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Research Article

Yogic Physiology

Effect Of Yogic Practices On Motor Fitness Of Intellectually Disabled Children

Mahadevan SP[1*†], Shaikh S[2†]

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[1*†] Suman Pandey Mahadevan, Faculty, Department of Sports Physical Education, Savitribai Phule Pune University, Pune, Maharashtra, India.

[2†] Shabana Shaikh, Research Scholar, Department of Sports Physical Education, Savitribai Phule Pune University, Pune, Maharashtra, India.

The purpose of present research was to study the effect of 6 weeks Yogic Practice Program on intellectually disabled children. Total 10 intellectually disabled children aged between 10 to 12 years were selected with non-probability based purposive sampling. For the assessment of motor fitness components i.e balance, flexibily, coordination and muscular strength ; Stork balance test, sit and reach test, juggling test and basic plank test were conducted respectively. 6 weeks Yogic Practice program was designed and implemented on the selected sample. The collected data was analyzed using descriptive statistics and to study the effect of 6 weeks yogic practice program paired sample t-test was computed. The mean and standard deviation (Pre-test) of balance, coordination, flexibity and strength were 8.30 (2.003), 6.20 (1.229), 15.43 (3.47), and 15.50 (3.68) respectively. Whereas, the mean and standard deviation (Post-test) of balance, coordination, flexibity and strength were 13.50 (4.197), 10.40 (1.350), 20.54 (5.307), and 25.90 (6.100) respectively. The mean difference of balance, coordination, flexibity and strength for pre and post data was -5.200, -4.200, -5.1100 and -10.400. The calculated t-values for balance, coordination, flexibility and strength were -6.738 ,-10.804 , -7.604 and -8.776 respectively. The result of statistical analysis shows that there is significant difference in the pre test and post test scores at 0.05 level of significance. To analyse the data statistically ,SPSS software was used. The findings of this study indicates that there was significant improvement in the motor fitness (Balance, Coordination, Flexibility and Muscular strength) of Intellectually Disabled students post the implementation of yogic practice program.

Keywords: Yogic practice, intellectually disabled children, Motor fitness

Corresponding Author

Suman Pandey Mahadevan, Faculty, Department of Sports Physical Education, Savitribai Phule Pune University, Pune, Maharashtra, India.
Email: pankaj60020@gmail.com

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Introduction

"Disability is not a brave struggle or courage in the face of adversity, but disability is an art. It's an ingenious way of life." – Neil Marcus, 1993

This statement is true but not the fact. It is evident that even during ancient time a lot of importance and concerned was given to the physical structure and fitness. It was assumed that the country which had stronger citizen would rule the world. During ancient time in Athens, the child born with disability was not allowed to survive and was killed at that time only considering that he or she will become the liability for the nation. Even in the civilized society's of early Greece, the Spartan father of crippled child was expected to carry the baby and thrown from cliffs of mount Taygetus and left perish on the jagged rocks below (Fait, 1978). Such as Egyptians were unique in forbidding infanticide. A parent who feels guilty of this crime was required to hold the dead child in their arms for 3 days and nights (Durant, 1966).

The Individual with disability were thought to bring shame on themselves and their families as a result, most disabled people were kept hidden away at home in special institutions (Betts, 1985). As well as, many mentally ill individuals wondered through the country side seeking shelter in stables and pigsties. They were marked and beaten and if apprehended were placed with murderers and other criminals in chain (Hewett and Furness, 1974). Later on the scenario was changed in the middle age, the child born with disability was not killed but were treated harshly or carefully avoided, some handicapped individual found social acceptance as court gestures. The People attitude towards disabled got changed, but it became more sympathetic rather than empathetic. The less focus was given to rehabilitation, treatment and care education, co their other talents went ignored. (Fait, 1978).

Intellectually Disabled Children

The physical disability is visible but the mental disability is not visible but equally serious so the researchers wanted to conduct the study on Intellectually Disabled Children. The Intellectually Disabled Children are those who are unable to ensure themselves wholly or partly. The necessities of normal individual life including work, as result of deficiencies in physical or mental capability.

