Dance Therapy in the Socialization of Individuals with Musculoskeletal Disorders

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Abstract: The article provides theoretical generalizations on the use of dance therapy in the correction and socialization of individuals with musculoskeletal disorders (MSDs). It also presents the author's year-long programme of such rehabilitation and quasi-experimental observations on its effectiveness. The article proves that dance therapy performs a much wider range of functions, than correction of MSDs. It acts as an effective way of social and psychological adaptation of individuals with MSDs. In particular, it allows one to develop independence, train relaxation skills and concentration, enhance the creativity of the inner self, creative imagination, reduce tension in the team, listen to and hear others better, relieve body tension, enhance communication skills, develop intellectually in the field of various arts, identify and correct problems in a particular child and children groups. The article proposes the hypothesis according to which one-year dance therapy should improve the manifestations of social adaptation of individuals with MSDs. The findings of the article can be used, first of all, in the post-Soviet countries, where dance therapy does not have a long tradition and requires borrowing international experience.

Keywords: *cerebral palsy, art therapy, correctional pedagogy, social rehabilitation, physical rehabilitation, motivation.*

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Introduction

Long before dance therapy emerged, Vygotsky (1982) wrote, “Pedagogy may soon stop being ashamed of the very concept of a child with special needs as an indication of some irreparable defect in its nature”. The scholar singled out the personality of a child with physical or mental disorders as the main object of rehabilitation influence. He urged specialists to determine the number of disorders in psychometric processes, not in a formal way and emphasized the qualitative and comprehensive study of the child. He insisted that a child with special needs was a child who developed differently than his or her peers.

One of the main problems for children and adults with MSDs is the difficulty in expressing their emotions, feelings, needs and experiences. Correctional pedagogy pays considerable attention to art therapy techniques in the development and adaptation of children and adults with MSDs. One of such techniques is dance therapy.

In the framework of the article, a year-long plan for dance therapy lessons was implemented in the educational process of Vinnytsia Centre for Social Rehabilitation of Children with Special Needs “Promin” (Ukraine). The educational aim of dance therapy lessons was to familiarize persons with MSDs with the basics of choreography, develop their interpersonal skills, expand their views about dance therapists and prepare them for life in society.

The correctional and developmental aim of dance rehabilitation lessons in dance therapy in the formative experiment was to develop the motor and emotional repertoire of persons with MSDs, their spontaneous actions and ability to verbally discuss their psycho-emotional state, personality, aesthetic awareness and social activity.

The educational aim of dance therapy lessons was to foster a friendly attitude of persons with MSDs towards one another, develop their aesthetic taste and enable them to experience the beauty of music and dance.

Accordingly, the article **aims** to summarize the finding on dance therapy in terms of correction for individuals with MSDs and describe the results from the implementation of the above-mentioned programme within the quasi-experiment.

The hypothesis of the article is the assumption that manifestations of social adaptability of individuals with MSDs, rather than the state of health, should improve.

The international significance of the article lies in the fact that its groundwork can be a starting point for developing social adaptation programmes based on dance therapy in post-Soviet countries, which has not yet become widespread.

Dance Therapy of Individuals with MSDs in Scientific Discourse

It is essential to consider the main aspects of using dance therapy in the case of MSDs.

Lack of physical activity and low motivation towards it constitute a major risk factor for various disorders, low quality of life and long-term hospitalization. Thus, the search for alternative ways of rehabilitation (sports, dancing, motor exercises) lies in important neurophysiological and social prospects for the treatment of individuals with MSDs.

Many medical and neurorehabilitation studies justify the use of dance and other sports in the rehabilitation of individuals with MSDs. Yarnall, Rochester, & Burn (2011) claim that the most common dysfunctions in Parkinson's disease are attention deficit, translational instability and other dysfunctions that "may be due to changes in cortical and non-cortical structures". Dancing itself can gradually compensate for motor dysfunction and reduce attention deficit during stage performances for spectators who have similar disorders.

It is known that dance therapy can have a positive effect on motor functions, train concentration, increase physical strength, endurance and teach complex but harmonious motor exercises, including dancing (De Dreu et al., 2012).

Also noteworthy are the observations of self-therapy. Herman (2019), a professional dancer with cerebral palsy, describes his own experience of dancing and states that the rehabilitation potential of dancing exceeds physical correction. In addition to equalizing movement asymmetries in cerebral palsy, dancing acts as a driver of social, psychological and even economic changes (ability to work and perform different actions). It can also become a new model of rehabilitation. An important aspect of such rehabilitation is the absence of external intervention and the actualization of the patient's internal potential, which improves mood, self-identification and self-realization. Overcoming "the complex of a dancer with special needs" allows one to reduce the stigmatization of social participation of individuals with MSDs.

