Check for updates

DOI: https://doi.org/10.34069/AI/2024.74.02.6

How to Cite:
Seheda , N., Pashchenko, I., Chervonska, L., Tereshchenko, S., & Vrubel, H. (2024). The health-restoring potential of musical art in the postwar period. *Amazonia Investiga*, *13*(74), 72-80. https://doi.org/10.34069/AI/2024.74.02.6

The health-restoring potential of musical art in the postwar period

Здоров'я Відновлювальний Потенціал Музичного Мистецтва у Післявоєнний Час

Received: December 14, 2023 Accepted: January 27, 2024

Written by:
Natalia Seheda[1]
https://orcid.org/0000-0002-9807-2613
Inna Pashchenko[2]
https://orcid.org/0000-0002-3491-9061
Liliia Chervonska[3]
https://orcid.org/0000-0002-4906-684X
Svitlana Tereshchenko[4]
https://orcid.org/0000-0001-8037-1968
Hanna Vrubel[5]
https://orcid.org/0009-0007-3806-472X

Abstract

The academic paper explores the prospects of using music therapy for people who have participated in hostilities or have been in the epicentre of military operations and have experienced post-traumatic stress disorder. The present research encompasses the historical documentation of attempts to apply music therapy during the First and Second World Wars, the evolution of music therapy in the latter part of the XX century, and the potential for growth in the context of contemporary conflicts, in particular, the ongoing Russian aggression against Ukraine since 2014. Three main types of music therapy practices have been identified: perceptual, motor practices, and music-making. It has been revealed that the positive impact of music therapy practices is not only noted by the patients themselves but also measured instrumentally, which gives objective grounds to emphasize the importance of the health-restoring

Анотація

У науковій роботі досліджуються перспективи використання музикотерапії для людей, які брали участь у бойових діях або перебували в епіцентрі військових дій і пережили посттравматичний стресовий розлад. Це дослідження охоплює історичну документацію про спроби застосування музичної терапії під час Першої та Другої світових війн, еволюцію музичної терапії в другій половині XX століття та потенціал для зростання в контексті сучасних конфліктів, зокрема, російська агресія, що триває проти України з 2014 р. Було визначено три основні типи музико-терапевтичних практик: перцептивні, моторні практики та музикування. Виявлено, що позитивний вплив музико-терапевтичних практик не тільки відзначається самими пацієнтами, але й вимірюється інструментально, що дає об'єктивні підстави підкреслювати важливість оздоровчого

[1] Doctor of Pedagogical Sciences, Professor, Head of the Department of Theory and Methods of Music Education and Choreography, Educational and Scientific Institute of Socio-Pedagogical and Artistic Education, Bohdan Khmelnytsky Melitopol State Pedagogical University, Zaporizhzhia, Ukraine. WoS Researcher ID: KCJ-7468-2024
[2] PhD, Associate Professor, Educational and Scientific Institute of Socio-Pedagogical and Artistic Education, Bohdan Khmelnytsky Melitopol State Pedagogical University, Zaporizhzhia, Ukraine. WoS Researcher ID: JLK-9045-2023
[3] Candidate of Pedagogical Science, Associate Professor, Bohdan Khmelnytsky Melitopol State Pedagogical University, Zaporizhzhia, Ukraine. WoS Researcher ID: KCJ-7608-2024
[4] Candidate of Pedagogical Sciences, Senior Lecturer, Department of Theory and Methodology of Musical Education and Choreography, Educational and Scientific Institute of Social, Pedagogical and Artistic Education, Bohdan Khmelnytsky Melitopol State Pedagogical University, Zaporizhzhia, Ukraine. WoS Researcher ID: KCJ-8180-2024
[5] Concertmaster, Department of Theory and Methods of Music Education and Choreography, Educational and Scientific Institute of Socio-Pedagogical and Artistic Education, Bohdan Khmelnytsky Melitopol State Pedagogical University, Zaporizhzhia, Ukraine.

potential of musical art. At the same time, the analysis of publications shows that music therapy practices are not widespread, but rather sporadic initiatives of individual rehabilitation centers and volunteer organizations. In addition, the attempt to find out which musical works should be used for music therapy practices also brings no results due to the lack of relevant studies.

