

The Role of Martial Arts Means for the Therapeutic Recuperation Programs

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DOI: 10.31080/ASOR.2022.05.0441

Received: December 22, 2021

Published: March 07, 2022

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Abstract

Background: The contemporary lifestyle evolution is followed by a progressive abandon of physical activities in day by day life, this fact leads to an epidemics of obesity and increase of chronic diseases such as cardiovascular and locomotor diseases.

Methods: The study was established on the basis of an retrospective analysis of the special literature and scientific documents which represent the experimental data made by various medical clinics worldwide on various population.

Results: The conducted retrospective analysis of the musculoskeletal system in school and student age in different countries has shown that during the study period there is a dynamics of increasing detection of disorders of posture, hearing, vision. Also, a number of characteristic disorders of the musculoskeletal system have been identified, where in the first place are various kinds of morphofunctional disorders of the spine, scoliosis of I-II degrees and osteochondrosis in the initial stage and other pathologies.

Furthermore, types of interventions that have been tested in different medical clinics have been analysed, most of them with minimal or no outcome. According to the data on the application of martial arts tools, the therapeutic effect of Pilates, Yoga, Qigong, Wushu and Tai Chi tools has been highlighted. Of all the martial arts systems presented by the authors, Tai Chi reported a particularly multilateral effect.

Conclusion: The present study can lead to the conclusion that the martial arts means and Tai Chi in particular represent an universal method of restorative physical education. Tai Chi gymnastics brings to normal all body vital processes, it is recommended not only for disease prophylaxis but also for the treatment of some cardiovascular system, digestive tract, locomotor apparatus diseases.

Keywords: Tai Chi; Exercise; Treatment; Methods; Locomotor Apparatus; Therapy

Introduction

The decrease of physical health and physical fitness indices in children, young people and adults, low level of motor activity, decline of work and recreation conditions, environment situation, life quality of people in Moldova and other countries became a serious medical and social problem [1-9].

The contemporary lifestyle evolution is followed by a progressive neglect of physical activities in favor of professional and daily activities. The increase of sedentary work deprives the majority

of the population of a physical stimulation necessary for balance and a good health [10]. The obesity epidemics and the increase of chronic diseases, such as cardiovascular or locomotor diseases are often linked to this phenomenon [2,10-15].

This reality demands from authorities, health and sport specialists a meticulous examination of the possibilities to influence the lifestyle habits, well-being and health with the use of different physical activity promotion strategies [10,15].

The oriental health improving loco motor systems include knowledge and traditions that are to be analyzed as universal health standards [16]. At the moment the oriental health improving systems are very popular among Moldovan population, and first of all among students. Moreover, at the present stage in Moldova are actively developing different types of combat sports [17,18]. Only in Chisinau are about 15 federations and associations for different types of oriental health improving combat system, yoga, Aikido, Judo, Ashihara karate, Taekwondo WTF, Taekwondo - do ITF and GTF, Kyokushinkai karate do, Shotokan karate do, Hapkido, Muay Thai, Hodzuyu-Ryu karate, Capoeira, Wushu, Kung Fu, Tai Chi and other types of combat [Polevaia]. The Wushu, Kung Fu and Tai chi oriental combats traditionally have two directions, i.e. combat style and health improving gymnastics [10,13]:

- The Tai Chi martial art (Great Boundary Fist) - vividly represents the concept of "use a little to overcome something bigger" and it is similar to such systems as Judo and Aikido.
- Health improving gymnastics - this is a complex of forms related to breathing exercises and meditation. In the process of its execution all the body systems start working in a coordinated manner and recover their initial harmonious program.

At the same time, in the Republic of Moldova there is a bigger development of sport motor activity and self -defense systems for participation in competitions [17,18]. But the system of health -improving and preventive direction, which is the basis of rhythmic, slow meditative movements that contribute to relaxation and calm, is not sufficiently studied [6].

That is why we consider that the scientific approach towards the study and the elaboration of oriental health - improving systems with the aim of health promotion and diseases prevention at present time is a theme of uppermost relevance.

The research objective is to establish a possible use of martial arts means within the framework of therapeutic recovery programs.

Materials and Methods

Our study was based on the analysis of specialized literature, scientific documents, which represent experimental data obtained in different clinical units in different countries from a variety of population.

According to statistical data analysis [19], 75-85% of young people have a certain disease of the locomotor tract. The main cause that leads to posture deformation is a sedentary lifestyle, which provokes the muscle tonus decrease, which, in its turn, ensures the vertical position of the spine. The majority of authors [19,20] consider that namely the pectoral muscle sling atrophy generates the locomotor apparatus diseases, especially scoliosis [9].

The research group of authors [9] presented the results of the research on the problem of medical examination of children of the decreed ages in the Republic of Tatarstan throughout the school year period. The presented data on the on the structure and frequency of locomotor apparatus diseases in 190 834 school aged children, among which are included 45 059 children with orthopedic pathology. There was a high frequency of scoliosis, lower - limb varus and valgus deformity, flatfoot, osteochondropathy and deformity of musculoskeletal system. Over the school year period there is identified and increase of identifying the cases of posture deformity three fold, scoliosis 15 time (with $p < 0.05$) [9]. The third link - musculoskeletal deformities - deserves special attention (Figure 1).

Figure 1: Increase dynamics of the identification of the locomotor disorders apparatus in school aged children for a period of four study years [21].

