

Influence of Core Stabilization Training on Selected Health Related Fitness among Student with Hearing Impairment

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Abstract

The study focused on developing health related fitness on hearing impairment students. The investigator assessed influence of core stabilization training on selected health-related fitness among students with hearing impairment. To achieve this purpose of study, 20 children were selected from Coimbatore district, and their age ranged from 15 to 18 years. The selected subjects will be treated of the experimental group (n=10) and control group (n=10). The Experimental group was treated with core stabilization training for four days per week, for a period of 8 weeks and each training session scheduled for 45 minutes and for control group would not give any specific training, they were instructed to engage with their routine work. The dependent t test was used for the statistical technique. The findings of the study that there is a significant difference from the experimental and control group due to core stability training on health-related fitness variables of students with hearing impaired. This study was Concluded based on the data and statistical analysis there is a greater effect on the health correlated fitness of the experimental than control group due to core stability training of student with hearing impaired.

Keywords: Core, Stabilization, Training, Health, Fitness, Hearing Impaired.

INTRODUCTION

Core muscles, which play an important role in the functioning of the spine during the movement of the lower and upper extremities, are among the determining factors of sportive performance (Sever, 2016; Yıldız, 2012). Core strength, which represents the strength of all deep and superficial core muscles in the body, plays an important role in providing body control and increasing the quality of movement during difficult movements (Jones, 2013). As in many sports, the strength of the core muscles is very important in swimming. In all swimming styles (freestyle, backstroke, and butterfly), core strength is required to maintain horizontal stability of the body and legs in water (Cook et al., 2010). In addition, insufficient development of the core muscles may have a negative effect on the performance of the athletes by preventing the application of the techniques specific to swimming at the desired level (Willardson, 2014).

A person who is not able to hear as well as someone with normal hearing thresholds of 20 dB or better in both ears is said to have hearing loss. Hearing loss may be mild, moderate, severe, or profound. It can affect one ear or both ears and leads to difficulty in hearing conversational speech or loud sounds. 'Hard of hearing' refers to people with hearing loss ranging from mild to severe. People who are hard of hearing usually communicate through spoken language and can benefit from hearing aids, cochlear implants, and other assistive devices as well as captioning. 'Deaf' people mostly have profound hearing loss, which implies very little or no hearing. They often use sign language for communication ([WHO](#)). Physical fitness is to the human body what fine tuning is to an engine. It enables us to perform up to our potential. Fitness can be described as a condition that helps us look, feel, and do our best. Physical fitness involves the performance of the heart and lungs, and the muscles of the body. And, since what we do with our bodies also affects what we can do with our minds, fitness influences on some degree qualities such as mental alertness and emotional stability ([mit](#)).

'Physical fitness is a state of health and well-being. It develops your capacity to perform better in sports, your job and day-to-day routine work. This is achieved through moderate/vigorous physical activities, balanced diet, and proper recovery.' Regular planned fitness activities like walking, jogging, cycling, swimming, and yoga improve health and physical fitness of an individual. It also reduces the risk of heart diseases, diabetes, hypertension, and depression ([NCERT](#)).

Methods and Materials

To achieve the purpose of the study N=20 school children from Coimbatore district, Tamilnadu. Their age ranged from 15 to 18 years. The study was formulated as a true random group design, consisting of a pre- test and post-test. The subjects (N=20) were randomly assigned in to two groups namely Group-1 experimental group (n=10) and Group-2 Control group (n=10) of ten subjects each. The Experimental group will be treated with core stabilization training for four days per week, for the period of 8 weeks and each training session scheduled in 45 minutes. Pre-test was conducted on selected physical fitness variables: cardiovascular endurance, flexibility, and body composition for two groups. The readings were carefully recorded in their respective unit as pre-test score. After pre-test the experimental group underwent eight weeks of core stabilization training for four days per week for 45 minutes per day and control group was not given any specific training, they were instructed to engage with their routine work. After eight weeks of training, post test was conducted, and the reading carefully recorded as post test score. The pretest and post test data were statistically examined for significant difference through dependent 't' test for each variable selected for this study. The entire statistical analysis tests were computed at 0.05 was level of significance.

Results and Discussions

Table 1

Descriptive statistics and dependent 't' test value between pre and post-test on Health related Finess variables among Persons with Hearing Impairment

Variables	Group	Mean		S.D		't'
		Pre	Post	Pre	Post	
Cardiovascular Endurance	CSTG	950	929	164.99	181.85	3.48*
	CLG	925	937.6	163.72	159.09	1.90
Flexibility	CSTG	27.09	30.2	6.4	5.88	9*

	CLG	28.21	29.8	2.11	4.38	1.77
Body Composition	CSTG	26.7	25.3	5.54	5.5	8.57*
	CLG	29.8	30.2	3.82	3.77	1.81

*Significance at 0.05 level. CSTG-Core Stability Training Group; CLG-Control Group

Table 1 shows dependent ‘t’ value of cardiovascular endurance (3.48), flexibility (9), and body composition (8.57) was greater than table value of 2.26.

DICUSSION ON FINDINGS

Core exercises provides strength to muscle groups that keep the body in balance. Strength training without the basis of the core, restricts technical skills and increases the risk of injury. Core exercises enables athletes to apply their technical movements spending less energy as well as being exposed to the effects of fatigue less (McGill, 2004). In a study conducted by Sever (2017), it was found that static and dynamic core exercises applied to 38 football players and exercises had a positive effect on core stabilization and Stork balance performance. Smart et al. (2011) stated that although the core exercises applied for 8 weeks did not have a direct effect on tennis service, they had an indirect effect because of the strength development in the muscles.

In addition, there are different studies in the literature suggesting that applied core exercises and strength exercises improved basic motor skills and sport performance (Afyon & Boyacı, 2013; Basset & Leach, 2011). In a study conducted by Alattar et al.(2020), Severity of hearing impairment was associated with reduced performance and steeper decline for tests of global function (MMSE) and executive function (Trails B). These associations were independent of many potential confounders, including vascular disease and cardiovascular disease risk factors, and were unaffected by differential survival.

The analysis of the all the health-related fitness variables (cardiovascular endurance, flexibility, and body composition) of revealed that the after experimental period, the experimental training group had significantly increased the cardiovascular endurance, flexibility, and body composition of when compared with control group. Hence the obtained ‘t’ ratio was significantly greater than table value 2.26 at 0.05 level of confidence.

CONCLUSIONS

There is a significance difference from experimental and control group due to core stability training on health-related fitness variable of student with hearing impaired. There is a greater effect on body composition of experimental than control group due to core stability training of student with hearing impaired. This study was concluded eight weeks of core stability training and retention effects on improving health correlate fitness among persons with hearing impairment.

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