Regarding the elderly population, physical activity, as well as dancing, improves the balance of movements (balance, the risk of falling) and the translational pathology already after three months (according to

experimental studies) (Filar-Mierzwa et al., 2017a). This experiment was conducted on a sample of 24 women with an average age of 66,4 years old and showed an increase in resistance by almost 18%.

Lately, dancing as a means of therapy has been used in narrow contexts. Based on a five-month programme of dance therapy, researchers analyzed its effects on certain haematological and rheological parameters in elder women. They proved a significant increase in the level of haematocrit and erythrocytes, as well as a certain increase in plasma viscosity (Filar-Mierzwa et al., 2017b). Although the rest of the biochemical indicators of health remained unchanged, the above-mentioned indicators confirmed the effectiveness of dance therapy for elderly women. The main conclusion is that dance therapy contributes to preserving permanent homeostasis in the elderly.

Also, researchers prove the psychotherapeutic effect of regular use of dance movements. Such activities actualize the transition to a new model of social rehabilitation. Clinical examples put this into practice, illustrating the ways through which one can work with unconscious projections when playing and include dancing in the social model of physical challenges (Frizell, 2017). It shows that dance therapy may not be an additional or alternative method of rehabilitation but its central core (in terms of medical indications for such therapy).

Dance therapy is used for motor rehabilitation of injuries. Also, it acts as a means of an individual approach to correction. For those who have significant neurological disorders (including cerebral palsy), dancing has become a new kind of symbolic release of emotions and thoughts, most frequently negative. Art therapy allows individuals with musculoskeletal disorders to find a new channel of group communication. This is rather important for individual national and cultural communities since folk dancing contains coded archetypes specific to a particular nation. Indeed, dance/movement therapy can rely on folk dance and specific cultural forms to address universal themes (Serlin, 2020). Therefore, dance therapy and rehabilitation programmes should take into account ethnonational values and traditions.

Both systematic review and meta-analysis of physical, cognitive, psychological and social results of dance therapy for children with special needs prove that of the twenty-three selected parameters, seventeen experienced positive dynamics (May et al., 2021). The inefficiency of other indicators was traditionally explained by the weak methodology of the adapted dance therapy programme and, accordingly, the low inclusion of

children in it. The greatest results were achieved in terms of improving balance and making sharp movements and jumps.

Dance therapy is an integrative tool and an essential component of social rehabilitation of persons with MSDs, which promotes their overall development and the establishment of their contacts with society. Different aspects of the problem under study are covered in the works of many scholars (Akotov, 2003; Ahlskog, 2011; Bakhmat, et al., 2019; Behas et al., 2019; Bezliudnyi et al., 2019; De Natale et al., 2017; Gerasymova et al., 2019; Halaidiuk et al., 2018; Maksymchuk et al., 2018; Melnyk et al., 2019; Nerubasska, & Maksymchuk, 2020; Sheremet et al., 2019; Sitovskyi et al., 2019).

The Necessary Social Effects for Individuals with MSDs

A protective strategy for “boosting” one’s self-esteem may be the mechanism of narcissistic compensation when the need to prove one’s extraordinariness and superiority in other fields becomes a defence against the devaluing perception of one’s limited abilities. Accordingly, the child needs to achieve significant success and recognition in any field. Being ahead of others protects against the realization that “I am worse than others because of my limited abilities”. The areas of such compensation can be different: academic study, creativity. The intensity of investments can lead to the development of particular abilities and real achievements. Still, it sometimes becomes an obstacle to psychological adaptation and integration. The feeling of success acts as a drug; it gives temporary euphoria, which is not a real feeling of happiness. This short-term feeling is always followed by “withdrawal syndrome”, which causes an urgent need for “a new dose”. Such compensatory actions fail to make a person happy and subsequently deteriorate personality development without self-acceptance. It makes the person even more lonely and unhappy. Providing there are no compensatory achievements in reality, they can turn into fantasies and reach such a degree that can seriously complicate the social adaptation of persons with MSDs. Such fantasies can lead to mental pathology, given the lack of support in the environment of realistic self-perception and the development of healthy self-esteem.

A social rehabilitation specialist when interacting with a child with special needs deals not with the illness or the defect itself but with their consequences, that is, secondary disorders. Vygotsky (1983) introduced the concept of “secondary disorder”. Studying the specifics of typical and atypical child development, he indicated that any physical defect could cause social distortion in the child’s behaviour. A child born with physical or

mental disorders takes a particular social position, even in his or her family, and his or her relationships with others develop differently. Consequently, these disorders negatively affect any physical activities of the child and, above all, break the whole complex of relationships that determine the functions of the child's social behaviour.

