EFFECT OF ADAPTED GAMES AND ASANA PRACTICES ON SELECTED FUNCTIONAL ABILITY VARIABLES OF PERSONS WITH INTELLECTUAL DISABILITY

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Abstract

The purpose of the study was to find out the effect of adapted games and asana practices on selected functional ability variables of persons with intellectual disability. To achieve the purpose of the study, forty five (45) students were randomly selected from 90, with an age range 12-17 years and their mean age is 14 years, who were from different special schools of Kerala state such as Love Shore Special Schools, Kozikkode and Malappuram, Pratheeksha Special School, Mukkam, Kozhikode and Rahmaniya School for Mentally Handicapped, Kozhikode for acting as subjects for the study. They are intellectually challenged – mild, moderate and trainable- without multiple disabilities. The experimental group 1 had undergone adapted asana practices and experimental group 2 had undergone combined adapted asana and games practices for twelve weeks 5 days per week and 1 hour per day basis. The control group had not undergone any training process. The pre test and post test before and after the twelve week training were conducted in the selected functional ability variables for the three groups. The collected data were analyzed using t ratio to find out the significant improvement in the selected variables of the subjects. ANCOVA was applied to find out the significant difference between the groups. The statistical analysis showed that the intellectually challenged persons in the experimental groups had significantly improved in all selected functional ability variables namely Static Personal Ability, Social Ability and Recreational Ability. The experimental group 2 (adapted games and asana group) had shown better improvements than the experimental group 1 (adapted asana) in all the selected functional ability variables. The results also showed that there is no significant difference in the control group in all selected functional ability variables.

Key word: *Intellectual disability, functional ability, personal ability, social ability, recreational ability*

Introduction

Intellectual disability is characterized by significant limitations both in intellectual functioning and adaptive behavior as expressed in conceptual social, and practical adaptive skills which originate before the age of 18 **(Schalock et al. 2010 p13).** Intellectual disabilities are multidimensional in that, they affect all aspects of a person's life. Many parents face problems in bringing up their children with intellectual disability to the level of normal children in concern of psychomotor fitness and functional ability. Participation in games and sports and yoga asana which are modified for this type of children may influence on their physical, motor, and functional abilities. Adapted physical education and sports is an individualized program including physical and motor fitness, functional motor skills and patterns, skills in aquatics and dance, and individual and group games and sports designed to meet the unique needs of individuals **(Winnick. J.P 2011).**

Asana

In the Yoga Suthra, Padanjali describes asana as a "steady and confortable posture", referring specially to the seated, meditative posture used for meditation practices. He further suggests that meditation is the path to Samadhi, transpersonal self-realization **(S. Prabavanada and C. Isherwood, 1996).** Adapted asana are physical postures of yoga practiced by persons with special needs or physically and intellectually challenged people. Adapted asana can be performed as:

1. Modified postures: asana may be performed with modified postures instead of their real postures according to the ability of the performer.
2. Part to part: an asana can be performed part to part and part to complete suitable to needs of performer.
3. Asana with support: adapted asana can be performed with external support of the instructor or trainer to achieve the maximum performance and benefits.

"The right application of yoga techniques for the children with intellectual disability depends largely on individual physical disability", says **S N Saraswathi (1998).** Medical science has achieved a lot and reached a high position to do many things for the benefits of challenged

children, especially intellectually challenged children. This should be combined with science of yoga to maximize the benefits on intellectually challenged children.

Functional Ability

Animals and plants have certain abilities which are performed according to the situation to sustain in their surroundings. Human being is the most advanced depended creature who leads modern life style in the changing world. Every individual in the human society has potential capacity to perform the activities and tasks that normally expected in their daily life. This actual or potential capacity is called as functional ability.

Functional ability is defined as the physical, psychological, cognitive and social ability to carry on normal activities of life. The attributes which indicate the optimum level of functional ability is measured by the capacity to perform actual or required activities. A given function integrates biological, psychological and social domains. It becomes increasingly important to measure the functional ability of an individual, especially related to the long term care, because functional ability is a key factor in determining the individual's quality of life and it correlates to physical and mental health. The need for long term care or rehabilitation service, including eligibility for funding, is often measured by the individual's ability to perform different functional activities. Especially in intellectually disabled people, measurement of functional ability is commonly done by Functional Assessment Check List for Programming.