The Intellectual disability is classified according to the severity level based on the Intelligent Quotient. The Table shows the severity of the Intellectual Disability.

Intelligence Quotient Level

Mentally Retardation Level				
	Profound	Severe	Moderate	Mild
IQ(Intelligence Quotient)	10-20	30-40	50-60	70-80

Motor Function in Intellectually Disabled Children

Research has revealed, motor deficits in Intellectual Disabled Children may occur at the initial stage of growth and development (Brian et al., 2008) and persists over a period of time (Fournier et al ., 2010; Van Waelvelde et al ., 2010). Delayed fundamental motor skills development, motor clumsiness and coordination in precision grip are often witnessed in Intellectually Disabled Children in comparison to age equaled typically developing peers (David et al., 2012). According to American Psychiatric Association (2000) it is Asperger's disorder that is associated with motor abnormalities and autism, but recent studies have found that both groups display motor deficits (Jansiewicz et al., 2006). An increased number of studies now proposed that motor impairments should be taken into consideration as fundamental feature of Intellectually Disabled Children.

Yogic Practices

The term yoga carries several meaning. One of its principal meanings is "Yukti". Yukti means technique, trick or skill for achieving the goal indirectly when the goal cannot be achieved directly. Yoga as Yukti can also be termed as junction in order to feel the divine within us. The 4 major schools/streams of yoga are:-

- **Karma Yoga – Path of Self Sacrifice**
- **Bhakti Yoga – Path of Surrender**
- **Dyan Yoga – Path of Self Analysis**
- **Raja Yoga – Path of Self control**

The natures of all Yogic Practices are psycho-physiological. Although every yogic practice is psycho-physiological in nature, those practices which emphasis control on mental processes directly are more psychological.

Some of the Yogic Exercises

Are Suryanamaskar, Asanas, Pranayama, Mudras, Bandhas and Shat Kriya. Asana (Steady Postures) - The term Asana is derived from Sanskrit term Asi- 'to be 'or 'to sit'. Asanas are certain special patterns of postures that stabilize the body and mind. They aim at establishing a proper rhythm in the neuro-muscular tonic impulses and improving the general muscle tone. Asanas help in the healthy functioning of the organism and also leads to suppleness and ease of movements. Asana benefits the physical body and brings in emotional stability in the human being.

Participants

Total 10 intellectually disabled children aged between 10 to 12 years from Brahamdutt Vidyalaya, Pune , INDIA were selected with non-probability based purposive sampling.

Variables and Tool

Independent variable – Yogic practice program

A 6 weeks of Yogic practice program includes the basics of sthool vyayam, shukshma vyayam, asanas (standing, sitting, prone, supine) ,pranayama, (Yoga Sutra of Patanjali) krida yoga ,harsh abhivyakti. In this study, we examined the effectiveness of Yogic practice as an intervention to improve motor fitness of intellectually disabled children. The classes always started with a short prayer of yoga and finished with cooling down relaxation exercises as per protocol of Ayush mantrlaya. The eight limbs of yoga are yama (abstinences), niyama (observances), asana (yoga postures), pranayama (breath control), pratyahara (withdrawal of the senses), dharana (concentration), dhyana (meditation) and samadhi (absorption) (Yoga Sutra of Patanjali).

And other dynamic exercises like Suryanamaskar,neck rotation ,hand rotations. Different asanas (Tadasana, Vruksasana, Vajrasana, Janushirsana, Balasana, Makarasana, Pavanmuktasana, Bhujangasana, Setubanadhasana, Shavasana etc.),

2 pranayama (Dirgh shvasan,Bhastrika and Bhramari pranayama) in progression mode. The program was conducted 6 days a week, 1 hour day for 6 weeks duration.

