

Integrative Art-therapeutic Correction of Psychosomatic Disorders in Children with Undifferentiated Connective Tissue Dysplasia

Olena Solyeyko¹, Serhii Tsarenko², Mariia Chernykh³, Arthur Berezovskiy⁴, Larysa Soleyko⁵, Oleg Fedorchenko⁴, Pavlo Zhuchenko⁴, Nataliia Benediktova⁴, Lena Davtian^{5*}

¹Department of Internal and Occupational Diseases, National Pirogov Memorial Medical University, Vinnytsya, Ukraine. ²Department of Environmental Design, Institute of Design and Advertising of the National Academy of Culture and Arts Management, Kyiv, Ukraine.

³Department of Histology, National Pirogov Memorial Medical University, Vinnytsya, Ukraine. ⁴Department of Pathological Anatomy, National Pirogov Memorial Medical University, Vinnytsya, Ukraine. ⁵Department of Propaedeutic of Internal Medicine, National Pirogov Memorial Medical University, Vinnytsya, Shupyc National Healthcare University of Ukraine.

Abstract

The syndrome of undifferentiated connective tissue dysplasia (UCTD) is a genetically determined condition, the detailed clinical picture of which is formed during the first five years of life. The development of vegetative-vascular dystonia in UCTD is associated with a changed collagen structure, which leads to the appearance of numerous clinical manifestations that affect the psycho-emotional status of the child, especially if the leading syndrome is anxiety. The purpose of our study was to evaluate the method of integrative art therapy using fairytale therapy for the correction of psychosomatic disorders in children with UCTD syndrome. At the end of the 6 months course of integrative art correction with fairytale therapy, a significant ($p < 0.05$) decrease in the level of psycho-emotional stress was observed in the patients, amounting to 13.2 ± 0.5 points. As for the level of skin-galvanic response (SGR), a positive increase was found in the group of patients who underwent sessions of classical psychotherapy: 6.9 ± 0.01 conventional points ($p > 0.05$), while in patients who were treated with the method of integrative art therapy, the positive increase in SGR was reliable and amounted to 8.6 ± 0.01 conventional points ($p < 0.05$). So, the use of the method of integrative art-therapeutic correction of psychosomatic disorders in the form of fairytale therapy is accompanied by a significant decrease in the level of psycho-emotional tension and anxiety in children with UCTD syndrome.

Keywords: Integrative art therapy, Psychosomatic disorders in children, Undifferentiated connective tissue dysplasia, Skin-galvanic response (SGR)

INTRODUCTION

The analysis of recent scientific works reveals the growth of studies devoted to syndromal pathology, the basis of which is connective tissue dysplasia [1-3]. The relevance of this pathology is determined by its high prevalence in the population. In addition, the interest in this category of patients is related to the polysystemic pathology of internal organs.

The syndrome of undifferentiated connective tissue dysplasia (UCTD) is a genetically determined condition, the detailed clinical picture of which is formed during the first five years of life. In this regard, UCTD as a syndromic pathology of a multi-organ nature should be considered an interdisciplinary problem today. In modern scientific literature, there is a sufficient number of publications devoted to one or organ-specific manifestation of UCTD [1, 3-5]. At the same time, the relationship between the external signs of UCTD and the peculiarities of the morphology and functions of organs and systems, especially the central and autonomic nervous systems, has not been sufficiently studied.

Interest in this problem is because the autonomic nervous system condition largely determines the sanogenetic capabilities of the body. Changes in the vegetative status are considered one of the main diagnostic criteria for somatic dysfunction. The development of vegetative-vascular dystonia in UCTD is associated with a changed collagen

Address for correspondence: Lena Davtian, Department of Propaedeutic of Internal Medicine, National Pirogov Memorial Medical University, Vinnytsya, Shupyc National Healthcare University of Ukraine.
alinasposts@gmail.com

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structure [6, 7], which leads to the appearance of numerous clinical manifestations in the form of vasomotor and migraine-like cephalgia, vegetobular dizziness, motion disorder, hyperventilation syndrome, vasovagal, cerebrovascular and arrhythmogenic syncope, periodic neurovascular syndromes [8, 9].

