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Enhancing balance and coordination among hearing impairment school students through: Psycho motor training

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Abstract
In order to assess the real facts the investigator made an attempt to examine the effect of psychomotor training on balance and coordination of hearing impairment school students. To achieve the purpose of the study 30 Subjects from Coimbatore district. Their age ranged from 14 to 19 years. The subjects were randomly assigned to two equal groups. Group- I (n=15) underwent psychomotor group (PSTG) and Group – II (n=15) acted as control group (CG). The psychomotor training was given to the experimental group for the periods of 8 weeks. The control group was not given any sort of training except their routine work. The following variables were measured with standard test items: balance and coordination. Pre and post test was conducted on separate days with warmup. The balance assessed by stroke balance test with unit of measurements in seconds and coordination assessed by stick flip coordination test with unit of measurement in points. The data collected from the subjects were statistically analyzed using 't' test to find out whether significant mean difference existed at 0.05level of confidence. This study may help trainers to assess the applicability of psychomotor training to improve balance and coordination, one of the most important factors determining the school boys. Further, the findings confirmed the psychomotor training is suitable protocol to bring out the desirable changes over balance and coordination of hearing impairment of school students.

Keywords: Psychomotor training, balance, coordination, and hearing impairment school students

Introduction
Hearing impaired (HI) children can present hearing loss levels varying from mild to profound. The auditory deprivation and concomitant processes such as vestibular damage may interfere in the sensorimotor function, which produces an especial development of their psychomotor abilities. Psychomotor training enables children to change play through communication and interaction with other children, develop roles and rules for the self, develop an understanding of self and others, improve their communication ability and socialization skills through the process of finding pleasure, and develop self-confidence. Imagery may be considered as the voluntary or involuntary creation or recreation experience generated from memorial information involving quasi - sensorial, quasi - perceptional and quasi-affective characteristics which may occur in the absence of the real stimulus antecedents normally associated with the actual experience. It is normally assessed in terms of its cognitive and motivational attributes. Imagery conducted for sport performance is referred to as sport imagery, but can be used interchangeably with the boarder term mental imagery. Several other terms including mental practice, mental rehearsal and visualization have also been used to refer to various components of mental imagery in sport. The main purpose of using imagery into use mental training are for skill acquisition, skill maintenance, developing athletic plans and strategies, arousal and anxiety regulations, stress management, confidence, injury rehabilitation exercise behavior and concentration and attention.

Methodology
Experimental Approach to the Problem
In order to address the hypothesis presented herein, we selected 30 hearing impairment school students from Coimbatore District. Their age ranged from 14 to 19 years. The subjects were randomly assigned in to two equal groups namely, psychomotor training Group (PSTG) (n=15) and Control Group (CG) (n=15).

The respective training was given to the experimental group the 5 days per weeks for the training period of eight weeks. The control group was not given any sort of training except their routine.

Design

The evaluated parameters were balance assessed by stroke balance test with unit of measurements in seconds and coordination assessed by stick flip coordination test with unit of measurement in points. The parameters were measured at baseline and after 8 weeks of psychomotor training were examined. The intensity was increased once in two weeks based on the variation of the exercises.

Training programme

The training programme was lasted for 30 minutes for session in a day, 3 days in a week for a period of 8 weeks duration. These 30 minutes included warm up for 5 minutes, 20 minutes psychomotor training and 5 minutes warm down. The equivalent in psychomotor training is the length of the time each action in total 5 day per weeks (Monday, Tuesday, Wednesday, Thursday and Friday).

Table I: Computation of 't' ratio on balance on experimental group and control group

Groups	Pre test	Post test	Sd	Sem	"t" ratio
Experimental Group	20.52	21.46	1.86	1.57	4.69*
Control Group	20.40	20.41	1.67	1.66	0.77

*significant level 0.05 level (degree of freedom 2.14, 1 and 14)

Table I reveals the computation of mean, standard deviation and 't' ratio on selected variables namely balance of experimental group. The obtained 't' ratio on balance were 4.69 respectively. The required table value was 2.14 for the degrees of freedom 1 and 14 at the 0.05 level of significance. Since the obtained 't' values were greater than the table value it was found to be statistically significant.

