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ORIGINAL ARTICLE

EFFECT OF TAICHI TRAINING ON MOTOR FITNESS PARAMETERS OF HIGH SCHOOL BOYS

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Abstract:

Aim: The aim of the study was to examine the motor fitness parameters (Flexibility, Balance and muscular strength) of high school boys after participating in 8 weeks taichi training programme.
Background: Regular physical exercise is well known to be an effective intervention in maintaining and improving the physical and mental health. Tai Chi exercise is considered to offer great potential for health promotion and rehabilitation, particularly in the maintenance of good mental and physical condition.
Methods: Thirty high school boys were randomly selected. The selected subjects were divided into two equal groups consisting of fifteen each. They carried out 8 weeks of taichi training programme. Flexibility (sit and reach test), muscular strength (modified sit ups test), and balance (stork balance stand test) were measured before and after the training period.
Results: At post test, the experimental group significantly improved the flexibility, muscular strength and balance.
Conclusions: The findings reveal that Tai chi training programme can safely improve motor fitness parameters in high school boys.

KEYWORDS:

1. Taichi training 2. Motor fitness 3. Flexibility 4. Muscular Strength 5. Balance.

INTRODUCTION

Regular physical exercise is well known to be an effective intervention in maintaining and improving the physical and mental health. (Landers & Arent 2001; Shepard 1997; McAuley & Rudolph 1995). In addition to the traditional Western forms of aerobic physical exercise, such as jogging, swimming, and cycling, alternative modes of physical activity have the potential to be equally beneficial, yet more culturally appropriate, to some elderly ethnic groups. One such activity, Tai Chi, is an ancient form of a traditional Chinese physical exercise that has been practiced for self defense and health promotion for centuries (Yan & Downing 1998; Liang 1977). Tai Chi exercise is known as an alternative approach to physical fitness and a low-impact fitness exercise which consists of slow, continuous and graceful body movements. Tai Chi exercise is an ideal mind-body exercise for people of different ages and with different physical and health conditions (Reid 1988).Tai Chi adopts a holistic approach of balancing the interaction between mind and body, with its physical movements having similar benefits to walking, whereas its cognitive aspect resembles a mental state of meditation (Zhuo et al. 1984; Liang 1977). Thus, Tai Chi involves cognitive, cardiovascular and musculoskeletal responses that lead to measurable physiologic (Lan et al. 1999; Young et al. 1999) and psychological improvements (Brown et al. 1995; Jin 1992). These benefits may include the maintenance of greater mobility and flexibility in the musculoskeletal system (Li et al. 2002; Li et al. 2001; Hong et al. 2000; Da-Hong 1982), because Tai Chi exercise includes a series of individual dance-like movements linked together in a continuous sequence. Tai Chi has also has been

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shown to improve several aspects of health-related fitness, including cardio respiratory performance, balance, muscular strength, and a reduction in the risk of falling in older adults (Tsang et al. 2004; Wu 2002; Hong et al. 2000; Sandlund & Norlander 2000; Lan et al. 1998; Wolf et al. 1996; Wolfson et al. 1996; Jin 1992).

Tai Chi movements incorporate elements of strengthening, balance, postural alignment, and concentration, and hence Tai Chi exercise has been recently used with older adults for fall prevention (Wu 2002). Tai Chi is an ancient Chinese martial art consisting of a series of slow but continuous movements of many parts of the body. Older adults enjoy Tai Chi exercise because it can be performed at any time and place without special equipment. The forms of Sun-style Tai Chi exercise are characterized by slow, continuous, and gentle motions with a higher stance than other Tai Chi styles, and hence are more suitable to the physical condition of older adults (Song et al., 2003). To date, however, no study has been conducted to investigate the effects of Tai Chi exercise and training on improving physical fitness parameters of high school boys. The present study was designed to examine such effects and to explore the possibility of offering an effective and enjoyable exercise alternative to traditional exercise approaches to high school boys.

