

Effect of Yogic Practice and Saq Training on Selected Coordinative Abilities of Students with Hearing Impairment

M. Srinivasan, M. Ravi

Faculty of General & Adapted Physical Education and Yoga, Ramakrishna Mission Vivekananda University, Coimbatore, Tamil Nadu, India

Email address:

srinigodisgreat14@gmail.com (M. Srinivasan)

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Abstract: The purpose of the study is to find out the effect of yogic practice and SAQ training on selected co-coordinative abilities of students with hearing impairment. For this study, forty five hearing impairment male students were selected as subjects from who were hearing impairment students in Industrial Training Institute, Ramakrishna Mission Vidyalaya, Coimbatore, Tamil Nadu, Infant Jesus Higher Secondary School, P. N. Palayan, Coimbatore, Tamil Nadu and Deaf School, Coimbatore, Tamil Nadu. The study would be confined to hearing impairment men students between the age group of 12 to 18 years. The following criterion variables were selected for the study namely reaction ability and upper body differentiation ability. The training period was twelve weeks of three alternative days in every week. Data were collected from each subject before and after the twelve weeks of yogic practice and SAQ training. The collected data were statistically analyzed by using “t” ratio, ‘f’ ratio and Scheffe’s post hoc test. It is concluded that there is a significant improvement in reaction ability and upper body differentiation ability due to SAQ training, and Combined training of students with hearing impairment. And also concluded that combined training is better than yogic practice and SAQ training for improving reaction ability and upper body differentiation ability of students with hearing impairment. It is concluded that SAQ training is better than yogic practice for improving reaction ability and upper body differentiation ability of students with hearing impairment.

Keywords: Yoga, SAQ Training, Hearing Impairment, Coordinative Abilities, Reaction Ability, Differentiation Ability

1. Introduction

Yoga is a philosophy of life, based on certain psychological facts, and its aim is to development of a perfect balance between the body and mind, that permits union with the divine bliss. It is a perfect hormone between the individual and the cosmos. People from different ways of life can reach at the highest degree of knowledge through the discipline of yoga [6].

Yoga provides one of the best means of self-improvement and helps to attain one’s full potential. In the advanced stages of yoga the super conscious states are attained which results feeling of bliss, deep peace and the emergence of psychic powers. Yoga was developed and perfected over the centuries by the philosophers and the mystics in India. It is a basic method of increasing the body’s supply of energy and removes any interference to the transmission of energy throughout the body. Yoga has specialized on this subject for thousands of years, and stream lined the methods to attain the self-improvements in all the way of human life style [19].

Speed, agility and quickness training has become a popular way to train athletes. Whether they are school

children on a soccer field or professionals in a training camp, they can all benefit from speed, agility and quickness training. This method has been around for several years, but it is not used by all athletes primarily due to lack of education regarding the drills. Speed, agility and quickness training may be used to increase speed or strength, or the ability to exert maximal force during high-speed movements. It manipulates and capitalizes on the stretch-shortening cycle while bridging the gap between traditional resistance training and functional-specific movements. Some benefits of speed, agility and quickness training include increases in muscular power in all multiplanar movements, brain signal efficiency, kinesthetic or body spatial awareness, motor skills and reaction time [5].

2. Materials and Methods

2.1. Selection of Subjects

For this study, forty five hearing impairment men students were selected as subjects who were hearing impairment

students in Industrial Training Institute, Ramakrishna Mission Vidyalaya, Coimbatore, Tamil Nadu, Infant Jesus Higher Secondary School, Periyanaickenpalayan, Coimbatore, Tamil Nadu and Deaf School, Coimbatore, Tamil Nadu. The study would be confined to hearing impairment men students between the age group of 12 to 18 years.

2.2. Selection of Variables

The following criterion variables were selected for the study

2.2.1. Independent Variables

- a. Yogic practice
- b. SAQ training
- c. Combined training

2.2.2. Dependent Variables

- a. Reaction ability
- b. Upper body differentiation ability

2.3. Tools and Technics

- a. Reaction ability was measured by ball reaction exercise test and the unit of measurement is meters.
- b. Upper body differentiation ability was measured by backward medicine ball throw test and the unit of measurement is Centimeters.

