

## **DEVELOPING A MUSIC THERAPY PROGRAM FOR CHILDREN WITH AUTISM AFFECTED BY WAR**

*This article describes the development of an evidence-based music therapy program for children with autism affected by war. The program aimed to decrease war-related traumatic experiences and teach adaptation skills. The most common treatments and frameworks for trauma and autism were reviewed. The main domains and needs of the population were identified. The interventions and dosage for interventions, including frequency, group size, and duration of the session were created. The program included listed assessment measures, interventions, a therapeutic function of music, and a materials list. The recommendations for the program implementation are given.*

**Keywords:** *autism; trauma; Trauma-Informed Care (TIC); Applied Behavior Analysis (ABA); Cognitive Behavior Therapy (CBT); Trauma-Focused Cognitive Behavior Therapy (TF-CBT); Post Traumatic Stress Disorder (PTSD); music therapy.*

**Problem definition.** The Russian invasion of Ukraine started in 2014 and developed into a full-scale war in February 2022. Among the most vulnerable populations affected by military actions are children with developmental disabilities. Autism is a neurodevelopmental disorder characterized by deficits in social communication and interaction, restricted and repetitive behaviors, and narrow interests (APA). There are still no updated statistics on how many children with autism are in Ukraine, but according to the Centers for Disease Control and Prevention (CDC), the number of children with ASD is about 1 in 44 8-year-olds (Maenner et al., 2018). After the war started, the basic needs of children with autism extended to dealing with war-related distressing events such as fleeing the country or city, experiencing losses, witnessing active hostilities, constantly hearing air raid alarms, changing everyday routines, etc. Traumatic events affect the overall development of an individual, including physical, emotional, cognitive, and behavioral domains (van der Kolk, 2003).

The ability to use effective coping skills in children with autism might be affected due to cognitive deficits. Impairments in such areas as information processing, understanding emotions, or goal-directed behavior may affect situational awareness and dealing with stressful circumstances (Stack & Lucyshyn, 2019). The lack of ability to cope with stress successfully may lead to accumulating traumas and negatively affecting well-being, including cognitive and behavioral outcomes. Therefore, teaching children with autism resilience and effective coping strategies was needed.

**Literature review.** The most frequently used evidence-based practices in the United States for treating trauma-related symptoms, including anxiety and depression, are Cognitive Behavior Therapy (CBT) and Trauma-Focused Cognitive Behavior Therapy (TF-CBT). Both practices have adaptations for children with autism. TF-CBT incorporates principles of skill training, emotional regulation, relaxation, and problem solving (O'Donohue & Fisher, 2012). Adaptations for children with autism include visualization, structure and predictability, giving choices and flexibility, and honesty and patience from therapist (Scattone & Mong, 2013).

Trauma-informed care (TIC) is utilized as a component of Applied Behavior Analysis (ABA). ABA is widely used to increase positive behaviors and functional independence. TIC is a universal strategy that acknowledges a basic understanding of trauma and its wide-reaching effects, recognizes the signs of trauma, and seeks to avoid retraumatizing (Heiderscheit & Murphy, 2021). Art-based therapies, such as music, movement, and drama are also among effective evidence-based interventions for the development of children with autism (Bharathi, 2019; Eckes et al., 2023; Faccini & Allely, 2021; Kim, 2009; LaGasse et al., 2019; Sharda, 2018; Srinivasan, 2013; Stack & Lucyshyn, 2019; Rajaraman et al., 2022).

Several research studies have been conducted on music therapy and trauma for children (Bensimon et al., 2008; Carr et al., 2012; Felsenstein, 2013; Heiderscheit & Murphy, 2021; Kruger et al., 2018; McFerran et al., 2022). Music therapy provides a safe environment and is an enjoyable activity for those suffering from Post Traumatic Stress Disorder (PTSD). Among the positive effects of music,

researchers identify improvement in emotional expressiveness, communication, independence, and self-control. Moreover, it decreases feelings of anxiety and fear (Carr et al., 2012; McFerran et al., 2022). The number of articles on PTSD and autism in children is still growing, however, there was little research found related to music therapy and the treatment of war traumatic experience.

**The purpose of the program** was to develop evidence-based music therapy interventions for children with autism to ease war-related trauma and teach them to recognize emotions, relaxation techniques, and deal with stressful situations, as well as coping strategies and adaptation skills.