Components of Functional Ability selected for the Study

1. **Personal Ability:** This is the ability of a person to meet his tasks needs successfully as a person.
2. **Social Ability:** This is the ability of an individual to perform the activities and tasks that are normally expected when interacting in the society.
3. **Recreational Ability:** This is the ability of an individual to utilize his free time usefully to refresh him by engaging in recreational activities, or capacity of a person to enjoy recreational programs that enable him to refresh as a whole.

Need of the Study

Children with or without intellectual disability must be brought up to achieve the overall development. In the childhood and adolescent's period a lot of changes take place in the growth and development of an individual, especially physical, mental and functional ability areas.

Suitable training and activities will help them to achieve these developments. Regular practice of adapted or modified games, especially team games and modified or adapted asana can make changes in the psychomotor ability and functional ability in children with intellectual disabilities. **(S. Alegesan 2016)**

Methodology

The study was designed to find out the effect of adapted games and asana practices on selected functional ability variables and of persons with intellectual disability with an age range 12-17 years and their mean age is 14 years.

To complete the purpose of the study, Forty Five (45) students were randomly selected from 90, who were from different special schools of Kerala state such as Love Shore Special Schools, Kozikkode and Malappuram, Pratheeksha Special School, Mukkam, Kozhikode and Rahmaniya School for Mentally Handicapped, Kozhikode for acting as subjects for the study. They are intellectually challenged – mild, moderate and trainable- without multiple disabilities. These students had not undergone any special training program apart from their regular routine in the school.

The subjects were divided randomly into three groups. One group (Experimental group I N=15) had acted as adapted asana group. Second group (Experimental group II (N=15) had acted as adapted games and adapted asana group. Then the third group (Control group (N=15) had acted as control group. The experimental groups had undergone adapted games and adapted asana training for a period of 12 weeks and control group had not undergone any training other than their daily routine at school.

The pre and post test data collected from persons with intellectual disability of special schools of Kozhikode and Malappuram district of Kerala were compared for the effect of adapted games and adapted asana practice for 12 weeks. The difference obtained in the selected criterion variables between initial and final means was tested through statistical treatment using Analysis of Covariance (ANCOVA) for statistical significance. The subjects were compared on selected criterion variables to find out the effect of adapted asana and combined adapted games and asana practices using ANCOVA to find out the significant impact if any, among the groups

on selected criterion variables separately. In all the cases, 0.05 level of confidence was fixed to test the significance, which was considered as appropriate.

RESULTS

TABLE-I

ANALYSIS OF COVARIANCE FOR PRE AND POST AND ADJUSTED POST TEST SCORES OF PERRSONAL ABILITY FOR CONTROL AND EXPERIMENTAL GROUPS

Test	Exp. 1 Asana	Exp. 2 Games& Asana	Control Group	Source of Variance	Sum of Squares	df	Mean Square	Obtained 'F' ratio
Pre Test Mean	33.62	33.84	33.95	Between	.836	2	.418	.005
SD	8.55	7.65	10.14	Within	3280.19	42	78.10	
Post Test Mean	40.82	46.11	33.33	Between	1238.01	2	619.00	8.926*
SD	8.17	9.04	7.71	Within	2912.51	42	69.35	
Adjusted Post Test Mean	40.96	46.08	33.22	Between	1257.73	2	628.87	25.347*
				Within	1017.23	41	24.810	

**** Significant at. 0.05 level of confidence (The table value required for Significance at 0.05 level with df 2 and 42 is 3.22, 2 and 41 is 3.23***)

As shown in table 9.1, the obtained f value on the scores of pre-test means of .005 was lesser than the required table value of 3.22, which proved that the random assignment of the subjects was successful and their scores in personal ability before the training were equal and there was no significant difference at 0.05 level. The obtained f value on the scores of post-test means of 8.926 was greater than the required table value of 3.22. Hence, there was significant difference between the post-test means at 0.05 level.

Taking into consideration of pre-test and post-test means, the adjusted post-test means were determined and the obtained f value of adjusted post-test means of 25.347 was greater than required table value of 3.23. Hence, there was significant difference between adjusted post-test means at 0.05 level.

Since significant improvements were recorded, the results were subjected to analysis by using Scheffe's post-hoc test. The results are presented in table 2.