Keywords: music therapy, post-traumatic stress disorder, rehabilitation, interdisciplinary.

потенціалу музичного мистецтва. Водночас аналіз публікацій показує, що практики музикотерапії є не масовими, а спорадичними ініціативами окремих реабілітаційних центрів та волонтерських організацій. Крім того, спроба з'ясувати, які музичні твори варто використовувати для музико-терапевтичних практик, також не приносить результатів через відсутність відповідних досліджень.

Ключові слова: музикотерапія, посттравматичний стресовий розлад, реабілітація, міждисциплінарний.

Introduction

The use of musical art for therapeutic purposes is of increasing interest to both psychologists and musicologists. Music therapy becomes a part of art therapy – a science that studies the health-restoring capabilities of art.

The formation of music therapy as a separate science dates back to the beginning of the XX century and is related to the studies of James L. Corning and V. Behterev. Some references to the use of music therapy methods are also known during World War I.

The development of music therapy in the period after World War II is associated with the contributions of Margaret Anderton, Isa Maud Ilsen, and Harriet Ayer Seymou At that time, music therapy was officially recognized in some military institutions; in particular, in 1945, the use of music for rehabilitation in military hospitals was regulated in the U.S. War Department Technical Bulletin 187.

The actualization of interest in music therapy in recent years is related to the ongoing modern wars. In particular, Russia's aggression against Ukraine began in 2014, and at the time of writing the present academic paper, it has already killed hundreds of thousands of people. This war is not expected to be finished soon raising a range of issues for world science that would help to effectively counter the aggressor. In addition to innovations in the sphere of military technologies, which are regularly covered in scientific discourse, the issue of rehabilitation of people who have experienced trauma and psychological shocks in the combat zone is also significant. This issue is also regularly covered in the medical and social literature, which we will partially refer to in our research to the extent that they address the use of music therapy as a complementary therapeutic method.

The specifics of music therapy involve a multidisciplinary approach that takes into account the achievements of both musicology and medicine. From a medical point of view, art therapy tries to find out how art can influence not only a person's mood but also to normalize blood pressure, heart rate, stimulate memory, improve respiratory function, articulation and other aspects of physical and mental health, as well as to develop relevant effective methods of art therapy. Moreover, these can be both receptive methods (listening to music) and active methods – playing musical instruments, singing, performing special exercises to music, exercises for developing speech to music, listening to music with subsequent discussion.

From the musicological point of view, the issue of what kind of music has the best healing capabilities is of the greatest practical interest, what kind of works can be recommended to doctors for a course of therapy. Furthermore, art therapy can give composers an answer to the question of what kind of music should be written to be used in medical and rehabilitation institutions, what kind of music can help overcome post-traumatic stress disorder (PTSD). The purpose of our research is to analyze the achievements of music therapy in this area.

Literature review

The analysis of publications shows that a wide range of issues related to the impact of music on human health are studied. The authors of recent monographs include Hans-Helmut Decker-Voigt, Kenneth E. Bruscia, Karen Goodman, David Aldridge, Tony Wigram, Even Ruud, K.D. Goodman, Alison Levinge, William B. Davis, Kate E. Gfeller, etc.

A general overview of music therapy studies is given in the scientific work of O. Lvov (2019), who describes five significant models of music

therapy that were presented at the World Congress of Music Therapy in Washington, DC (the USA): GIM (Guided Imagery Method in Music, Helen L. Woppu), Analytical Music Therapy (Mary Priestley), Creative Music Therapy (authors – Paul Nordoff & Clive Robbins), Music Therapy of Benenzon (Rolando Benenzon), Behavioral Music Therapy (Clifford K. Madsen), Free Improvisation Therapy (Juliette Alvin).

Shabutin, Khmil & Shabutin (2008) examine the therapeutic properties of certain musical styles: Gregorian chant, sign chant, baroque, rococo, classicism, impressionism, folklore, and, more specifically, Indian music. The scholars list about 30 pieces of music that can be recommended for therapeutic purposes.