3. Training Programme

The training period was twelve weeks of three alternative days in every week. Data were collected from each subject before and after the twelve weeks of yogic practice, SAQ training and combined training.

Table 1. Significance of mean gains & losses between pre and post Test scores on Reaction Ability of Yogic Practice SAQ Training and Combined Training Groups.

Group	Pre Test mean	Post Test mean	Mean diff.	Std. Dev	Std. Er. of mean	'T' ratio
Yogic practice group	2.937	2.902	0.035	0.133	0.034	1.032
SAQ group	2.932	2.538	0.394	0.399	0.103	3.815*
Combined training group	2.957	2.105	0.853	0.502	0.129	6.583*

(Table value for 0.05 level for df (1, 14) = 2.144)

An examination of table-1 indicates that the obtained 'T' ratios are 1.032, 3.815 and 6.583 for yogic practice group, SAQ training group and combined training group respectively. The obtained 'T' ratios of yogic practice group, SAQ Training group, and combined training group are found to be higher than the required table value of 2.144 at 0.05 level of significance for 1, 14 degrees of freedom. The obtained 'T' ratio of reaction ability of yogic practice group

3.1. List of Asanas and Pranayamas

Tadasana, Konasana, Ardhakatti Chakarasana, Pathahastasana, Vruksasana, Padmasana, Vajrasana, Yoga Mudra, Paschimotasana, Matsyasana, Shalabasana, Bhujangasana, Dhanurasana, Halasana, Shashangasana, Nadisuddhi, NadiShodhana, Kapalabhati, Bhramari, Bhastrika, Sitali, Sitkari, Ujjyai.

3.2. List of SAQ Exercises

Speed drills, Agility drills, Box drills, Speed and agility ladder drills, Dot drills, Line drills, Square drills, Cone drills, Movement drills, Running-Front drills, Miscellaneous drills, Up hills sprints.

4. Statistical Procedure

'T' ratio was used to find out the significant difference between the pre -test and post test of all the three groups and Analysis of covariance was applied to determine the significance of mean difference among three groups. The Scheffe's test for the differences between the adjusted post test paired means on all variables in all cases, the criterion for statistical significy was set at 0.05 level of confident (P ≤ 0.05).

5. Results

5.1. Result of Reaction Ability

The data obtained on reaction ability as a result of yogic practice, SAQ training and combined training were analyzed using 'T' ratio are presented in table 1.

is found to be lesser than the required table value of 2.144 at 0.05 level of significance for 1, 14 degrees of freedom.

The results of the study show that there is a significant difference between pre and post-test on reaction ability due to SAQ training group and combined training group. Further, they show that there is no significant difference between pre and post-test on reaction ability due to yogic practice group.

Table 2. Computation of analysis of covariance of Yogic Practice SAQ Training and Combined Training Groups on Reaction Ability.

	YP Group	SAQ Group	CT Group	Source of Variance	Sum of Squares	df	Mean Squares	F-ratio
Pre-Test Means	2.937	2.932	2.957	BG	0.005	2	0.003	0.009
				WG	11.984	42	0.285	
Post-Test Means	2.902	2.538	2.104	BG	4.781	2	2.390	13.177*
				WG	7.619	42	0.181	
Adjusted Post-Test Means	2.905	2.544	2.096	BG	4.923	2	2.461	26.845*
				WG	3.759	41	0.092	

*Significant

An examination of table-2 indicates that the significant differences among yogic practice group, SAQ training group and combined training group. The obtained F-ratio for the pre-test is 0.009 and it indicates that the random sampling is successful and the table F-ratio is 3.219. Hence the pre-test means F-ratio is insignificant at 0.05 level of confidence for the degree of freedom 2 and 42.