TABLE: II

THE SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN THE ADJUSTED POST TESTS PAIRED MEANS ON PERSONAL ABILITY

Exp.1 Asana	Exp. 2 Games& Asana	Control Group	Mean Difference	Confidence Level Value
40.96	46.08		5.12*	4.62
40.96		33.22	7.74*	
	46.08	33.22	12.86*	

As shown in table II, the adjusted post-test mean difference of adapted asana, combined adapted asana and adapted games, and control groups are 5.12, 7.74, and 12.86 respectively and they are greater than the required confidence interval value of 4.62 and these comparisons were significant at 0.05 level.

The results of the study further have revealed that there is a significant difference in personal ability between the adjusted post-test means of adapted asana and combined adapted asana and adapted games, adapted asana and control group and combined adapted asana and adapted games and control group.

However, the improvement in in personal ability was significantly higher for combined adapted asana and adapted games group than other groups.

It may be concluded that the combined adapted asana and adapted games group exhibited better than the other groups in improving in personal ability.

Figure: 1

	Exp.1 Asana	**Exp. 2 Games& Asana**	**Control Group**
Pre Test	33.62	33.84	33.95
Post Test	40.82	46.11	33.33
Adjusted Post Test	40.96	46.08	33.22

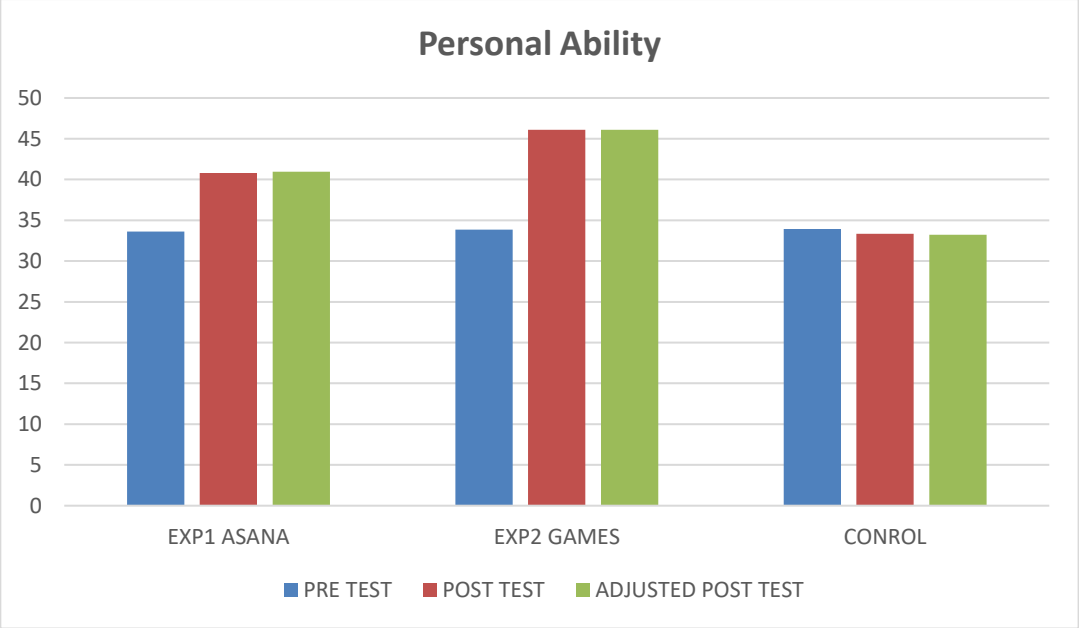


TABLE- III

ANALYSIS OF COVARIANCE FOR PRE AND POST AND ADJUSTED POST TEST SCORES OF SOCIAL ABILITY FOR CONTROL AND EXPERIMENTAL GROUPS

Test	Exp. 1 Asana	Exp. 2 Games& Asana	Control Group	Source of Variance	Sum of Squares	df	Mean Square	Obtained 'F' ratio
Pre Test Mean	43.97	42.94	42.43	Between	18.70	2	9.35	.065
SD	11.96	10.29	13.62	Within	6081.96	42	144.81	
Post Test Mean	50.32	56.26	42.16	Between	1504.88	2	752.44	5.113*
SD	13.52	9.41	13.04	Within	6180.68	42	147.16	
Adjusted Post Test Mean	56.42	42.76	Between	1398.98	2	699.49	56.42	18.803*
			Within	1525.22	41	37.200		

**** Significant at. 0.05 level of confidence (The table value required for Significance at 0.05 level with df 2 and 42 is 3.22, 2 and 41 is 3.23***)

As shown in table III, the obtained f value on the scores of pre-test means of .065 was lesser than the required table value of 3.22, which proved that the random assignment of the subjects was successful and their scores in social ability before the training were equal and there was no significant difference at 0.05 level. The obtained f value on the scores of post-test means of 5.113 was greater than the required table value of 3.22. Hence, there was significant difference between the post-test means at 0.05 level.