Social deviance is a significant factor in the emergence of secondary disorders. It is a defect that in one way or another interferes with communication, inhibits the acquisition of knowledge and skills. Psychopedagogical correction of complications which has not been timely implemented leads to pronounced secondary microsocial and pedagogical neglect, several disorders in the emotional and personal spheres related to the constant feeling of failure (low self-esteem, ASD characteristics) (Vygotsky, 1982).

The specifics of secondary disorders in children with developmental disorders largely depends on the environment, specially organized training, education and social rehabilitation. An individual who faces some limitations in life can conflict with the environment when comprehending his or her behaviour or comparing himself or herself to other people (Dobryakova, & Shchedrina, 2004).

It is difficult for outsiders who have observed dance therapy lessons to see the processes taking place during such lessons. It is even more difficult to talk or write about dance therapy for children and adults with MSDs. Therefore, dance therapists should be able to tell what they are doing, how they are doing it and what changes are taking place so that dance therapy can be recognized as a full-fledged method of rehabilitation and take a proper place in the system of social rehabilitation for children and adults with special needs. The only way for them to do it is to conduct research. Video recorded lessons are the documents that can make this much-needed research possible.

Quasi-Experimental Verification of the One-Year Dance Therapy Programme in the Rehabilitation of Individuals with MSDs

The quasi-experimental group (QEG) consists of 40 leavers (18 males and 22 females) from the Vinnytsia Centre for Social Rehabilitation of Children with Special Needs "Promin", who were diagnosed with cerebral palsy (CP) and six leavers with mild mental disorders. The age requirement for this group is 14-19 years old. The control group (CG) consists of 40 persons diagnosed with CP and seven persons with mild mental disorders (23 males and 17 females). All respondents or their parents (concerning children) gave written consent to participate in the quasi-experiment.

Dance therapy lessons of an hour's duration were held in rehabilitation groups for persons with MSDs once a week. Also, 44 hours were allocated for individual classes for persons with MSDs. The thematic planning of dance therapy lessons elaborated during the formative experiment is shown in Table 1.

The dance therapist can use various techniques depending on the person's problem. The most common techniques are breathing, body integration, bodily anchor, bodily and sensual intonation, reflection, working with body pictures and learning functional body language. The therapist first dances himself or herself to inspire persons with MSDs to dance.

Dance therapy lessons for persons with MSDs intend to destroy their stereotypes, remove stiffness and expand the boundaries of communication with the surrounding world.

Every lesson is divided into four parts:

- 1) organizing the place;
- 2) practising free associations and expressing them to others;
- 3) relaxing;
- 4) expressing one's feelings, understanding music, nature, conveying them on paper.

Dance therapy lessons aim to develop creativity, foster awareness of oneself as a person, correct and solve psychophysical problems of persons with MSDs, boost their self-esteem, improve their coordination and posture, unlock muscle tightness and relieve local tension in muscles.

Table 1. *A year-long plan for dance therapy lessons*
Source: Authors' own conception

Topic	The number of hours
Body limits and joint mobility.	1 h
The image of a physical body.	2 hrs
Autumn. What feelings does it conjure up?	1 h
The paints of autumn. The sounds of autumn. The dance of autumn.	1 h
The paints of my mood. The dance of my mood.	1 h
The sculpture of my mood.	1 h
A plastic reflection of emotions.	1 h
Playdough as a technique of expressing emotions through motion and playdough moulding.	1 h
Winter. What feelings does it conjure up?	2 hrs
The paints of winter. The sounds of winter. The dance of winter.	1 h
The harmonization of experiences. Viewing pictures and their	1 h

sound recording. Making the picture move.	1 h
The harmonization of experiences.	1 h
Livening up colours: making them sound, sculpturing them, dancing with them.	1 h
The harmonization of experiences.	1 h
Livening up sounds: studying them in motion, drawing them.	1 h
The harmonization of experiences. The dance of voice.	1 h
The links between motion and voice.	1 h
The Stop & Go technique and its types. Practising self-control skills.	1 h.
Free motion and pause.	1 h
The inertia of motion. Holding and switching attention in motion.	1 h
Motional intention and following it.	2 hrs
Spring. What feelings does it conjure up?	1 h
The paints of spring. The sounds of spring. The dance of spring.	2 hrs
Watching a movie about the history of classical ballet.	1 h
Enriching the motor repertoire with new dance elements.	2 hrs
Watching a movie about the history of Ukrainian folk dance.	2 hrs
Enriching the motor repertoire with new dance elements.	1 h
Modern dance and its styles. Watching videos.	1 h
Enriching the motor repertoire with new dance elements.	2 hrs
My family. Communication in my family. A family picture. A family dance. A family sculpture.	1 h
My friends. Communication with friends. A friendship picture. The dance of friendship. The sculpture of friendship.	1 h
My world – what's it like? How do I feel in this world? The picture of my world. The dance of my world. The sculpture of my world.	1 h
I am who I am. The dance of myself.	1 h
Me – Who do I want to be? The dance of my future.	2 hrs
The real me and the perfect me. The development path.	1 h
The dance therapist.	1 h
Summaries	1 h

The dance therapist discusses each lesson with a practical psychologist to clarify the dance therapy programme for the further development of every child.