The obtained F-ratio for the post-test is 13.177 and the table F-ratio is 3.219. Hence the post-test means F-ratio is significant at 0.05 level of confidence for the degree of freedom 2 and 42.

The adjusted post-test means of yogic practice group, SAQ training group and combined training group are 2.905, 2.544 and 2.096 respectively. The obtained F-ratio for the adjusted post-test means is 26.845 and the table F-ratio is 3.225. Hence the adjusted post-tests mean reaction ability F-ratio is significant at 0.05 level of confidence for the degree of freedom 2 and 41.

Pre test, post test and adjusted post test mean difference of the yogic practice group, SAQ training group and combined training group on reaction ability are presented in Figure 1.

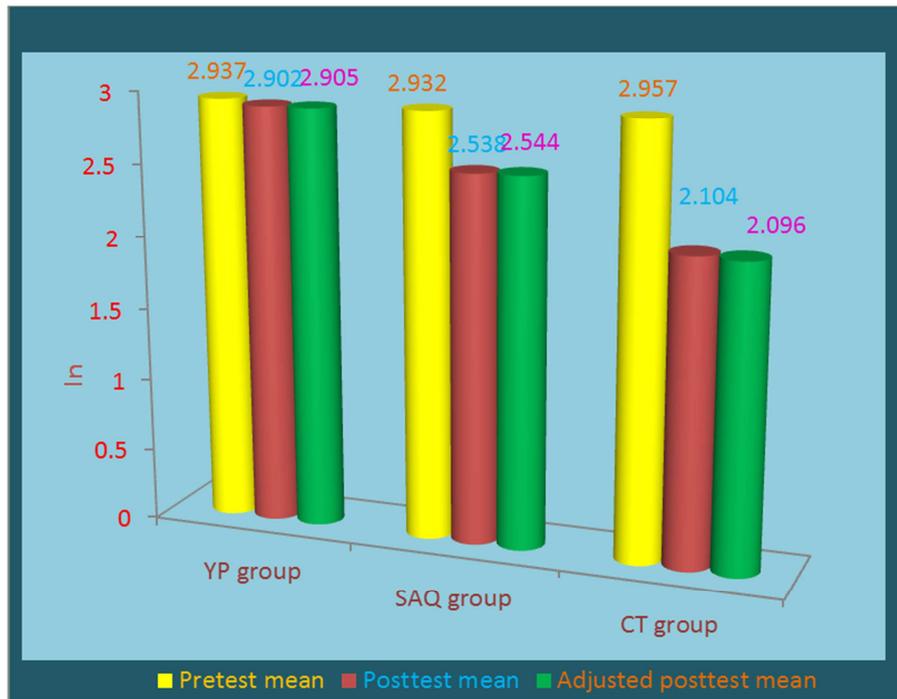


Figure 1. Bar Diagram Showing The Pretest Posttest And Adjusted Posttest Mean Differences Of Yogic Practice SAQ Training And Combined Training Groups On Reaction Ability.

Table 3. The Scheffe's Test for the Differences between the Adjusted Post Test Paired Means on Reaction Ability.

YP Group (N=15)	SAQ Group (N=15)	CT Group (N=15)	Mean Difference	CI value
2.905	2.544		0.361*	
	2.544	2.096	0.448*	0.281
2.905		2.096	0.809*	

*Significant

Table-3 shows the adjusted post means differences among the means of yogic practice group, SAQ training group and combined training group. The adjusted posttests mean values of yogic practice group, SAQ training group and combined training groups are 2.905, 2.544 and 2.096 respectively. The

Table 4. Significance of Mean Gains & Losses between Pre and Post Test Scores on Upper Body Differentiation Ability of Yogic Practice SAQ Training and Combined Training Groups on Upper Body Differentiation Ability.

Group	Pre Test mean	Post Test mean	Mean diff.	Std. Dev	Std. Er. of mean	'T' ratio
Yogic practice group	2.600	2.733	0.133	0.133	0.419	1.000
SAQ group	2.533	3.800	1.267	0.457	0.118	10.717*
Combined training group	2.533	4.533	2.000	0.756	0.195	10.247*

(Table value for 0.05 level for df (1, 14) = 2.144)

mean differences among yogic practice group, SAQ training group and combined training groups are 0.361, 0.448 and 0.809 respectively.