Landis-Shack, Heinz & Bonn-Miller (2017) analyzed the literature on music therapy and concluded that music activates brain regions associated with pleasure and stress reduction, promoting the release of endorphins and increasing positive emotions. Music therapy has proven to be effective in combination with other therapies, helping to improve the patient's physical and psychological condition, as well as their integration into society.

The publications of military researchers describing the rehabilitation activities that military personnel undergo are of great interest to our research. In particular, after the beginning of the Russian aggression in 2014, Kolesnychenko (2019), Gavlovsky, Golovanova, and Kharchenko (2019), Makarenko (2018), Stebluk et al., (2020), Safin and Yakymchuk (2019), Gulbs & Kobets (2021), Hordiienko (2021), Vasylenko (2020) have explored and studied rehabilitation measures.

A separate group of publications describes the experience of incorporating music therapy into university and school education. The researchers note that music therapy "stimulates the emotional sphere of the subjects of the educational process" (Dobrovolska, 2023), "helps to neutralize neuropsychic overload, restore a positive emotional and energy tone" (Burnazova & Kostievych, 2020), contributes to the creation of a "positive emotional communicative environment" reduces neuropsychic stress, stabilizes the functional state of students, and includes reflexive mechanisms for activating cognitive activity (Pavlenko, 2019; Reschke-Hernandez, 2014). In addition, the use of music therapy in music schools contributes to "increasing the effectiveness of music education, preserving and improving children's health, activating their interest and interest in music classes and lessons, developing their musical abilities, imagination and fantasy, enhancing their creative activity, harmonizing the sensual sphere, solving problems of interpersonal and creative communication against the background of health" (Malashevska, 2017).

Methodology

The analysis of music therapy publications makes it possible to point to the prevalence of three research methodologies: sociological, analytical, and generalizing-analytical.

The sociological method involves a questionnaire survey of a group of people who receive music therapy, followed by processing the results. In particular, this method was applied in the studies by Davis, Mulvaney-Day, Larson, Hoover & Mauch (2014), Akelma, Altınsoy, Arslan, & Ergil (2020). In some studies, like Maleki & Youseflu (2023), the questionnaire was supplemented by recording physiological indicators, which allowed for more objective indicators of the impact of music therapy on patients. The analytical approach involves studying the history of a particular patient who received music therapy treatment (for example, in the study by Vaudreuil et al., 2019) or examining the work of certain organizations or groups of specialists who have implemented music therapy treatment (Pezzin et al., 2018; Thompson & Neimeyer, 2014). The generalizing-analytical approach involves studying and identifying disparate data collected and published by researchers. A similar approach was used earlier in the scientific works of Landis-Shack, Heinz & Bonn-Miller (2017), Lvov (2019), Davis (2012) etc.

In the present research, we will rely on a generalizing-analytical approach and analyze two categories of publications – publications by authors from different countries that contain "music therapy" and "combat" in the keywords and publications by Ukrainian authors devoted to the rehabilitation of military personnel who participated in the defense of the country against Russian aggression. The purpose of the analysis is to identify music therapy practices and assess their health-restoring potential.

This study conducted a systematic review and analysis of the potential of musical art to restore health in the concept of post-war rehabilitation and recovery.

In the research process, several general scientific methods were used, in particular - analysis and synthesis (to research current theoretical concepts and scientific developments regarding the potential of musical art in post-war personality regeneration); comparison (for the systematization of conceptual approaches to the definition of basic concepts and criteria, clarification of the terminological apparatus); structural-logical method (to develop proposals for improving the paradigm of music therapy).

The work on the research was implemented based on the principles of complexity and systematicity of scientific research, which made it possible to analyze the object of research as a complete system with several interrelationships and interdependencies.

Results and discussions

The analysis of publications focusing on the health-restoring potential of musical art for people who have had traumatic experiences in the combat zone allows us to identify the following areas of research: the study of the impact of music therapy on a particular patient with a detailed examination of the anamnesis and the impact of music therapy on a group of patients using surveys. The vast majority fall into the second category.