Further the computation of mean, standard deviation and 't' ratio on selected variables parameters namely balance of control group. The obtained 't' ratio on balance were 0.77 respectively. The required table value was 2.14 for the degrees of freedom 1 and 14 at the 0.05 level of significance. Since the obtained 't' values were lesser than the table value it was found to be statistically not significant.

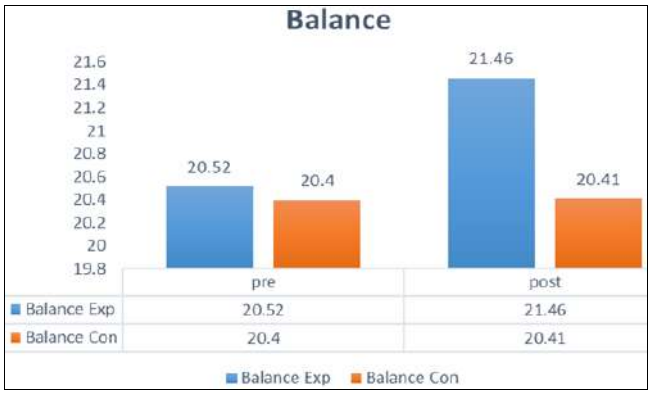

Fig 1: Bar diagram showing the mean value on balance on experimental group and control group

Table 2: Computation of 't' ratio on coordination on experimental group and control group

Groups	Pre test	Post test	Sd	Sem	"t" ratio
Experimental Group	25.80	29.47	1.42	0.77	7.23*
Control Group	25.90	25.04	2.09	0.89	1.32

*Significant level 0.05 level (degree of freedom 2.14, 1 and 14)

Table I reveals the computation of mean, standard deviation and 't' ratio on selected variables namely coordination of experimental group. The obtained 't' ratio on coordination were 7.23 respectively. The required table value was 2.14 for the degrees of freedom 1 and 14 at the 0.05 level of significance. Since the obtained 't' values were greater than the table value it was found to be statistically significant.

Further the computation of mean, standard deviation and 't' ratio on selected variables parameters namely coordination of control group. The obtained 't' ratio on coordination were 1.32 respectively. The required table value was 2.14 for the degrees of freedom 1 and 14 at the 0.05 level of significance. Since the obtained 't' values were lesser than the table value it was found to be statistically not significant.

Fig 2: Bar diagram showing the mean value on coordination on experimental group and control group

Discussion and findings

Hearing impairment children besides having difficulties in communication and language skills, also have deficits in their psychomotor skills that are important for the normal development of their emotions, actions and social activities. Therefore, it is important to contribute to the psychomotor development or this population. The present study experimented the influence of eight weeks psychomotor training on the selected parameters of the hearing impairment school students. The results of this study indicated that psychomotor training is more efficient to bring out desirable changes over the balance and coordination of the school students.

Wille *et al*. [2009] [7] designed an interactive application using virtual reality for motor rehabilitation of upper body limbs. They evaluated the system with children during 3 weeks. Results showed an improvement in their hand function. They also found that systems based on games encourage children to perform therapy activities without stress.

This review shows there is a lack of proposals of tools to support these children during their therapy or education. Therefore, this encourages us to participate actively in the generation of interactive systems which address the psychomotor development needs of the HI children in a motivating and engaging context. Hence, it concluded that for balance and coordination improvement of hearing impairment school students.

Conclusions

From the results of the study and discussion the following conclusions were drawn.

1. Based on the result of the study it was concluded that the 8 weeks training of psychomotor training have been significantly improved balance of school students.
2. The 8 weeks training of psychomotor training have been significantly improved coordination of school students.

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