Each of these conditions somewhat affects the child's psycho-emotional status, especially if anxiety is the leading symptom. The various challenges of modernity have even formed a peculiar concept that vividly characterizes these processes: "anxious man in an anxious world". The peak manifestation of anxiety syndrome is panic attacks with an extremely variable clinical picture - from a pronounced effect of panic to a feeling of internal tension, i.e. "panic without panic" [10]. Such "emotionally poor" attacks are more common just among patients with UCTD, which is due to common pathogenetic mechanisms of disruption of both the collagen structure and the regulation of brain neurotransmitters [11, 12].

Modern diagnostics, early adequate correction, and rehabilitation therapy are modern algorithms for preventing the severe and atypical manifestation of panic attacks against the background of UCTD. Also, such therapy should be based on the principle of continuity, duration, and consistency of treatment [13-16].

For the psychological correction of panic attacks, in this situation, it is appropriate to use integrative art therapy, which in the 21st century turned from a method of treatment with fine art into an integrative method of influencing the psycho-emotional state of a person using all known types of art [17-19]. Fairytale therapy is of great interest in this area, which makes it possible to establish a deep, symbolic, significant level of problems, and then playfully with the use of various types of arts (decorative and applied art, musical, literary, dramatic, etc.) to get out of the state of psychosomatic disorder. The purpose of our study was to evaluate the method of integrative art therapy correction of psychosomatic disorders in children with UCTD syndrome using fairytale therapy.

MATERIALS AND METHODS

We monitored 60 children with verified UCTD syndrome (average age 14.1 ± 2.3 years) with psychological disorders in the form of panic attacks. The diagnosis of UCTD was made based on a specially designed original questionnaire based on the phenotypic map of Glesby in the modification of Martinov and co-authors [2, 3]. The questionnaire included 54 positions of micro anomalies. The diagnosis of UCTD was established by detecting 6 or more positions of micro anomalies.

The diagnosis of a panic attack was based on the occurrence of paroxysmal fear, the presence of anxiety and/or the feeling of internal tension in combination with 4 or more groups of

the following symptoms: pulsation, strong heartbeat, accelerated pulse; sweating; fever, tremors, a feeling of internal shaking; feeling of lack of air, shortness of breath; pain and discomfort in the left half of the chest; nausea or abdominal discomfort; a feeling of dizziness, shakiness, light-headedness or fainting; feeling of derealization, depersonalization; fear of going crazy or committing an uncontrollable act; fear of death; a feeling of numbness or tingling (paresthesia) in the limbs; feeling hot or cold [20].

Conversion symptoms were used as additional criteria: the feeling of a clod in the throat, gait disturbance; impaired vision or hearing; cramps in arms and legs; pseudocyesis.

All patients came under our supervision after a course of psychopharmacological therapy. Then they were randomized into 2 groups of 30 people. In the first group, sessions of classical psychotherapy were conducted for 6 months, in the second, the method of integrative art therapy was used.

Sessions of classical psychotherapy in patients of the 1st group were aimed at restoring the level of social adaptation, overcoming agoraphobic manifestations (anticipatory anxiety, "avoidance" behavior), and early relapses. Such classical cognitive psychotherapy is aimed at correcting the fixed misconceptions of patients, following which patients hyperbolically react to those somatic sensations that do not threaten their lives at all. The leading method of behavioral therapy is the method of "systematic desensitization", that is, immersion in the situation of the phobia (imaginary or real). The patient and the therapist compile a scale of scenes related to the occurrence of symptoms and rank them in ascending order - from the least to the most severe. The use of progressive muscle relaxation techniques allows the patient to learn to relax by imagining increasingly difficult scenes. Then the sessions are transferred from the office to real-life situations, to situations that cause anxiety. The result of this training is the patient's sense of liberty in those situations that he previously avoided [21, 22].