Hence there is a significant difference seen in yogic practice group and SAQ training group; SAQ training group and combined training group; yogic practice group and combined training group.

5.2. Result of Upper Body Differentiation Ability

The data obtained on upper body differentiation ability as a result of yogic practice and SAQ training and combined training were analyzed using 'T' ratio that are presented in table -4

An examination of table-4 indicates that the obtained ‘T’ ratios are 1.000, 10.717 and 10.247 for yogic practice group, SAQ training group and combined training group respectively. The obtained ‘T’ ratios of upper body differentiation ability SAQ Training group, combined training group are found to be higher than the required table value of 2.144 at 0.05 level of significance for 1, 14 degrees of freedom. The obtained ‘T’ ratios of upper body differentiation ability yogic practice group is found to be

less than the required table value of 2.144 at 0.05 level of significance for 1, 14 degrees of freedom. So, it was found to be insignificant.

The results show that there is a significant difference between pre and post-test on upper body differentiation ability due to SAQ training and combined training. Also it shows that there is no significant difference between pre and post-test on upper body differentiation ability due to yogic practice.

Table 5. Computation of analysis of covariance of yogic practice SAQ training and combined training Groups on Upper Body Differentiation Ability

	YP Group	SAQ Group	CT Group	Source of Variance	Sum of Squares	Df	Mean Squares	F-ratio
Pre-Test Means	2.6000	2.533	2.533	BG	0.044	2	0.022	0.071
				WG	13.067	42	0.311	
Post-Test Means	2.7333	3.800	4.533	BG	24.578	2	12.289	17.757*
				WG	29.067	42	0.692	
Adjusted Post-Test Means	2.687	3.823	4.557	BG	26.559	2	13.279	37.208*
				WG	14.633	41	0.357	

*Significant

An examination of table-5 indicates that the significant differences among yogic practice group, SAQ training group and combined training group. The obtained F-ratio for the pre-test is 0.071, and it indicates that the random sampling is successful and the table F-ratio is 3.219. Hence the pre-test mean F-ratio is insignificant at 0.05 level of confidence for the degree of freedom 2 and 42.

The obtained F-ratio for the post-test is 17.757 and the table F-ratio is 3.219. Hence the post-test means F-ratio is significant at 0.05 level of confidence for the degree of freedom 2 and 42.

The adjusted post-test means yogic practice group, SAQ training group and combined training group are 2.687, 3.823 and 4.557 respectively. The obtained F-ratio for the adjusted post-test means it is 37.208 and the table F-ratio is 3.225. Hence the adjusted post-test means upper body differentiation ability F-ratio is significant at 0.05 level of confidence for the degree of freedom 2 and 41.

Pre test, post test and adjusted post test mean difference of the yogic practice group, SAQ training group and combined training group on upper body differentiation ability are presented in Figure 2.