Individual experiences are most fully described in the scientific work of Vaudreuil, Avila, Bradt, & Pasquina (2019). The scientists studied the experience of Luis Avila, a U.S. soldier who took part in combat operations in Afghanistan in 2011 and was seriously injured. According to the case report, Luis Alvia was in a coma for 40 days and "Avila's wife was informed that it was unlikely that he would regain consciousness and the discontinuation of life support was recommended. Mrs. Avila elected to continue life support and attempted to establish contact with CPT Avila by playing his favorite music (e.g., Help, Ode to Joy, The Army Song, and God Bless America). She also played video/audio recordings of their family and children" (Vaudreuil et al., 2019; Collie et al., 2006). Further use of music therapy involved 60-minute sessions three times a week, combining listening to music with speech language pathology [SLP], physical therapy [PT] and occupational therapy [OT]. According to the researchers, the sessions made it possible to "(1) access pre-injury memories through musical reminiscence, (2) acknowledge and process events of the attack through songwriting, (3) address his personal loss of limb, vision, communication, and mobility through successes in music-based rehabilitation associated with post-traumatic growth, (4) express gratitude to his family and friends through self-selected songs or creating his own music, and (5) honor the lives of his fellow and fallen soldiers through musical performance".

Studies of music therapy that have been applied to different groups of people allow us to distinguish three groups of music therapy practices: perceptual (patients listen to music), motor (patients perform various physical exercises to music) and creative (patients play musical instruments, sing or create music) (Ambler et al., 2023).

Perceptual practices involve offering patients to listen to music. Unfortunately, most studies, with the exception of the one cited above, do not specify which compositions the patients listened to. Some studies contain only general characteristics.

For instance, the study of Maleki & Youseflu (2023) suggested listening to "Turkish music, pop music, piano music at 70 bpm". In the study by Uğraş, G.A., Yıldırım, G., Yüksel, S., Öztürkçü, Y., Kuzdere, M., & Öztekin, S.D. (2018), patients were offered to listen to "classical, Turkish music and nature sounds". The research by Akelma, Altınsoy, Arslan, & Ergil (2020) refers to "favorite" music (without any specification). Most studies do not provide any guidance.

The role of perceptual music therapy is positively assessed in most studies. For instance, Maleki & Youseflu (2023) used music therapy in maternity hospitals in order to reduce short-term postpartum episiotomy pain. In the researcher's opinion, "music-based interventions can reduce the 1.60-unit of episiotomy pain score in both primiparous and multiparous than the control group. The highest and lowest effect of music on reducing the pain was at two and 48 h after episiotomy repair respectively".

Akelma, Altınsoy, Arslan, & Ergil (2020) explored the effect of listening to music on patients preparing for surgery. Surveys with methods for determining the level of anxiety (STAI-1 and STAI-2) and pain (NRS) showed that "listening to patient-preferred favorite music preoperatively reduced anxiety, regulated hemodynamic parameters, and improved postoperative patient satisfaction".

Uğraş, G.A., Yıldırım, G., Yüksel, S., Öztürkçü, Y., Kuzdere, M., & Öztekin, S.D. (2018) measured

patients' anxiety levels (STAI-S), systolic blood pressure (SBP), diastolic blood pressure (DBP), heart rate (HR) and revealed that "all types of music" reduced anxiety levels, as well as blood pressure and cortisol levels. Natural sounds additionally reduced diastolic blood pressure; classical Turkish music also reduced diastolic blood pressure and heart rate.

Krout (2007) justifies the use of music therapy to facilitate relaxation, as a means of masking unnecessary environmental stimuli, and as a distraction from stress or physical pain. The correlation between music and several facets of psychoneuroimmunology, the limbic system's function in emotional and physiological reactions to music, and the autonomic nervous system's function in hormone release are also discussed.

The study of Steiner-Brett (2023) suggests that "music therapy is presented as an effective non-pharmacological approach for addressing psychosocial needs, particularly, for informal caregivers". The study clearly demonstrates that music therapy benefits patients as well as caregivers, including physicians and relatives.

We conditionally refer to various practices in which music is used as an accompaniment for various motor or speech exercises to *motor practices*. In most cases, scholars do not specify what kind of music was used, limiting only to a superficial description of the practices applied.

