

Music with Repeated Sprint Training Impacts on Respiratory Rate and Speed Performance of Students with Visual Impairment

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ABSTRACT

Visual impairment, also known as vision impairment, is a medical definition primarily measured based on an individual's better eye visual acuity; in the absence of treatment such as corrective eyewear, assistive devices, and medical treatment– visual impairment may cause the individual difficulties with normal daily tasks including reading and walking. **Visual or vision impairment (VI or VIP)** is the partial or total inability of visual perception. To achieve these study fifteen male students with visual impairment (b2) were selected from the, Star Special School in Coimbatore, Tamil Nadu. Their age ranged between 15 to 20 years. These subjects were gone for repeated sprint training on daily 60 minutes morning 6 to 7 am up to eight weeks. The selected respiratory rate assessed with manual method and speed performance assessed with 50 m dash. Pre and post-test data were collected and analyzed using the dependent 't' test, with a confidence level set at 0.05. The findings of the study revealed significant changes in respiratory rate and improvements in speed performance intervention of repeated sprint training.

Keywords: Music with Repeated Sprint Training, Visual Impairment and Respiratory Rate and Speed Performance

INTRODUCTION

Visually impaired individuals constitute some part of handicapped people who are experiencing non-ignorable challenges in the community. Learning is the most important element that allows people to adapt their environment and sustain their lives. Eyes and ears are the two most important sense organs that play a crucial role for learning (Caliskan et al., 2007).

Visual loss does not directly leads to loss of motor or physical function but developmental function because of insufficient physical activity, including inactivity, manipulating the environment and having limited experience with the environment. Delay in motor development is not seen in individuals who subsequently lost sight, but those who previously lost their sights may have delays in motor development (Ozer, 2001) Verbal Encouragement from a teacher is recognized as an external motivational tool that fosters positive effects on physical involvement and motivation to participate in training (Sahli, H et al., 2020)

Enhancing sports performance requires improvements on both physical and psychological fronts of particular importance among students are speed exercises, which demand substantial psychomotor capabilities (Hammami, R 2017). For example, speed and change-of-direction speed are very interesting physical qualities (Chmura, P et al., 2022).

The speed with which any given individual regains self-image is a function of many factors. (Chun et al 2019) included (a) one's view of the importance of his/her need to be outstanding in a positive way, (b) the effect of the impairment on life style, (c) one's prior attitudes toward blindness or visual impairment, (d) one's knowledge of blindness, and (e) the amount of emotion expended during the loss. Rapid recovery would be inhibited if, for example, one's physical beauty is important, if one's vocation is highly dependent on vision, if he/she knows little about blindness and/or he/she repressed emotional outflow during initial adjustment phases. It would appear that athletes who lost their sight might be among those most affected in terms of a" and "b" above. Athletes are, by definition, highly competitive and it would likely be difficult for a world class sprinter to face such a significant loss. Therefore, adventitiously visually impaired athletes may display some adjustment behaviors well after the sight loss. There is no evidence regarding the length of time it takes the average person to adjust, but it is not uncommon to see adjustment behaviors years after the loss. In addition, poor athletic performance, which often causes anger or depression in fully sighted athletes, might also be expected to trigger the return of some negative adjustment behaviors.

It should be noted that the list of factors affecting speed of adjustment that was presented above does not include how much vision was lost. In fact, it is highly usual to observe similar loss reactions throughout the loss continuum. Therefore, there is no reason to expect B1, B2 or B3 athletes to react differently. However, B2 and B3 athletes' vision commonly deteriorates during their lifetime, which may cause typical adjustment reactions with each new loss. Consequently, even those who have had low vision since birth, may display some adjustment behaviors after being visually impaired for 20 or 30 years.

Verbal instructions can also be supplemented by using auditory cues. For example, if the coach is attempting to get an athlete to walk to a specific piece of equipment, it commonly works best to place oneself at the point at which the athlete is being directed and simply tapping the equipment once or twice and saying: "The uneven bars are over here." Another helpful technique for directing persons with severely limited sight is by using the "**sighted guide technique**".