The patients of the 2nd group were divided into 3 art groups of 10 people. The task of each of the art groups was to create an author's fairytale with its subsequent presentation at the end of the art correction course. There were 12 fairytale therapy sessions lasting 2 hours each. The analysis of the fears and anxieties of the children of each of the art groups became the basis for the plot of the fairytale and its development. The distribution of role participation in each of the art groups was carried out taking into account the personal wish of the child and their creative inclinations. The children drew posters, and scenery selected the style of costumes, and music (or created it themselves), sang, recited, and played musical instruments [23].

Before the start of the study and at the end of the corrective therapy, all patients underwent Beck's test and measured the skin-galvanic response (SGR). The test is based on 21 questions with 4 answer options and scoring answers from 0

to 3 for each answer. Emotional stability corresponded to the indicator from 0 to 21 points.

Measurement of SGR was carried out according to the following method. The test subject's ring finger is preliminarily degreased, and the sensor is fixed. 6 - 7 introductory questions, and then 20 main ones are asked for registering the values of SGR. The assessment of the level of SGR is carried out on an electronic monitor in conventional points at a constant electric current value in the range of 10-50 mA. Measurements are carried out in the interval from 0 to 10 points, and based on that value the degree of general anxiety is determined [20].

For statistical processing of the results, the package of statistical applications "SPSS-10.0" and "Statistica-6.0" for the Windows XP operating system was used. The threshold value of the probability of error for a statistically significant difference was set at the level of 0.05.

RESULTS AND DISCUSSION

At the beginning of psycho-corrective therapy, the average level of psycho-emotional stress according to Beck's test in the first group was 24.1 ± 0.8 points, and in the second - 24.8 ± 0.6 points. The level of SHG in the first group of patients was 4.1 ± 0.1 points, and in the second - 4.2 ± 0.1 points, which corresponded to an average level of anxiety. At the end of the course of classical psychotherapy, the patients of the first group observed a decrease in the level of psycho-emotional tension to 18.7 ± 0.5 points, which was, however, not reliable. In the patients of the second group, at the end of the course of integrative art correction with fairytale therapy, a significant ($p < 0.05$) decrease in the level of psycho-emotional stress was observed, amounting to 13.2 ± 0.5 points. As for the level of SHG, a positive increase was observed in the first group of patients: 6.9 ± 0.01 units ($p > 0.05$), while in the second group, the positive increase in SGR was reliable and amounted to 8.6 ± 0.01 u. at. ($p < 0.05$).

A more significant reduction in the level of psychosomatic tension through the use of fairytale therapy occurred due to the healing capabilities of the art therapy process itself, a creative process that allowed expressing, reliving internal conflicts, and, ultimately, resolving them. The ancient Greeks believed that art is a refuge for people in misfortune. As a result of creative activities, a person overcomes doubts about his ability to freely express their fears [24, 25]. Firstly, integrative art therapy helps to establish closer contact with the patient and gain access to his experiences, secondly, it is fairytale therapy that creates an atmosphere of positive mood for the child, thirdly, this technique can transform a person's feelings and give a way out to destructive tendencies [8, 13, 22]. Unconscious processes with their destructive effects turn into highly effective tools for creating new connections and forms, progressive concepts, and images. In addition, integrative art therapy corresponds to the method of "systematic desensitization" in the same way as classical

behavioral therapy used in the first group of patients. According to the principle of the methodological approach, both groups in the study were representative. However, the advantage of integrative art therapy in our study turned out to be its group approach, which made it possible to develop not only social (as in the children of the first group), but also communication skills. Also, it allowed to provide mutual support to group members and to solve common problems; to observe the results of one's actions and their impact on others; to learn group roles and revealing latent personality qualities, and observe how modification of role behavior affects relationships with other group members; to increase self-esteem; to develop decision-making skills [13, 15, 17, 26].