For instance, Bronson, Vaudreuil, and Bradt (2018) describe a slow-tempo movement accompanied by music, during which the music therapist creates a dynamic melodic contour on the piano, cello, or other melodic instruments, aligned with the body scan trajectory. Roy, Bellini, Kruger, Haight & Vermetten (2022) used a "walk and talk" cognitive therapy procedure for patients with PTSD. The music was used as part of the "Motion-Assisted, Multi-Modal Memory Desensitization and Reconsolidation (3MDR)" procedure. In both cases, scientists assess the results of music therapy as positive; however, they emphasize the need for further studies.

Active forms of music therapy are mentioned in educational practice. For example, Pavlenko (2019, p. 139) describes such a technique as a "joint performance of a well-known song for one of the group members to celebrate his/her achievements or congratulate him/her", which, according to the author, "evokes positive emotions, a sense of cohesion".

Music-making practices are described in at least two studies. For instance, in the above-mentioned study by Bronson, Vaudreuil & Bradt, (2018), 60-minute sessions are held with group instrument playing and songwriting, with songwriting based on the 12-bar blues pattern. According to the researcher's viewpoint, "the therapist facilitates the group in playing the blues by accompanying on a strong rhythmic instrument (drums/percussion, bass, or rhythm guitar). Song lyrics can be added to the music, either spoken or sung by patients or the music therapist» (p. 201).

The experience of *the Guitars for Vets,* the volunteer project, aiming to provide free guitar lessons to veterans, which, according to the initiators, should help restore psychological balance, is equally interesting. Pezzin, Larson, Lorber, McGinley & Dillingham (2018) reported a moderate positive effect of lessons for those who agreed to participate in the project.

In several articles, researchers avoid specifying the nature of the music therapy practices used; however, they note their positive effects.

In particular, Davis, Mulvaney-Day, Larson, Hoover & Mauch (2014) tried to investigate the effectiveness of alternative and complementary medicine, which included music therapy along with chiropractic, herbs, massage, megavitamins, movement therapy, and relaxation.

Hasanović, Sinanovi, Pajević, Avdibegović, Sutović (2006) describe the issue of innovation in the health care system in Bosnia and Herzegovina, with a special focus on mental health care.

Prospects for applying music therapy in modern conditions also encourage the study of the Ukrainian experience. Consequently, let us highlight several studies by Ukrainian authors published after Russia's occupation of the Crimean peninsula and Donbas.

Safin & Yakymchuk (2019) consider psychological tools for conducting rehabilitation activities with combat veterans in combination with pharmacocorrection methods with psychotropic drugs, adaptogens, biostimulants, physiotherapy and psychotherapy methods, etc. The researcher mentions music therapy as one of the methods of psychotherapeutic rehabilitation (along with "bibliotherapy, imagery therapy, art therapy"), which "is widely used in foreign armed forces" (p. 240); however, he does not

highlight the specifics of its application in Ukraine.

Lytvynenko (2015) mentions the use of "art therapy" and "therapy with art and creative expression" along with Gestalt therapy and body-oriented psychotherapy, although the specifics of this therapy are not revealed. Gavlovsky, Golovanova, & Kharchenko (2019) mention art therapy, namely "the work of an artist", among the programs of the Kremenchuk Regional Hospital for War Veterans; however, they do not mention any practices related to music.

The following works are devoted to the issues of psychological rehabilitation of military personnel; however, they do not contain any mention of music therapy. Along with this, the following methods are mentioned:

- "psycho-diagnostics, debriefing, trainings on optimization of internal potential and restoration of psychological security of a person, game activities, psychological lectures, training in self-regulation; watching movies, recreation (swimming, sauna, jacuzzi, karaoke, fishing), massage, individual consultations, walks, gym classes, etc." (Kolesnychenko, 2019);
- "medical examination; psychological diagnostics (screening); psychological education (pro-education); psycho-emotional relief and restoration of psychological security of the individual; psychophysiological relief; social rehabilitation" (Vasylenko, 2020);
- "non-hospital therapy, individual and group psychotherapy; family counseling; relaxation and biofeedback techniques; physiotherapy, pharmacotherapy" (Safin and Yakymchuk, 2019);
- "providing emotional, meaningful and existential support to a person or society in situations of difficulty arising in the course of their personal and social existence" (Makarenko, 2018).