Dependent variable – Motor fitness

Independent variables for this study were –

- Balance
- Strength
- Coordination
- Flexibility

Tools for Data Collections

Sr. No.	Variable	Test
1.	Balance	Stork balance stand test
2.	Strength	Basic Plank
3.	Co-ordination	Juggling
4.	Flexibility	Sit and Reach

RESULTS

Table No. 1.1 Descriptive statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRE_BALANCE	8.30	10	2.003	.633
	POST_BALANCE	13.50	10	4.197	1.327
Pair 2	PRE_STRENGTH	15.50	10	3.689	1.167
	POST_STRENGTH	25.90	10	6.100	1.929
Pair 3	PRE_COORDINATION	6.20	10	1.229	.389
	POST_COORDINATION	10.40	10	1.350	.427
Pair 4	PRE_FLEXIBILITY	15.4300	10	3.47788	1.09980
	POST_FLEXIBILITY	20.5400	10	5.30790	1.67850

The mean and standard deviation (Pre-test) of balance, coordination, flexibity and strength were 8.30 (2.003), 6.20 (1.229), 15.43 (3.47), and 15.50 (3.68) respectively. Whereas, the mean and standard deviation (Post-test) of balance, coordination, flexibity and strength were 13.50 (4.197), 10.40 (1.350), 20.54 (5.307), and 25.90 (6.100) respectively.

Table No.1.2 Paired Sample Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PRE_BALANCE - POST_BALANCE	-5.200	2.440	.772	-6.946	-3.454	-6.738	9	.000
Pair 2	PRE_STRENGTH - POST_STRENGTH	-10.400	3.748	1.185	-13.081	-7.719	-8.776	9	.000
Pair 3	PRE_COORDINATION - POST_COORDINATION	-4.200	1.229	.389	-5.079	-3.321	-10.804	9	.000
Pair 4	PRE_FLEXIBILITY - POST_FLEXIBILITY	-5.1100	2.12522	.67205	-6.63029	-3.58971	-7.604	9	.000

The mean difference of balance, coordination, flexibity and strength for pre and post data was -5.200, -4.200, -5.1100 and -10.400. The calculated t-values for balance, coordination, flexibility and strength were -6.738 ,-10.804 , -7.604 and -8.776 respectively. The result of statistical analysis shows that there is significant difference in the pre test and post test scores at 0.05 level of significance.

DISCUSSION

Yoga helps to improve motor fitness of normal as well as special children. Creative interventions, such as Yoga, are promising tools for enhancing the motor & imitations skills of children with ASD Maninderjit Kaur, Anjana Bhat (2019) Practicing yoga daily improves the psychological functions significantly even in the absence of any other form of physical exercise (Patel, 2016). The efficacy of yoga as an effective therapeutic tool in the management of mentally retarded children.

01. Uma, H. R Nagendra, R. Nagarathna, S. Vaidehi, R. Seethalakshmi(1989)

Yoga interventions have been successful bringing parasympathetic dominance in ASD children and this yoga intervention supported children with ASD and helped them to achieve physiological and Psychological balance.

HM Vidyashree, K Maheshkumar, 1 L Sundareswaran,2 G Sakthivel, PK Partheeban,3 and Ravindran Rajan Yoga increases quality of life and spinal flexibility better than physical therapy exercises. Tekur P., Chametcha S., Hongasandra R. N., and Raghuram N**.** yoga can improve focus and attention, sensory information processing, communication, self regulation and more control. These skills generalized to other areas of life. Jennie Ehleringer (2010)Adopting a mindfulness yogic practice for as little one hour everyday for six weeks may developed motor fitness of intellectually disabled children. Yogic practice has shown significant improvements in motor fitness. These results provide support for future investigations of yogic practice in clinical populations and the exploration of the mechanisms by which it promotes physical and psychological well- being. The results of the present study corroborate with previous reports stating that yogic practice is helpful in improving motor fitness.

CONCLUSION

It can be concluded that 6 weeks of yogic practice program significantly improves motor fitness of intellectually disabled children.

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