The organized social and psychological work aimed at developing the interaction of persons with MSDs with a healthy environment has helped to change the focus on how peers treat them and their health disorders, how they can improve the attitude of other people towards themselves and build

partnerships with them. The results of the experiment are presented in Table 2.

Table 2. *The interaction of persons with MSDs in society*

Source: Authors' own conception

Attitude	QEG		CG	
	Before experiment	After experiment	Before experiment	After experiment
	%	%	%	%
Kindness	45	77.5	45	50
Affection	40	45	42.5	42.5
Trust	37.5	55	40	42.5
Understanding	65	77.5	67.6	72.5
Helpfulness	62.5	77.5	60	65
Friendliness	40	57.5	37.5	42.5
Attention	37.5	47.5	40	42.5
Tactfulness	35	47.5	37.5	40
Disregard	5	0	7.5	2.5
Apathy	10	2.5	12.5	5
Disgust	5	2.5	7.5	5
Abuse	5	2.5	7.5	7.5
Indifference	7.5	5	5	5
Repulsion	5	2.5	5	5
Fear	5	2.5	7.5	5

** The total score in all tables exceeds 100% as the respondents made several choices.*

The success of socialization of persons with MSDs depends, to a large extent, on personal motivation towards changes in their lives. The specialists of the centre of social rehabilitation have paid considerable attention to developing an active position of persons with MSDs regarding the prospects of their lives during the experiment. The results of the experiment are presented in Table 3.

Table 3. *Life plans of persons with MSDs after completing the course of social rehabilitation at the centre*

Source: Authors' own conception

Plans after completing the course of social rehabilitation at the centre?	QEG		CG	
	Before experiment	After experiment	Before experiment	After experiment
	%	%	%	%

Further studying	4.5	57.5	45	50
Working	40	45	42.5	47.5
Realizing one's opportunities	25	47.5	22.5	27.5
Planning the next steps	15	7.5	12.5	12.5
Relaxing	5	2.5	5	7.5

Therefore, rehabilitation centres must contribute to the professional and personal development of persons with MSDs.

All activities of specialists from the career guidance centre for persons with MSDs aim to increase their motivation to acquire the necessary skills for further study and employment. In this regard, group and individual lessons were conducted. The results of the experiment are presented in Tables 4 and 5.

Table 4. *Motives for further education of persons with MSDs*

Source: Authors' own conception

Motives for further study	QEG		CG	
	Before experiment	After experiment	Before experiment	After experiment
		%	%	%
Obtaining employment	52.5	72.5	55	60
Entering a desirable profession	45	55	47.5	52.5
Achieving success in life	35	47.5	32.5	35
Acquiring fundamental knowledge	25	52.5	22.5	32.5
Achieving independence	25	42.5	27.5	32.5
Managing one's life	20	27.5	17.5	22.5
The need for further study	37.5	47.5	35	37.5

Thus, further study can be considered as a leading means of improving the socialization of persons with MSDs. Consequently, it is essential to create an effective system of inclusive education at all levels and develop a system of social support for the employment of adults with MSDs.

Table 5. *Motives for the employment of persons with MSDs*
Source: Authors' own conception

Motives for employment	EG		CG	
	Before experiment	After experiment	Before experiment	After experiment
	%	%	%	%
Pursuit of work	60	77.5	62.5	70
Persistence	37.5	52.5	37.5	42.5
Hope	32.5	42.5	32.5	35
One's physical ability	27.5	37.5	27.5	30
Practical working skills	25	47.5	25	32.5
Obtained education	20	25	20	22.5

Conclusions

Physical activity, as an aspect of rehabilitation, is quite essential for all children with special needs. However, it is twice as important to children with CP. Therefore, the main categories for this group are corrective physical exercises, correction of MSDs (in limbs, spine), strengthening of muscles, improvement of joint mobility (prevention or development of contractures) and in-hand manipulation (fingers).

The introduction of dance therapy into the system of social rehabilitation of adults and children with special needs enables persons with MSDs to develop independence, train relaxation skills and concentration, enhance the creativity of the inner self, creative imagination, reduce tension in the team, listen to and hear others better, relieve body tension, enhance communication skills, develop intellectually in the field of various arts, identify and correct problems in a particular child and children groups.

The persons with MSDs needed help to learn how to feel their body and body limits. After they began to understand their body, they managed to learn to control it. Dance therapy has allowed persons with MSDs to build their holistic body image.

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