Taking into consideration of pre-test and post-test means, the adjusted post-test means were determined and the obtained f value of adjusted post-test means of 18.803 was greater than required table value of 3.23. Hence, there was significant difference between adjusted post-test means at 0.05 level.

Since significant improvements were recorded, the results were subjected to analysis by using Scheffe's post-hoc test. The results are presented in table IV.

TABLE: IV

THE SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN THE ADJUSTED POST TESTS PAIRED MEANS ON SOCIAL ABILITY

Exp.1 Asana	**Exp. 2 Games& Asana**	**Control Group**	**Mean Difference**	**Confidence Level Value**
49.57	56.42		6.85*	5.66
49.57		42.76	6.81*	
	56.42	42.76	13.66*	

As shown in table IV, the adjusted post-test mean difference of adapted asana, combined adapted asana and adapted games, and control groups are 6.85, 6.81, and 13.66 respectively and they are greater than the required confidence interval value of 5.66 and these comparisons were significant at 0.05 level.

The results of the study further have revealed that there is a significant difference in social ability between the adjusted post-test means of adapted asana and combined adapted asana and adapted games, adapted asana and control group and combined adapted asana and adapted games and control group.

However, the improvement in in social ability was significantly higher for combined adapted asana and adapted games group than other groups.

It may be concluded that the combined adapted asana and adapted games group exhibited better than the other groups in improving in social ability.

Figure: 2

	Exp.1 Asana	Exp. 2 Games& Asana	Control Group
Pre Test	43.97	42.94	42.43
Post Test	50.32	56.26	42.16
Adjusted Post Test	49.57	56.42	42.76