Furthermore, a group of researchers [22] has identified a series of characteristic locomotor apparatus disorders in students which limit their daily motor activity. The identified disorders eventually leads to incomplete socialization of the young generation, crisis increase of the given age, and the induction of the inner conflict related to the discrepancy between reality and the set goals.

On the first place are different morphological and functional spine disorders, the authors have identified I-II-degree scoliosis and initial stage osteochondrosis [23].

The main symptom of these diseases is back pain, which has a significant influence on life quality and labor capacity [2]. It is alarming the fact that younger and younger people, even children, are affected by locomotor apparatus disorders that manifest by acute or chronic pain.

While studying this problem, some authors, such as Costa Lda. C., *et al.* [12] considers that beside the numerous applied pain treatments, about 43% of patients will have the same symptoms three or more months later and will have persistent back pain. Moreover, people with these disorders, as a rule, complain also on reduction of the motor function and psychological stress intensification, which leads to labour capacity decrease [12].

A recent study made by Chou R, Huffman L.H. [11] about the non- medicated treatment of persistent back pain, there were analyzed 16 types of interventions that were tested in medical clinics, the majority of them having a minimal or null result. Physical exercise therapy was proven to be one of the most effective treatment methods, showing results with small and moderate changes [14].

Besides health improving gymnastics for the spine pathology treatment, there are other efficient methods. Nowadays there is an increase in popularity of the oriental gymnastics types, such as Pilates, Yoga, Qigong, Wushu and Tai Chi [10,16,19,25-27]. Unfortunately, in our country they are not paid sufficient attention and are underdeveloped.

Tai Chi, coming from China, is a form of light physical exercises which include balance, invigoration, muscle stretching and body activation, and it is widely practiced in Asia for health maintenance and general well-being. At present it is widely developing in such countries as Australia, Canada, Great Britain and USA, being used for the prevention and treatment of different diseases [13].

The increase of use and recognition of Tai Chi for health problems led to the necessity of some scientific research for the determination of its value [13]. All these factor had motivated us to make a research study of the efficiency of the Tai Chi technique on the persistent pain of the locomotor apparatus.

The research results are based on the research studies published by A.M. Hall, C.G. Maher, P. Lam, M. Ferreira, J. Latimer [13] in the Arthritis Care & Research magazine, the authors have present-

ed an experiment made with 160 subjects with the age between 18 and 70 that reported persistent non -specific back pain. Participants were divided in two groups. To the first group was applied a complex of Tai Chi exercises and techniques. The second group of participants continued their normal health and fitness routine that was established by the doctor and their personal coaches. Both groups, during the training period, were asked to appreciate the pain intensity in conformity with the following tests: „The Roland-Morris Disability Questionnaire (RMDQ)”, The Pain Disability Index (PDI)” și The Quebec Back Pain Disability Scale (QBPDS)” [13].

In conformity with the research principle the subjects of the first group participated at 18 workout sessions in 10 weeks (twice a week during 8 week and once a week during 2 weeks), keeping the usual daily routine and alimentation and refraining from other sport activities, including health recovering activity [13].

Tai Chi sessions were divided into 40 minutes training sessions that included general muscle warm up and their relaxation after the session. Every session was made under the direction of an instructor specialized in Tai Chi. [13] special attention was paid to back muscles strengthening and formation of a correct posture, because it is considered that the incorrect spine posture generates all the diseases. The correct spine posture balances all nervous system functions, all body systems become stronger, heart and lungs activity increases [25].

After 10 weeks the subjects that practiced Tai chi reported that there was a 10% decrease of pain and it became 13% less bothering. In comparison, the subjects of the other group reported an increase in pain intensity. The Tai Chi group reported also, a significant improvement of the disability level [28].

The therapeutic effect of Tai Chi gymnastics was noticed by V. M. Smolevskii and B. C. Ivlev in their work “Non traditional types of gymnastics” [26]. Moreover, V. C. Volcov [16] considers that the Tai Chi healing effect is caused by the harmony of movements, body position and breathing. The use of a certain sequence of movements and attention concentration to certain body parts leads to muscular tension decrease and the psychological balance is recovered. There is self -healing, all vital body processes return to normal. In the opinion of V. C. Volcov and L. Shuhei [16,27], Tai Chi gymnastics has an influence on the following systems: cardiovascular, respiratory, digestive, excretory, reproductive, skeletomuscular.

Conclusion

After the analysis of the specialty literature and scientific documents in this field, we came to the established that Tai Chi is a universal method of recovery physical education. It has moderate effect in pain decrease and increase of the motor function, which is similar to other methods based on physical exercises rated in medical clinics. Being in control of difficult movement coordination, simultaneous participation of numerous muscles and articulations in a process of harmonious movements, concentration and calm during their execution lead to continuous changes in different physiological body systems. That is why Tai Chi is recommended not only for disease prophylaxis, but also for the treatment of certain diseases of the cardiovascular system, digestive tract, locomotor apparatus etc.

We consider that this alternative recovery method could play an important role in recovery physical education. Tai Chi elements can be adapted for the treatment of concrete diseases, or they can be combined with other recovery methods of physical education for an optimal result.

Further Research Perspective

There are especially relevant the research and development of therapeutical methodologies by means of oriental health -recovery systems with the aim of recovery and prophylaxis of the locomotor apparatus diseases, which nowadays is not sufficiently studied.

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