**Description of the program.** The program was created for a group of three to five Ukrainian children who were 6 to 10 years old, had been diagnosed with autism, and were able to participate in eight biweekly sessions plus an assessment meeting. Depending on the number of participants and the level of support they may require, one or two assistants might be needed. We have chosen the four measurable *objectives* that targeted increasing emotional awareness, coping skills, social interaction, and decreasing anxiety.

**Measures.** The assessment tools were created for children, therapists, and caregivers. To measure the symptoms of trauma, we planned to use the Trauma Symptoms Investigation Form in Autism Spectrum Disorders (TIF-ASD) (Mehtar & Mukaddes, 2011) for caregivers to answer questions regarding social, communication, self-care skills, behavioral problems and stereotypes, and vegetative symptoms before and after the program. Another assessment tool for parents was chosen to measure the anxiety level. The Anxiety Scale for Children with Autism Spectrum Disorder (ASC-ASD) consists of 24 items rated on a 4-point Likert-type Scale ranging from never to always to measure 1) Separation Anxiety, 2) Uncertainty, 3) Performance Anxiety, and 4) Anxious Arousal (Soh et al., 2021). Additionally, the music therapist planned to interview one or more caregivers prior to the assessment session. The questions in the spreadsheet are related to demographics, current functioning, previous and ongoing experiences of stress, and the child's interests. The interview is based on the Practitioner Assessment Guide of Childhood

Trauma and Autism Spectrum Disorder (Michna et al., 2023). To gather the anxiety data from children, we chose the Personal Wellbeing Score created by Benson et al. (2019). The four-question 4-point Likert-type Scale is easy to use before and after each session. It was adapted for children with autism and looked like a simplified visualization of emotions marked by different colors. The initial music therapy assessment was created for a board-certified music therapist with previous work experience with children with autism. It consists of four main domains, including 1) social and behavioral skills, 2) communication skills, 3) cognitive skills, 4) sensory and motor skills, and 5) emotional functioning. We planned to videotape the assessment session and document it in narrative form.

***Duration and Dosage.*** Based on literature review data of the typical duration of trauma-oriented programs, their frequency, and effectiveness, we have proposed to conduct two weekly 45-minute-long sessions for four weeks - eight sessions in total. The sessions were created for in-person participants. A short-term program will contribute to the completion of a higher number of participants. The duration of a session would be 45 minutes, which was chosen in accordance with the standard duration of a school lesson in Ukraine for children of the targeted age group.

***Methods*** included receptive, compositional, improvisational, and re-creative music therapy (Bruscia, 2013). The receptive method was represented by musically supported relaxation and breathing, progressive muscle activation, movement with music, guided imagery with music, song sharing, and song discussion. The compositional method included fill-the-blank songwriting. The improvisational method consisted of free improvisation, rhythm improvisation, and drum circle interventions. The re-creative method included such interventions as singing, color-coded instrument playing, and boomwhackers playing.

The ***Session Plan*** was proposed to be finalized after assessing strengths, interests, and needs of participants. All eight sessions had a theme:

Session 1. Building a safe and trusted environment

Session 2. Acknowledging emotions

Session 3. Learning coping strategies

Session 4. Emotional regulation

Session 5. Practicing resilience (adaptation skills and problem-solving)

Session 6. Relaxation techniques

Session 7. Self-care

Session 8. Empowering the future

Each session included domains, goals, objectives, a short description of proposed interventions, the therapeutic function of music, and a list of materials. All sessions had a similar structure to add predictability for clients. Each week starts with the Hello song, followed by a group activity on a session's topic. The main part of the session included three to four interventions targeting specific skills building, such as emotion recognition, learning new coping strategies, working on self-regulation, etc. Each session ended with Choice Time – when clients could choose their preferred activity and the Goodbye song.

The musical instruments were chosen according to TIC, group size, practicality, and diversity. The instruments had to be sturdy, comfortable, and easy to use, not too loud, and with pleasurable sound. We prioritized such instruments as a guitar, big or jembe drums, shakers, xylophones, boomwhackers, ocean drums, resonator bells, and tongue drums. Among other supplies were visual materials, a schedule board, a speaker, a laptop, an iPad (to use as AAC device), therapy balls, and art-making materials. For choice time, it was proposed to use books, board games, and toys.

***Therapeutic function of music.*** The most frequently used activities at the sessions include but are not limited to improvisation, breathing exercises, and drumming.