Discussions

The obtained results indicate a limited use of music therapy, primarily as a complementary measure. Although researchers have noted the positive effects of music therapy on patients' conditions, which are detected not only by patient surveys but also measured instrumentally, there is a lack of detailed explanations of the features of music used, as well as explanations of the mechanisms of music's effect on patients. These issues are considered to be insufficiently studied.

Music therapy has also become the subject of a large number of journalistic articles and websites, as well as videos on YouTube, which, according to their authors, allegedly have healing properties. However, we should be especially cautious regarding these sources of information. In particular, videos that form a distorted view of music therapy are being shared on the YouTube video platform. For instance, videos titled "Healing music" with the "frequency" of 432 Hz or 732 Hz are very popular (up to 40 million views or more). However, it should be borne in mind that the recordings presented on them are not signals of the declared frequency, but, as a rule, slow-tempo musical compositions based on classical harmony, which is known to use complex harmonies consisting of sounds with fundamental frequencies from 30-50 Hz to 2-4 kHz.

The content side of musical works that can be used in the process of music therapy is still out of the researchers' attention. The content side, which is determined by its intonational nature and, for music combined with poetry, also by the verbal range, can be an important factor in the psychological impact of music, both positive, if the piece of music is among the patient's favorite compositions, as well as negative. The negative impact can be manifested clearly if, for example, the song is sung in the language of the state, or glorifies the values of the state in hostilities against which the person, to whom the music is imposed, participated. This circumstance, in particular, is one of the important reasons for the restrictive measures against Russian music introduced in Ukraine with the beginning of the large-scale phase of the Russian invasion in 2022.

Conclusions

Published studies show the significant health-restoring potential of music for veterans of hostilities. In particular, listening to music, doing exercises accompanied by music, and making music (singing, playing musical instruments) can help improve human health, including normalizing blood pressure, heart rate, reducing anxiety, stimulating memory, etc. At the same time, the application of music therapy in real medical practice is currently used only sporadically and only in certain rehabilitation centers as supplementary to other types of therapy.

The scientific work explores the prospects of using music therapy for people who have participated in hostilities or were at the epicentre of hostilities and experienced post-traumatic

stress disorder. In the course of the work, a retrospective analysis of historical documentation was implemented regarding attempts to use music therapy during the First and Second World Wars, the evolution of music therapy in the second half of the 20th century, and the potential for growth in the context of modern conflicts, in particular, the Russian aggression against Ukraine, which has been ongoing since 2014. p.

In the process of research, three main types of music therapy practices were identified: perceptual, motor practices and music making. It was found that the positive impact of music therapy practices is not only noted by the patients themselves but also measured instrumentally, which provides objective grounds for emphasizing the importance of the healing potential of musical art. At the same time, it was proven that music therapy practices are not mass, but sporadic initiatives of individual rehabilitation centres and volunteer organizations.

From a musicological point of view, the greatest practical interest for future research in this direction is the question of which music has the best therapeutic potential, and which works can be recommended to doctors for conducting a therapeutic course. In addition, art therapy can give composers an answer to the question of what music should be written for use in medical and rehabilitation institutions, and what music can help overcome post-traumatic stress disorder, which is an invaluable resource for the recovery of both military personnel and the public in the post-war period of personal regeneration - psychological resource potential.

