15] Makarenko, S. (2018). Sotsialno-psykholohichna reabilitatsiia uchasnykiv boiovykh dii [Social and psychological rehabilitation of combatants.] *Psychological journal*, T. 13, № 3. S. 86–95. Retrieved from: https://doi.org/10.31108/2018vol13iss3pp86-95 (date of access: 17.09.2023). [in Ukrainian]

[16] Shekera, O.H. (2022). Medychne zabezpechennia zbroinykh syl NATO. [Medical support for NATO forces]. *Health of Society,* T. 11, № 2. S. 34–45. URL: https://doi.org/10.22141/23062436.11.2.2022.292 (date of access: 17.09.2023). [in Ukrainian]

[17] Telna, O. (2019). Universal Design in Learning as a Tool for Intensification of Inclusive Education. [Universal Design in Education as a Tool for Intensifying Inclusive Education]. *Bulletin of Luhansk Taras Shevchenko National University,* Vol. 2, no. 1 (324). P. 329–337. Retrieved from: https://doi.org/10.12958/2227-2844-2019-1(324)-2-329-337 (date of access: 17.09.2023). [in Ukrainian]

[18] Yadovchak, M.A., Bakaliiuk, T.Kh., & Stelmakh, Kh.O. (2021). Reabilitatsiini pidkhody pislia endoprotezuvannia kulshovykh suhlobiv [Rehabilitation approaches after hip arthroplasty]. *Medsestrynsto,* 4. S. 44–46. Retrieved from: https://doi.org/10.11603/2411-1597.2020.4.11873 (date of access: 17.09.2023). [in Ukrainian]

АНОТАЦІЯ

Гнатюк Л. Р., Журавльова К. С. Інновації для підтримки процесу реабілітації осіб з обмеженими можливостями.

Реабілітація військовослужбовців і жінок в Україні після поранень, пов'язаних із війною, є надзвичайно актуальною та життєво необхідною для фізичного, психологічного та соціального благополуччя ветеранів і має значний вплив на їхню успішну реінтеграцію у цивільне життя.

Цей проєкт представляє інноваційні засоби реабілітації військовослужбовців в Україні, зосереджуючись на установах та їхніх цілях. Окрім того, обговорюються міжнародні програми допомоги, спрямовані на підтримку українських військових у їх реабілітації. Методологія дослідження включає огляд доступної літератури, звітів та офіційних документів. Результати дослідження висвітлюють проблеми та можливості надання реабілітаційних послуг військовослужбовцям в Україні та мають значення для практики проєктів у сфері охорони здоров'я та допоміжних послуг.

Мета дослідження – *виявити доступність, ергономічність та застосування універсального дизайну в обладнанні, яким комплектуються реабілітаційні центри України. Окрім того, мета роботи полягає у тому, щоб вивчити, проаналізувати та вирішити різні аспекти, пов'язані з інфраструктурою та обладнанням у цих центрах, а також представити особистий розвиток, зважаючи на те, що заклади спрямовані на ефективне задоволення потреб різноманітної клієнтури, зокрема військовослужбовців та ветеранів. Дослідження також може бути корисним для практики проєктування у сфері охорони здоров'я та допоміжних послуг, оскільки враховує специфічні потреби ветеранів, включаючи доступність приміщень, служб психічного здоров'я та програм професійної підготовки.*

Методологія дослідження *включає аналіз структури та функцій інституцій, а також оцінку програм міжнародної допомоги та досвіду, наявного в українських військових [6]. Хоча дані конкретних учасників дослідження не наводяться з міркувань конфіденційності в умовах війни, висновки ґрунтуються на загальнодоступній інформації та експертному аналізі. Для збору інформації було проведено комплексний огляд наявної літератури, офіційних звітів та документів щодо реабілітації військовослужбовців в Україні.*

Наукова новизна. *Упровадження розроблених та розглянутих у ході дослідження технологій дасть змогу підвищити якість медичної допомоги військовослужбовцям і жінкам та забезпечити рівний доступ до безпечних, ефективних та інклюзивних реабілітаційних послуг, засобів і умов.*

Практична значущість. *На основі проведених досліджень представлено персональну інновацію для підтримки процесу реабілітації людей з інвалідністю.*

Ключові слова: реабілітація, військовослужбовці, Україна, інновації, міжнародна допомога, спеціалізоване обладнання, універсальний дизайн, ергономіка, підтримка, люди з обмеженими можливостями, процес реабілітації.

ВІДОМОСТІ ПРО АВТОРІВ:

Гнатюк Лілія Романівна, *кандидат архітектури, доцент, доцент кафедри комп'ютерних технологій дизайну та графіки Національного авіаційного університету, Київ, Україна, e-mail: liliia.hnatiuk@npp.nau.edu.ua, orcid: 0000-0001-5853-9429*

Журавльова Ксенія Сергіївна, *Національний авіаційний університет, Київ, Україна, e-mail: 6872610@stud.nau.edu.ua, orcid: 0009-0006-0921-1420*

Стаття подана до редакції 05.11.2023 р.

Теорія та практика дизайну: зб. наук. праць. Культура та мистецтво. 2023. Вип. 29–30. С. 164–173.
doi: https://doi.org/10.32782/2415-8151.2023.29-30.19