METHODOLOGY

To achieve these study fifteen male students with visual impairment (b2) were selected from the, Star Special School in Coimbatore, Tamil Nadu. The b2 category ability to recognize up to a distance of 2 meters. Visual acuity ranges from logMAR 1.5 to 2.60 (below 2/60) with best corrected vision and or with best corrected vision and or visual field of less 10⁰ degrees diameter. Their age ranged between 15 to 20 years. These subjects were gone for repeated sprint training on daily 60 minutes morning 6 to 7 am up to eight weeks. The selected respiratory rate assessed with manual method and speed performance assessed with 50 m dash. Pre and post-test data were collected and analyzed using the dependent 't' test, with a confidence level set at 0.05.

Training Program

Music With Repeated Sprint Training : Morning session 1 Hr/day -5 days up to eight weeks

Music with motivational speech and Guide rope running practices.

RESULTS

TABLE – I

COMPUTATION WITH ‘t’ TEST OF RESPIRATORY RATE ON EXPERIMENTAL GROUP ON STUDENTS WITH VISUAL IMPAIRMENT

Variable	Test	Pre Test	Post Test	S.D Error	D.M	σ DM	‘t’
Respiratory Rate	Mean	16.80	16.13	0.21	0.76	14	3.26*
	S.D	1.14	0.91				

*Significant

Level of significant was fixed at 0.05 with df 14 Table value 2.14

Table-I Indicates that experimental group of respiratory rate on mean and standard deviation of students with visual impairment. The experimental group pre and post - test mean values are 16.8 and 16.13 and standard deviation values are 1.14 and 0.91 and obtained ‘t’ value is 3.26 which is greater than table value 2.14 with df 14. The finding of the study indicates that experimental group significant reduction on respiratory rate due to music with repeated sprint training on students with visual impairment.

FIGURE-1

THE MEAN VALUES ARE EXPERIMENTAL GROUP OF PRE AND POST TEST OF RESPIRATORY RATE ON STUDENTS WITH VISUAL IMPAIRMENT.

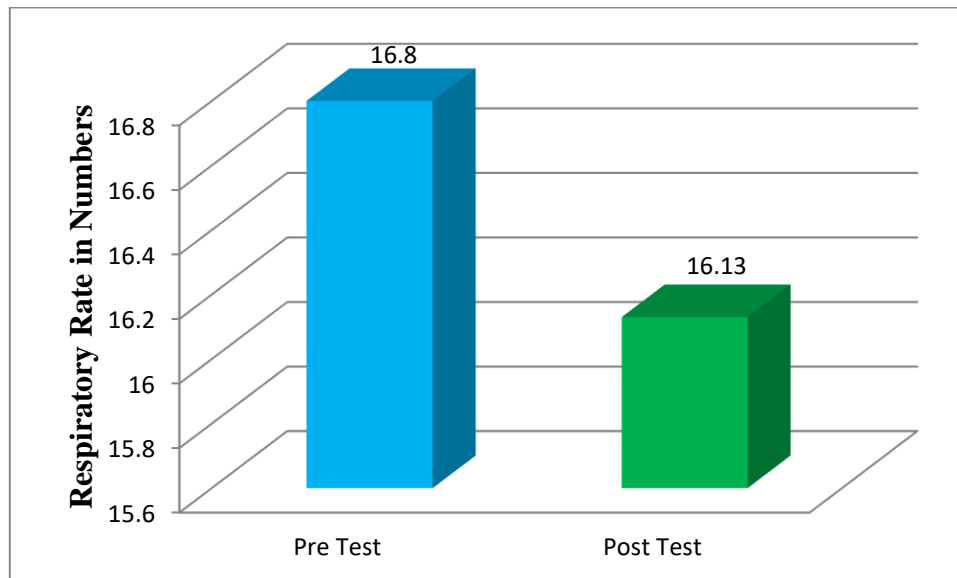


Figure: 1 clearly indicate that experimental group significant reduction of respiratory rate of students with visual impairment.