Bibliographic references

Akelma, F.K., Altınsoy, S., Arslan, M.T., & Ergil, J. (2020). Effect of favorite music on postoperative anxiety and pain. *Anaesthesist*, 69(3), 198-204. https://doi.org/10.1007/s00101-020-00731-8

Ambler, M., Janss, A., Stafford, R.S., & Florom-Smith, A., & Kang, A.W. (2023). Voices of Musicians: Virtual Live Bedside Music Concerts in Inpatient Care. *Healthcare (Switzerland)*, 11(22), 2929. https://doi.org/10.3390/healthcare11222929

Bronson, H., Vaudreuil, R., & Bradt, J. (2018). Music therapy treatment of active duty military: An overview of intensive outpatient and longitudinal care programs. *Music Therapy Perspectives*, 36(2), 195-206. https://doi.org/10.1093/mtp/miy006

Burnazova, V., & Kostievych, O. (2020). Art-Therapeutic Methods of a Music Teacher's Work. *Aesthetics and Ethics of Pedagogical Action*, 22, 108-18. http://dx.doi.org/10.33989/2226-4051.2020.22.222003

Collie, K., Backos, A., Malchiodi, C., & Spiegel, D. (2006). Art Therapy for Combat-Related PTSD: Recommendations for Research and Practice. A*rt Therapy: Journal of the American Art Therapy Association*, 23(4), 157-164. https://files.eric.ed.gov/fulltext/EJ777008.pdf

Davis, W.B. (2012). The first systematic experimentation in music therapy: the genius of James Leonard Corning. *J Music Ther*, 49(1), 102-117. https://doi.org/10.1093/jmt/49.1.102

Davis, M.T., Mulvaney-Day, N., Larson, M.J., Hoover, R., & Mauch, D. (2014). Complementary and Alternative Medicine Among Veterans and Military Personnel. A Synthesis of Population Surveys. *Medical Care*, 52, S83-S90. https://doi.org/10.1097/MLR.0000000000000227

Dobrovolska, R.O. (2023). Introduction of Music Therapy into the Content of Modern University Education in Ukraine. *Bulletin of the Alfred Nobel University. Series "Pedagogy and Psychology". pedagogical sciences*, 1(25). https://pedpsy.duan.edu.ua/images/PDF/2023/1/13.pdf

Gavlovsky, A.D., Golovanova, I.A., & Kharchenko, N.V. (2019). Analysis of rehabilitation of participants of the operation of combined forces. *Bulletin of Social Hygiene and Health Care Organization of Ukraine*, 2, 44-49. https://doi.org/10.11603/1681-2786.2019.2.10479

Gulbs, O., & Kobec, O. (2021). Social and psychological rehabilitation of combatants. *Psychological Journal*, (7), 100-1006. https://doi.org/10.31499/2617-2100.7.2021.237166

Hasanović, M., Sinanović, O., Pajević, I., Avdibegović, E., & Sutović, A. (2006). Post-war mental health promotion in Bosnia-Herzegovina. *Psychiatrist Danube*, 18(1-2), 74-8. https://europepmc.org/article/med/16804502

Hordiienko, E.P. (2021). *Mechanisms for implementing the state policy of social protection of combatants in Ukraine*. (Doctoral diss). Kharkiv National University named after V. N. Karazin Educational and Scientific Institute

https://acortar.link/gQFDda

Kolesnychenko, O. (2019). Psychological rehabilitation of military personnel – participants of combat actions of the National Guard of Ukraine. *Collection of scientific works of the National Academy of the State Border Guard Service of Ukraine. Series: Psychological Sciences*, 12(1), 159-175. http://dx.doi.org/10.32453/5.v12i1.144

Krout, R.E. (2007). Music listening to facilitate relaxation and promote wellness: Integrated aspects of our neurophysiological responses to music. *Arts in Psychotherapy*, 34(2), 134-141. https://doi.org/10.1016/j.aip.2006.11.001

Landis-Shack, N., Heinz, A.J., & Bonn-Miller, M.O. (2017). Music therapy for posttraumatic stress in adults: A theoretical review. *Psychomusicology: Music, Mind, and Brain*, 27(4), 334-342. https://doi.org/10.1037/pmu0000192

Lvov, O. (2019). Music Therapy as a Direction: History, Development, Perspectives, Techniques. *Forum of Psychiatry and Psychotherapy*, 12, 126-139. https://acortar.link/7GbufQ

Lytvynenko, L. (2015). Medical and psychological rehabilitation of servicemen and demobilized individuals. *Actual Problems of Psychology. Consultative Psychology and Psychotherapy*, 3(11), 34-51. https://acortar.link/hFIWQm