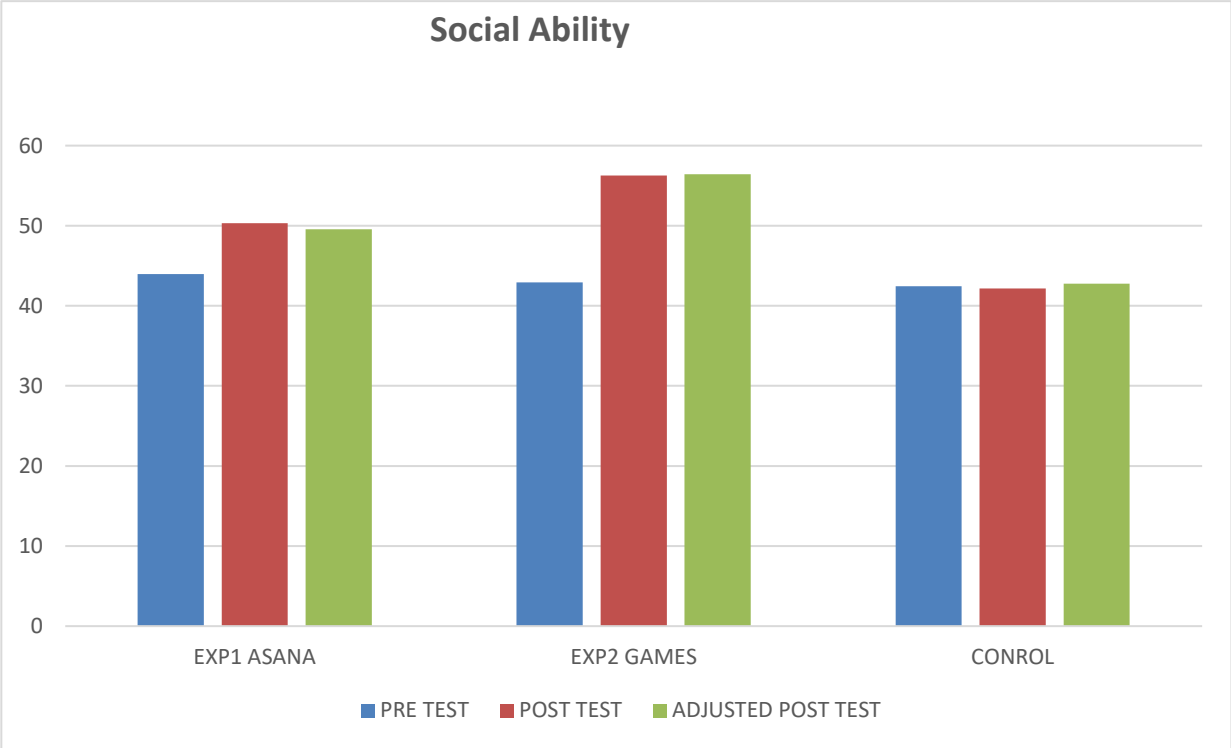


TABLE- V

ANALYSIS OF COVARIANCE FOR PRE AND POST AND ADJUSTED POST TEST SCORES OF RECREATIONAL ABILITY FOR CONTROL AND EXPERIMENTAL GROUPS

Test	Exp. 1 Asana	Exp. 2 Games& Asana	Control Group	Source of Variance	Sum of Squares	df	Mean Square	Obtained 'F' ratio
Pre Test Mean	35.87	35.45	35.27	Between	2.84	2	1.423	.026
SD	5.89	6.26	9.62	Within	2330.04	42	55.48	
Post Test Mean	41.06	46.38	35.93	Between	818.37	2	409.18	9.533*
SD	5.16	6.67	7.59	Within	1802.80	42	42.92	
Adjusted Post Test Mean	40.84	46.43	36.09	Between	802.74	2	401.37	19.073*
				Within	862.82	41	21.044	

**** Significant at. 0.05 level of confidence (The table value required for Significance at 0.05 level with df 2 and 42 is 3.22, 2 and 41 is 3.23***)

As shown in table V, the obtained f value on the scores of pre-test means of .026 was lesser than the required table value of 3.22, which proved that the random assignment of the subjects was successful and their scores in recreational ability before the training were equal and there was no significant difference at 0.05 level. The obtained f value on the scores of post-test means of 9.533 was greater than the required table value of 3.22. Hence, there was significant difference between the post-test means at 0.05 level.

Taking into consideration of pre-test and post-test means, the adjusted post-test means were determined and the obtained f value of adjusted post-test means of 19.073 was greater than required table value of 3.23. Hence, there was significant difference between adjusted post-test means at 0.05 level.

Since significant improvements were recorded, the results were subjected to analysis by using Scheffe's post-hoc test. The results are presented in table VI.

TABLE: VI

THE SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN THE ADJUSTED POST TESTS PAIRED MEANS ON RECREATIONAL ABILITY

Exp.1 Asana	**Exp. 2 Games& Asana**	**Control Group**	**Mean Difference**	**Confidence Level Value**
40.84	**46.43**		5.59*	4.26
40.84		**36.09**	4.75*	
	46.43	**36.09**	10.34*	

As shown in table VI, the adjusted post-test mean difference of adapted asana, combined adapted asana and adapted games, and control groups are 5.59, 4.75, and 10.34 respectively and they are greater than the required confidence interval value of 4.26 and these comparisons were significant at 0.05 level.