TABLE-II

COMPUTATION WITH ‘t’ TEST OF SPEED PERFORMANCE ON EXPERIMENTAL GROUP ON STUDENTS WITH VISUAL IMPAIRMENT

Variable	Test	Pre Test	Post Test	S.D Error	D.M	σ DM	‘t’
Speed Performance	Mean	11.67	11.39	0.04	0.37	14	6.84*
	S.D	0.60	0.55				

*Significant

Level of significant was fixed at 0.05 with df 14 Table value 2.14

Table-II Indicates that experimental group of speed performance on mean and standard deviation of students with visual impairment. The experimental group pre and post - test mean values are 11.67 and 11.39 and standard deviation values are 0.60 and 0.55 and obtained ‘t’ value is 6.84 which is greater than table value 2.14 with df 14. The finding of the study indicates that experimental group significant improvement on speed performance due to music with repeated sprint training on students with visual impairment.

FIGURE-2

THE MEAN VALUES ARE EXPERIMENTAL GROUP OF PRE AND POST TEST OF SPEED PERFORMANCE ON STUDENTS WITH VISUAL IMPAIRMENT.

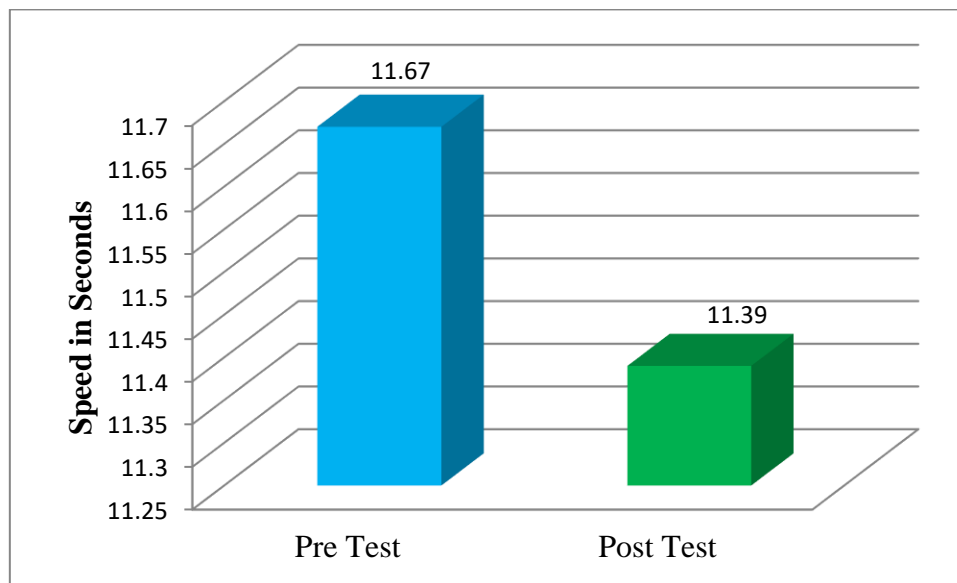


Figure: 2 clearly indicate that experimental group significant improvement on speed performance of students with visual impairment.

DISCUSSION ON FINDINGS

The results of the study indicate that significant improvement of the speed performance due to the music with repeated sprint training on respiratory rate, speed performance on students with visual impairment.) Effect of Verbal Encouragement on Performance and Affective Responses in Male Sport Science Students during Sprint Modalities (**Faten Sahli et al., .(2024)**). Getting a grip on the resilience to blur: The impact of simulated vision loss on a visually guided combat sports interaction (**Krabben et al., 2021**) The effects of simulated vision impairment on performance in football. (**Oliver R et al., 2023**) The major finding of this study showed that there was significant difference between the Jump and balance test in judo athletes with or without visual impairments (**Rocco Spera et.al 2019**).

CONCLUSIONS

1. It is concluded that experimental group significant reduction of respiratory rate on student with visual impairment due to the music with repeated sprint training.
2. It is concluded that experimental group significant improvement of speed performance on student with visual impairment due to the music with repeated sprint training.

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