Makarenko, S. (2018). Socio-psychological rehabilitation of participants in combat operations. *Psychological Journal*, 4(3), 86-95. http://dx.doi.org/10.31108/2018vol13iss3pp 86-95

Malashevska, I. A. (2017). The importance and role of the sanogenic-personal paradigm of music education of preschoolers and primary schoolchildren. *Scientific Journal of the Drahomanov National Pedagogical University. Series 14: Theory and Methods of Art Education*, 22(1). 188-193. http://nbuv.gov.ua/UJRN/Nchnpu_014_2017 _22(1)__37

Maleki, A., & Youseflu, S. (2023). The effect of music-based interventions on short-term postpartum episiotomy pain: A systematic review and meta-analysis. *Heliyon*, 9(4), e14785. https://doi.org/10.1016/j.heliyon.2023.e1478 5

Pavlenko, H.V. (2019). Tolerance to uncertainty as a resource of students' psychological well-being. *Actual Problems of Psychology*, 7(47). http://appsychology.org.ua/data/jrn/v7/i47/2 0.pdf

Pezzin, L.E., Larson, E.R., Lorber, W., McGinley, E. L., & Timothy, R. D. (2018). Music-instruction intervention for treatment of post-traumatic stress disorder: a randomized pilot study. *BMC Psychol*, 6, 60. https://doi.org/10.1186/s40359-018-0274-8

Reschke-Hernandez, A.E. (2014). Paula Lind Ayers: Song-Physician for Troops with Shell Shock During World War I. *Journal of Music Therapy*, 51(3), 276-291. https://doi.org/10.1093/jmt/thu022

Roy, M.J., Bellini, P., Kruger, S.E., ... Haight, T., & Vermetten, E. (2022). Randomized controlled trial of motion-assisted exposure therapy for posttraumatic stress disorder after mild traumatic brain injury, with and without an eye movement task. *Frontiers in Virtual Reality*, 3, 1005774.

Safin, O., & Yakymchuk, A. (2019). Psychological tools for working with participants of anti-terrorist operations during their rehabilitation. *Collection of scientific works of the National Academy of the State Border Guard Service of Ukraine*. Series: Psychological Sciences, 14(3), 235-251. http://dx.doi.org/10.32453/5.v14i3.228

Shabutin, S., Khmil, S., & Shabutina, I. (2008). *Healing with music*. Textbooks and Manuals, Ternopil.

Steiner-Brett, A.C. (2023). The use of music therapy to address psychosocial needs of informal caregivers: An integrative review. *The Arts in Psychotherapy*, 84, 102036. https://doi.org/10.1016/j.aip.2023.102036

Stebluk, V.V., Friend, O.V., Maruta, N.O., Linsky, I.V., Kozhina, H.M., … & Rosinsky, G.S. (2020). *Mental health care and medico-psychological rehabilitation of military personnel in conditions of hybrid warfare*. A Monograph. Kyiv, 307 p. https://repo.knmu.edu.ua/handle/123456789/2 7737

Thompson, B. E., & Neimeyer, R. A. (Eds.). (2014). *Grief and the expressive arts: Practices for creating meaning*. Routledge. https://doi.org/10.4324/9780203798447

Uğraş, G.A., Yıldırım, G., Yüksel, S., Öztürkçü, Y., Kuzdere, M., & Öztekin, S.D. (2018). The effect of different types of music on patients' preoperative anxiety: A randomized controlled trial. *Complementary Therapies in Clinical Practice*, 31, 158-163. https://doi.org/10.1016/j.ctcp.2018.02.012

Vasylenko, S. (2020). Psychological rehabilitation in the system of psychological support for the training and application of armed forces in Ukraine in modern conditions. *Bulletin of the National Defense University of Ukraine*, 1(51), 5-10.

http://dx.doi.org/10.33099/2617-6858-2019-0-1-51-5-10

Vaudreuil, R., Avila, L., Bradt, J., & Pasquina, P. (2019). Music therapy applied to complex blast injury in interdisciplinary care: A case report. *Disability and Rehabilitation*, 41(19), 2333-2342. https://doi.org/10.1080/09638288.2018.1462412