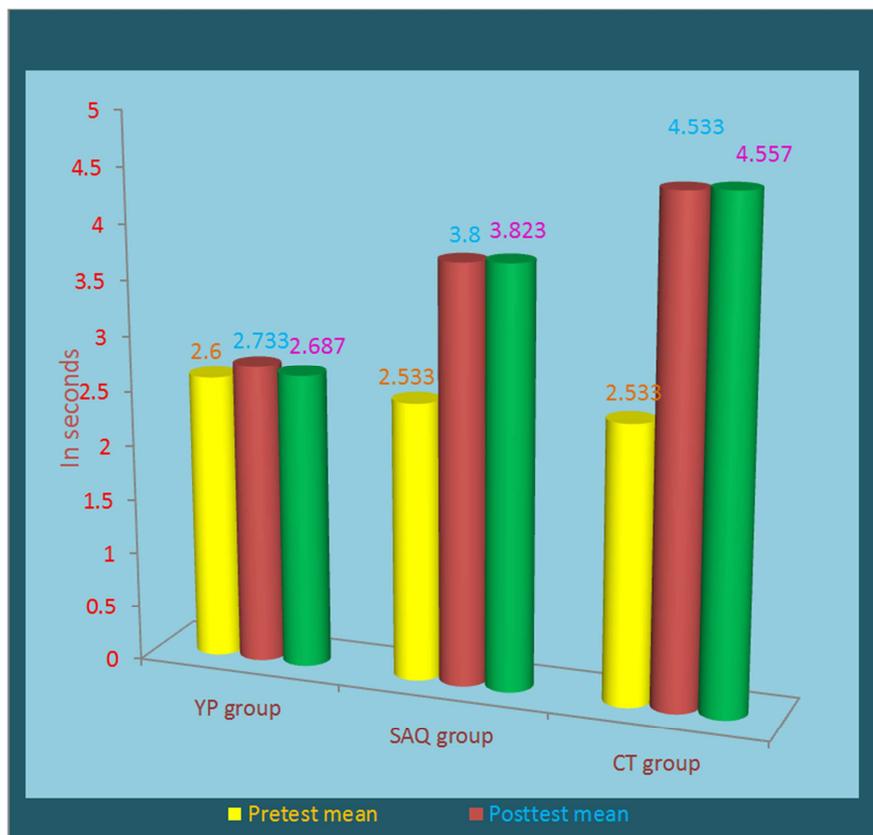


Figure 2. Bar Diagram Showing The Pretest, Posttest And Adjusted Posttest Mean Differences Of Yogic Practice SAQ Training And Combined Training Groups On Upper Body Differentiation Ability.

Table 6. The Scheffe's Test for the Differences between the Adjusted Post Test Paired Meanson Upper Body Differentiation Ability.

YP Group (N=15)	SAQ Group (N=15)	CT Group (N=15)	Mean Difference	CI value
2.687	3.823		1.136*	
	3.823	4.557	0.734*	0.554
2.687		4.557	1.87*	

*Significant

Table-6 shows the adjusted post means differences among yogic practice group, SAQ training group, and combined training group. The adjusted posttests mean values of yogic practice group, SAQ training group and combined training groups are 2.687, 3.823 and 4.557 respectively. The mean differences among yogic practice group, SAQ training group and combined training groups are 0.734, 1.136 and 1.87 respectively.

Hence, it shows that there is a significant difference seen in SAQ training group and yogic practice group; SAQ training group and combined training group; yogic practice group and combined training group.

6. Discussion

The outcomes of the study show that there is a significant improvement in reaction ability due to SAQ training and combined training and there is no significant improvement due to yogic practice.

Further the results of the study indicated that there is a significant difference among yogic practice group, SAQ training group and combined training group in reaction ability. Also it showed that combined training is better than Yogic practice and SAQ training; SAQ training is better than Yogic practice to improve the reaction ability.

The outcomes of the study show that there is a significant improvement in upper body differentiation ability due to SAQ training and combined training and there is no significant improvement due to yogic practice.

Further the results of the study indicated that there is a significant difference among yogic practice group, SAQ training group and combined training group in upper body differentiation ability.

The outcome of this study shows that the yogic practice was not play a significant role for improving coordinative abilities, because the training has not included any coordinative activities and dynamic stretches also; SAQ training produce concise changes due to the application of systematic and logical training schedule with various exercises; combined training highly contributed to improve coordinative abilities which included yogic practice and SAQ training.

7. Conclusion

- It is concluded that SAQ training and combined training significantly improved in reaction ability and upper body differentiation ability of students with hearing impairment.
- It is concluded that there is no significant improvement

in reaction ability and upper body differentiation ability due to yogic practice.

- It is concluded that there is a significant difference among yogic practice group, SAQ training group and combined training group in reaction ability and upper body differentiation ability of students with hearing impairment.
- It is concluded that combined training is better than yogic practice and SAQ training for improving reaction ability and upper body differentiation ability of students with hearing impairment.
- It is concluded that SAQ training is better than yogic practice for improving reaction ability and upper body differentiation ability of students with hearing impairment.