METHODS

SUBJECTS

To achieve the purpose 30 school level boys randomly selected from Nilgiri district as subjects. They were divided into two groups. The group I was considered as control group and group II was considered as experimental group. The investigator did not made any attempt to equate the group. The control group was not given any exercise and the experimental group was given taichi training for five days per week. The experimental group was given training for the period of 8 weeks of taichi training. They understood the purpose of study and all procedures involved, and voluntarily consented to their participation.

DESIGN

The evaluated parameters were flexibility (sit and reach), muscular strength (modified sit-ups) and balance (stork balance stand test). The parameters were measured before and after the taichi training programme and the effects of the training programme were examined.

TAI CHI TRAINING

Experimental group subjects took part in a Tai Chi training program involving five, 45-minute sessions per week, over the entire 8 weeks intervention period. Each session consisted of a 10-minute warm-up, 25 minutes of Tai Chi practice, and a 10-minute cool-down. In addition, Tai Chi participants were encouraged to continue with any other physical activity to which they were accustomed.

DATAANALYSIS

Descriptive statistics such as mean and standard deviation were found in order to get basic idea of the data distribution. 't' test was done for finding whether there is any statistically significant pre-test to post-test mean differences in their respective variables of each groups.

Summary of mean and 't' test for the pre and post tests on flexibility, muscular strength and balance of control and experimental groups

Parameters	Group	Test	Mean	Standard deviation	Mean difference	't' ratio
Flexibility	CON	Pre	12.6	1.80	0.6	1.72
		Post	13.2	1.74		
	EXP	Pre	15.5	2.42	3.27	6.51*
		Post	18.8	2.18		
Muscular strength	CON	Pre	32.33	3.61	0.13	1.00
		Post	32.46	3.44		
	EXP	Pre	37.0	5.26	1.46	6.21*
		Post	38.47	4.82		
Balance	CON	Pre	24.83	7.72	0.03	1.22
		Post	24.86	7.69		
	EXP	Pre	25.83	8.78	3.17	3.85*
		Post	29.01	8.12		

*Significant at 0.05 level of confidence (2.145)

DISCUSSIONS

Ross et al., (1999) found that Tai Chi practitioners demonstrated improvements in balance, sway and range of motion.

Tai Chi exercise may be effective in improving an individual's ability to move and change body direction quickly. Tai Chi exercise involves a combination of frequent weight shifting, spatial orientations, and change in body movement directions (Reid 1988).

Regular Tai Chi exercise leads to improvement in postural stability, functional mobility and balance control (Hong et al. 2000; Lin et al. 2000; Ross et al. 1999; Wolf et al. 1996; Wolfson et al. 1996; Tse & Bailey 1992).

It is possible that the 8-week Tai Chi training in the present study contributed to improvements in flexibility, muscular strength, balance and body control of the participants and thus resulted in better performance in comparison to the control participants.

CONCLUSIONS

In light of the results of the study and the limits of the sample and the framework of statistical treatments used, the following was concluded:

It was concluded that eight weeks of Taichi training programme produced significant improvement in flexibility of school boys.
Eight weeks of Taichi strength training programme produced significant improvement in muscular strength of men handball players.
Further, it was also concluded that eight weeks of Taichi training programme produced significant improvement in the balance of school boys.

Taichi training is appropriate training protocol to bring out desirable changes over motor fitness parameters of school boys. Thus a continuous and systemic taichi training aimed at maximizing performance capacity should be applied to school boys. Tai Chi exercise is recognized as a low-intensity

exercise that can be safely and easily applied to high school boys.

RECOMMENDATIONS

It is necessary to raise awareness of the trainers with the importance of the taichi exercises in the direction of their significant influence on raising the physical fitness of school boys.
Studies should be conducted in the same area on different samples in terms of age and gender.
There is a need to undertake more researches in this area.

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