An art therapy group provides a democratic atmosphere associated with equal rights and responsibilities of group members, and a lower degree of dependence on the art therapist. The art therapist is always next to the patient during his creativity. He does not comment, does not make remarks, promotes the release of the child's emotions (including negative ones), and clarifies everything that the patient does with the help of questions. In such a group, the not only interaction with other group members is important, but also individual creativity, which affects the dynamics of the overall process. The primary basis of fairytale therapy is archaic forms of art that have survived in folk art, characterized by naivety, directly acting nature, reliance on the symbolic language of the unconscious, and which are a source of children's mental health.

CONCLUSION

1. The use of the method of integrative art-therapeutic correction of psychosomatic disorders in the form of fairytale therapy revealed a significant decrease in the level of psycho-emotional tension and anxiety in children with UCTD syndrome.
2. Modern fairytale therapy creates a unique basis for the synthetic direction of art therapy, which demonstrates a deep reduction in the level of psycho-emotional tension in patients due to the integrative nature of the method.

This method is a promising direction for the correction of psychosomatic disorders, as it is positioned in the mental plane of expectations, attitudes, and traditions of patients in Ukraine, who are characterized by an orientation towards emotionally imaginative experiences. Integrative art therapy reflects the processes of the realization of three independent directions - medical, social, and pedagogical, which are closely related to the recognition of the value of human resources as an important condition for the sustainable development of society.