References

- [1] Ananda Ghosh., & Srinivasan, M. (2016). Impact Of Adapted Yoga With Recreational Games Practice On Selected Biomotor Variables Of Intellectually Challenged Children. *International Journal of Adapted Physical Education & Yoga*, Vol. 1, No. 2, pp. 8-16.
- [2] Anoop Jain. (2003). *Adapted Physical Education*. New Delhi: Sports Publication.
- [3] Balaji, PA., Varne, SR. & AliSS. (2012). Physiological Effects Of Yogic Practices And Transcendental Meditation In Health And Disease. *N Am J Med Sci*. 4 (10), pp. 442-8.
- [4] Bloomfield, J., & Polman, R. (2007). Effective Speed And Agility Conditioning Methodology For Random Intermittent Dynamic Type Sports. *Journal of strength and conditioning research*, 21, 1093-100.
- [5] Brown, LE., Ferrigno VA., & Santana JC. (2000). Training for speed, agility and quickness. Champaign, illinois: human kinetics.
- [6] Chandrasekhar, K. (2007). *Yoga For Health*. New Delhi: Khel Sahitya Kendra.
- [7] Doug Keller. (2003). *Anusara Yoga. Do Yoga*.
- [8] Hawkins, BL., Stegall, JB., Weber, MF. & Ryan, JB. (2012). The Influence Of A Yoga Exercise Program For Young Adults With Intellectual Disabilities, 5 (2), pp. 151-156.
- [9] Leslie Kaminoff. (2007). *Yoga Anatomy*. United States: Human Kinetics.
- [10] Moliver, N., Mika, E., Chartrand, M., Burrus, S., Haussmann, R. & Khalsa, S. (2011). Increased Hatha Yoga Experience Predicts Lower Body Mass Index And Reduced Medication Use In Women Over 45 Years., 4 (2), Pp. 77-86.
- [11] Munro, Herrington, LC. (2011). Between-Session Reliability Of Four Hop Tests And The Agility T-Test, *Journal Of Strength And Conditioning Research*, 25, (5), pp. 1470-1477.
- [12] Pal, A., Srivastava, N., Tiwari, S., Verma, NS., Narain, VS., Agrawal, GG., & Natu, SM. & Kumar, K. (2011). Effect Of yogic practices on lipid profile and body fat composition in patients of coronary artery disease. *Complement Therapy Medicine*, 19 (3), pp. 122-7.

- [13] Polman, R., Bloomfield, J., & Edwards, A. (2009). Effects of SAQ Training and Small-Sided Games on Neuromuscular Functioning in Untrained Subjects. *International Journal of Sports Physiology and Performance*, 4, 494-505.
- [14] Senthil kumar, P. (2015). Effects Of Isolated And Combined SAQ And Strength Training On Selected Physical Physiological Blood Lipids And Skill Performance Variables Of Inter Collegiate Men Football Players. Bharathiar University,
- [15] Sri Aurobindo Asharam Publication Department. (1999). *The Synthesis of Yoga*. Puducherry: Sri Aurobindo Asharam.
- [16] Sri Swami Chidananda. (2001). *Light on the Yoga way of life*. India: The Divine Life Society.
- [17] Sri Swami Krishnananda. (1997). *The Yoga System*. India: The Divine Life Society.
- [18] Sri Swami Sivananda. (1998). *Essance of Yoga*. India: The Divine Life Society.
- [19] Srinivasan, M. (2010). Effects of treadmill training, yogic practices and their combination with treadmill training on selected physiological and hematological variables among college men students. *Yoga Mimamsa-The Scientific Journal of Yoga*, Vol. 18, No, 1, pp. 24-39.
- [20] Telles, S. & Naveen, KV. (1997). Yoga for rehabilitation: an overview. *Indian Journal of Medicine Science*, 51 (4), pp. 123-7.