It was found that free improvisation decreases salivary cortisol, a biomarker of stress, therefore, free improvisation lowers stress, regulates arousal, and promotes relaxation. Moreover, improvisation helps to enhance emotional expressiveness and contributes to the development of coping skills. Free improvisation was chosen to facilitate cooperation among group members and the inclusion of each group member. By participating in free improvisation, children learn

to recognize and verbalize their emotions and use music-making as one of their coping strategies. (Carr et al., 2012; Felsenstein, 2013; Heiderscheit & Murphy, 2021).

Music to support breathing is effective for improving coping skills and emotion regulation. Music-assisted relaxation reduces anxiety and promotes positive changes in relaxation at cognitive and somatic levels. It was chosen in our interventions to slow down the body's response to stress and anxiety. Guided imagery with music also decreases levels of anxiety and fear. It is used for increasing relaxation and self-efficacy. Also, guided imagery positively affects cognition and behavior (Kim et al., 2012; Heiderscheit & Murphy, 2021; Scheufler, 2021).

Drum circle helps to express anger, resulting in feelings of relief, satisfaction, and empowerment. It is used for facilitating group cohesion and self-expression. Drum circle gives opportunities for turn-taking, which is facilitated by the song's lyrics and pauses. It improves leadership skills, general development, creativity, and music skills. Moreover, drumming contributes to greater engagement and feeling freedom (Carr et al., 2012; McFerran et al., 2022).

**Conclusions.** Music therapy has great potential and evidence-based effectiveness in serving children with autism traumatized by war-related events. Based on the results of our study, we generalized recommendations for implementing the program. They are consisted of but are not limited to:

1) Implementing the TIC approach to guarantee safety and confidence for children and their caregivers.

2) Providing clients with communicative accommodation if needed (e.g., AAC, PECS). Using fewer words, giving longer wait time/processing time during communication, and paraphrasing if needed. Keeping in mind age and developmental differences.

3) Combining methods of presenting information (i.e., oral, visual) whenever possible.

4) Asking for preferences. Providing options and giving choices. Facilitating situations of success. Listening actively.

5) Avoiding trauma reminders. If the client talks about a traumatic experience, support verbally and gently bring them to the present.

6) Answering questions honestly and providing information about both the unknown and the known.

7) Giving emotional breaks. Not giving up quickly, as trauma healing needs time.

For **future directions of study**, the researcher sees a deeper investigation of music therapy for children with autism affected by war and implementing our pilot program in Ukraine.

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### **РОЗРОБКА ПРОГРАМИ З МУЗИЧНОЇ ТЕРАПІЇ ДЛЯ ДІТЕЙ З АУТИЗМОМ, ПОСТТРАВДАЛИХ ВІД ВІЙНИ**

*У статті описується створення доказової програми з музичної терапії для дітей з аутизмом, постраждалих від війни. Діти з аутизмом (або діти-аутисти) є однією з найбільш уразливих груп населення у військових конфліктах. Програма створена з метою зменшення можливого травматичного досвіду, пов'язаного з війною, та підвищення адаптаційних навичок дітей. Розглянуто найпоширеніші терапевтичні методики та стратегії роботи з аутизмом і травмою. Програма базується на основі Травма-інформованої допомоги (ТІД), принципах Прикладного аналізу поведінки (АВА), Когнітивно-поведінкової терапії (КПТ), Травма-орієнтованої когнітивно-поведінкової терапії (ТО-КПТ) та музичної терапії.*

*Визначено основні сфери та потреби учасників програми. Сформульовано чотири специфічні цілі програми, включаючи формування емоційної обізнаності, покращення навичок подолання стресу, поліпшення соціальної взаємодії та зменшення тривожності. Визначено кількість та частоту втручань, тривалість сесій та критерії участі в програмі. Програма включає інструменти оцінювання для батьків, терапевтів та дітей, приклади тематики сесії, опис структури сесії, терапевтичну функцію музики та запропоновані матеріали.*

*За результатами проведених досліджень надано рекомендації щодо впровадження програми. Наголошено про необхідність проведення подальших розширених досліджень музичної терапії для дітей з аутизмом, постраждалих від війни. Рекомендовано апробувати описану програму в Україні.*

**Ключові слова:** аутизм; травма; травма-інформована допомога (ТІД); прикладний аналіз поведінки (АВА); когнітивно-поведінкова терапія (КПТ); травма-орієнтована когнітивно-поведінкова терапія (ТО-КПТ); посттравматичний стресовий розлад (ПТСР); музична терапія.

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