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REFERENCES

- Bortkevych OB. Connective tissue dysplasia. The health of Ukraine. *Cardiology. Rheumatology. Cardiac surgery.* 2010;4:53-5. [In Ukrainian]
- Solyeyko OV, Rykalo NA, Osypenko IP, Solyeyko LP. Syndrome of undifferentiated connective tissue dysplasia: from the concept of pathogenesis to treatment strategy. Tutorial. Vinnytsia, Ukraine: Nova Knyha; 2014. 168 p. [In Ukrainian]
- Oleksandrivna CM, Vitaliivna SO, Petrivna SL, Borisivna YO, Prystupiyuk M, Prystupiyuk L, et al. Markers of Undifferentiated Connective Tissue Dysplasia in Female Patients with Acute Q-myocardial Infarction. *Arch Pharm Pract.* 2021;12(2):80-5. doi:10.51847/yMuzdZIE7y
- Osovska NYu. Small structural anomalies of the heart as manifestations of the syndrome of undifferentiated connective tissue dysplasia. The health of Ukraine. 2012;2:51-67. [In Ukrainian]
- Rak N. Features of the clinical course of arterial hypertension combined with connective tissue dysplasia. Ph.D. thesis, Danylo Halytsky Lviv National Medical University. Danylo Halytsky Lviv National Medical University, Lviv. 2021. [In Ukrainian]
- Malemud CJ. Matrix metalloproteinases (MMPs) in health and disease: an overview. *Front Biosci-Landmark.* 2006;11(2):1696-701.
- Chernykh MO, Berezovskyi AM, Shamrai VA, Postolovskiy LYu. Clinical and morphological changes of the cardiovascular system in patients with cardioneurosis (neurocirculatory dystonia). *Rep Vinnytsia Natl Med Univ.* 2019;3(23):515-21. [In Ukrainian]
- Fusar-Poli P, Salazar de Pablo G, De Micheli A, Nieman DH, Correll CU, Kessing LV, et al. What is good mental health? A scoping review. *Eur Neuropsychopharmacol.* 2020;31:33-46. doi:10.1016/j.euroneuro.2019.12.105
- Beketova GV, Mozgova GP, Shekera OG, Beketova NV, Pryimatchuk LM. Neurophysiological characteristics of psychosomatic disorders and psychosomatic pathology in children and adolescents. *Wiad Lek.* 2019;72(12 cz 1):2282-7.
- Scarella TM, Boland RJ, Barsky AJ. Illness Anxiety Disorder: Psychopathology, Epidemiology, Clinical Characteristics, and Treatment. *Psychosom Med.* 2019;81(5):398-407. doi:10.1097/PSY.0000000000000691
- Ströhle A, Gensichen J, Domschke K. The Diagnosis and Treatment of Anxiety Disorders. *Dtsch Arztebl Int.* 2018;155(37):611-20. doi:10.3238/arztebl.2018.0611
- Daitch C. Cognitive Behavioral Therapy, Mindfulness, and Hypnosis as Treatment Methods for Generalized Anxiety Disorder. *Am J Clin Hypn.* 2018;61(1):57-69. doi:10.1080/00029157.2018.1458594
- Hastruk NA, Solyeyko OV, Hastruk AV, Nesterovych OL. Art therapy: from world experience to national priorities. *Mystetstvo likuvannia.* 2014;2(108):57-60. [In Ukrainian]
- Zubala A, Kennell N, Hackett S. Art Therapy in the Digital World: An Integrative Review of Current Practice and Future Directions. *Front Psychol.* 2021;12:595536. doi:10.3389/fpsyg.2021.600070
- Liu Z, Yang Z, Xiao C, Zhang K, Osmani M. An Investigation into Art Therapy Aided Health and Well-Being Research: A 75-Year Bibliometric Analysis. *Int J Environ Res Public Health.* 2021;19(1):232. doi:10.3390/ijerph19010232
- Georgievna PO, Andreevna KM, Tokhiriyon B, Aleksandrovna DL, Mikhaylovich PV. The Effectiveness and Functional Properties of the Plant-Based Dietary Supplement in Complex Respiratory System Diseases Therapy. *Int J Pharm Res Allied Sci.* 2020;9(3):66-70.
- Barron I, Mitchell D. The Fairy Tale Model: Secure Facility Therapist Perceptions. *J Child Adolesc Trauma.* 2018;12(2):257-67. doi:10.1007/s40653-018-0203-2
- Simon NM, Hofmann SG, Rosenfield D, Hoepfner SS, Hoge EA, Bui E, et al. Efficacy of Yoga vs Cognitive Behavioral Therapy vs Stress Education for the Treatment of Generalized Anxiety Disorder: A Randomized Clinical Trial. *JAMA Psychiatry.* 2021;78(1):13-20. doi:10.1001/jamapsychiatry.2020.2496
- Haeyen S. Effects of Arts and Psychomotor Therapies in Personality Disorders. Developing a Treatment Guideline Based on a Systematic Review Using GRADE. *Front Psychiatry.* 2022;13:878866. doi:10.3389/fpsyg.2022.878866
- Stoliarenko AM, Pidlubnyi VL. Functional features of the brain and psychophysiological reactions in patients with Internet gaming addiction. *Med Psychol.* 2018;4:8-11. [In Ukrainian]
- Miake-Lye IM, Apaydin EA, Mak SS, Begashaw MM, Beroes-Severin JM, Shekelle PG. Evidence Map of Art Therapy [Internet]. Washington (DC): Department of Veterans Affairs (US); 2019 Jul.
- Rathmann K, Bilz L, Hurrelmann K, Kiess W, Richter M. Is being a "small fish in a big pond" bad for students' psychosomatic health? A multilevel study on the role of class-level school performance. *BMC Public Health.* 2018;18(1):1098. doi:10.1186/s12889-018-5977-5
- Petrenko V, Mitina O. The Fairytale Semantic Differential Technique: A Cross-Cultural Application. *Behav Sci (Basel).* 2020;10(7):112. doi:10.3390/bs10070112
- Conzelmann A, Hollmann K, Haigis A, Lautenbacher H, Bizu V, App R, et al. Internet-based psychotherapy in children with obsessive-compulsive disorder (OCD): protocol of a randomized controlled trial. *Trials.* 2022;23(1):164. doi:10.1186/s13063-022-06062-w
- Fang H, Li Y, Wu M, Gan F. Study on the validity of the theoretical paradigm of art therapy for vulnerable children. *Disabil Rehabil Assist Technol.* 2022;1-12. doi:10.1080/17483107.2022.2074555
- Feen-Calligan H, Moreno J, Buzzard E. Art Therapy, Community Building, Activism, and Outcomes. *Front Psychol.* 2018;9:1548. doi:10.3389/fpsyg.2018.01548