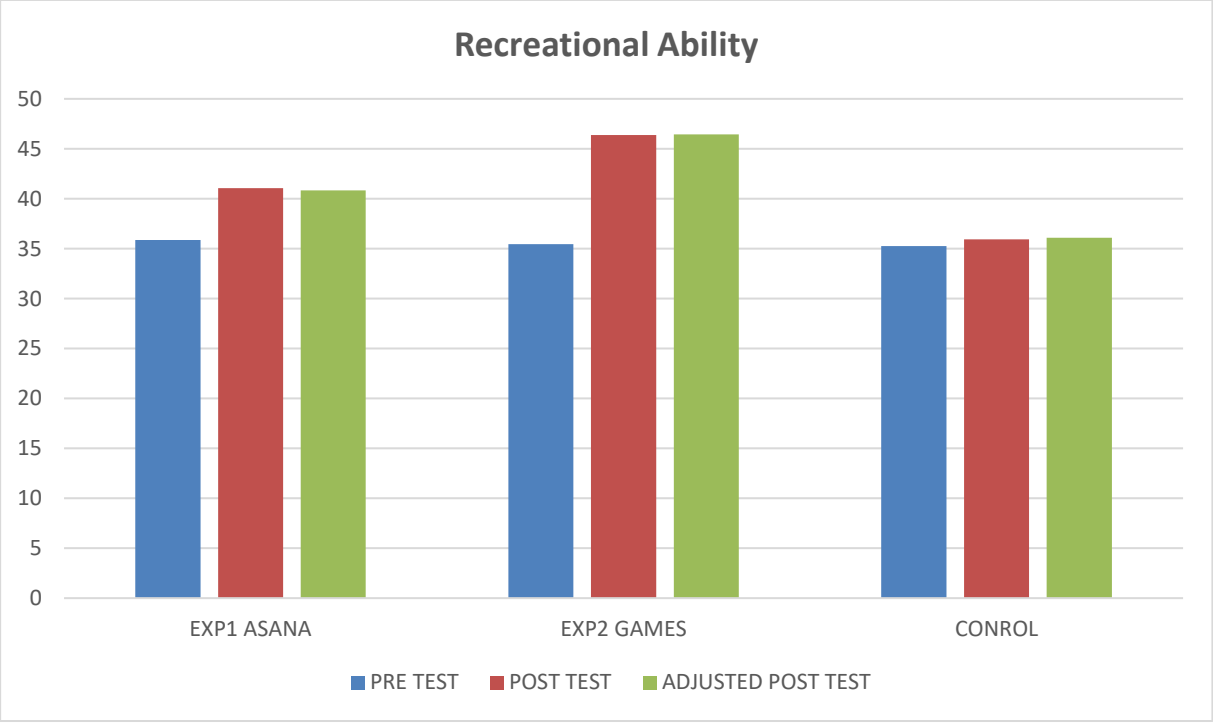
The results of the study further have revealed that there is a significant difference in recreational ability between the adjusted post-test means of adapted asana and combined adapted asana and adapted games, adapted asana and control group and combined adapted asana and adapted games and control group.

However, the improvement in recreational ability was significantly higher for combined adapted asana and adapted games group than other groups.

It may be concluded that the combined adapted asana and adapted games group exhibited better than the other groups in improving in recreational ability.

Figure: 3

	Exp.1 Asana	**Exp. 2 Games& Asana**	**Control Group**
Pre Test	35.87	35.45	35.27
Post Test	41.06	46.38	35.93
Adjusted Post Test	40.84	46.43	36.09



DISCUSSION ON FINDINGS OF PERSONAL ABILITY

- The result of the study had revealed that there is significant improvement in personal ability of the experimental groups of intellectually challenged persons from pre test to post test.
- The result of the study had revealed that there is no significant improvement in personal ability of the control group of intellectually challenged persons from pre test to post test.
- The result of the study had revealed that there is better significant improvement in personal ability of the experimental group 2 (combined adapted games and asana) than the experimental group 1 (adapted asana) of intellectually challenged persons from pre test to post test.

DISCUSSION ON FINDINGS OF SOCIAL ABILITY

- The result of the study had revealed that there is significant improvement in social ability of the experimental groups of intellectually challenged persons from pre test to post test.
- The result of the study had revealed that there is no significant improvement in social ability of the control group of intellectually challenged persons from pre test to post test.
- The result of the study had revealed that there is better significant improvement in social ability of the experimental group 2 (combined adapted games and asana) than the experimental group 1 (adapted asana) of intellectually challenged persons from pre test to post test.

DISCUSSION ON FINDINGS OF RECREATIONAL ABILITY

- The result of the study had revealed that there is significant improvement in recreational ability of the experimental groups of intellectually challenged persons from pre test to post test.
- The result of the study had revealed that there is no significant improvement in recreational ability of the control group of intellectually challenged persons from pre test to post test.

- The result of the study had revealed that there is better significant improvement in recreational ability of the experimental group 2 (combined adapted games and asana) than the experimental group 1 (adapted asana) of intellectually challenged persons from pre test to post test.

CONCLUSIONS

The following conclusions were drawn from the results of the study.

1. It was concluded that the 12 week adapted asana practices improved personal ability, social ability and recreational ability of persons with intellectual disability.

2. It was concluded that the 12 week combined adapted games and adapted asana practices improved personal ability, social ability and recreational ability of persons with intellectual disability.

3. It was concluded that the 12 week combined adapted games and adapted asana practices had shown better improvement in personal ability, social ability and recreational ability of experimental group 2 than experimental group 1 of persons with intellectual disability.

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