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Research Paper

EFFECTS OF YOGIC PRACTICE AND AQUATIC TRAINING ON MOTOR FITNESS COMPONENTS OF MALE KHO–KHO PLAYERS

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Abstract

The Purpose of these Study effects of yogic practice and aquatic training on motor fitness components of male kho–kho players to achieve these purpose Ninety Male Kho-Kho player were randomly selected as subjects from Royal International School. The age of these subjects ranged from 15-19 years. These Subjects were divided in to three groups namely group 1 Yoga, group 2 Aquatic Training and group 3 control group. The duration of the training period was restricted to Twelve weeks. Motor fitness components were selected as a criterion variable. In all the cases 0.05 level of significance was fixed. The analysis of covariance was used to find out the significant different among the three groups, The Scheffes' post hoc was used to find out the paired mean differences. Yogic practices and aquatic training have produced significant improvement on selected motor fitness variables, namely speed, agility, flexibility of Female Kho-Kho players.

Keywords: - Motor fitness, Aquatic training and Yogic.

Introduction

Kho-Kho is an indigenous game. The game is played by two teams which consist of nine players each. 'The game of Kho-Kho is based on a natural principle of physical development. It is vigorous and fosters a healthy combative spirit among youths'. It is not merely running with speed but it's "CHASE", a natural instinct to overtake, to pursue, to catch 'a kill'. A sport training systemic process extends over a long period. For best results, the system of training has to be based and conducted on scientific facts and lines when seems in possible the training has to be based on the results of successful practice which has understood the test of time sports. The sports performance

depends on several factors. The performance of a sports person primarily depends on his capacity, such as speed, strength and endurance. All these factors therefore are the principle aims of physical training. Yoga universally benefits people of all ages. The study of Yoga is fascinating to those with a philosophical mind and is defined as the silencing of the mind's activities which lead to complete realization of the intrinsic nature of the Supreme Being. It is a practical holistic philosophy designed to bring about profound state as well as an integral subject, which takes into consideration man as a Aquatic whole. training significant improvement of Physiological performance (K.Kamalakkannan et.al. 2010). Aquatic training shows significant improvement in all the selected physical fitness variables (K.Kamalakkannan et.al. 2010). Shallow walking has show water greater improvement in physical fitness variables (K.Kamalakkannan et.al. 2014). Plyometiric training in aquatic environment can be effective improvement in endurance (K.Kamalakkannan et.al. 2011).Aquatic training produced positive impacts on the agility and explosive power (K.Kamalakkannan et.al. 2010).

Methodology

To achieve these purpose Ninety male Kho-Kho players were randomly selected as subjects from Royal International School, these age of the subjects ranged from 15-19 Subjects were divided in to three years. groups namely group 1 Yoga, group 2 Aquatic Training and group 3 control group. The duration of the training period was restricted for about Twelve weeks. Motor fitness components were selected as a criterion variable. They were divided in to three groups as follows. The Experimental group I (yoga) n=30 subjects underwent Yoga Training, Experimental group II (Aquatic training) n=30 subjects underwent Aquatic training and Control Group n= 30 subjects did not undergo any specific training but they practiced the regular Kho-Kho game.

Motor fitness components

- 1. Speed
- 2. Agility
- 3. Flexibility

Selection of test and criterion measures

The following criterion measures were chosen to measure the variables.

Experimental design and statistical procedure

All the subjects were tested based on selected criterion variables. The collected data from the factors were statistically analyzed by using analysis of covariance, where they obtained F ratio for interaction effect found to be significant. The sample effect test was used as follow up test since 3 Groups were compared whenever they obtained F ratio value in simple effect test was significant. The Scheff's post hoc test was applied as post hock test to determine the paired mean difference, if any. In all the cases 0.05 level of significance was fixed. The analysis of covariance was used to find out the significant among the three groups, the Scheff's post hoc was used to find out the paired mean differences.

Table – 1

Analysis of covariance of pre-test post test and adjusted post test on speed of experimental group i, experimental group ii and control group (scores in seconds)

TES T	EX P GR OU P I (Yo ga gro up)	EX P GR OU P II (Aq uati c gro up)	C on tr ol gr ou p	Sou rce Of var ian ce	Su m of squ are	D F	M ea n sq u ar e	F value								
Pre- test	7 51	7 40	7.	Bet wee n	0.0 1	2	00 5	2 55								
mea n	7.51	7.49	51	51	51	Wit hin	0.1 7	8 7	00 2	2.35						
Post -test	7 49	7 48	7.40	7 49 7 46	7.46 7. 54	5 54	Bet wee n	0.1 0	2	05 0	24.16					
mea n	7.40	7.40	54	54			54	54	54	54	54	54	54	Wit hin	0.1 8	8 7
Adj uste d			7	Bet wee n	0.0 5	2	02 5									
post - test mea n	7.47	7.47 53	7. 53	7. 53	Wit hin	0.0 3	8 6	00 3	* *							
Mea n gain	0.03	0.03	0. 02													

* Significant at 0.1 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 87 and 2 and 86 are 3.10 and 3.11 respectively).

4.4 results of speed

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Table I shows the analyzed data on speed. The pre-test means of speed were 7.51 for Yogi Practice, 7.49 for Aquatic training and 7.51 for control group. The obtained "F" was lesser than the table Fratio of 2.55 Hence the pre-test is not ratio 3.11. significant at 0.05 level of confidence for the degrees of freedom 2 and 87.The post-test means of speed were 7.48 for yogic practice, 7.46 for Aquatic training and 7.54 for control group. The obtained "F" ratio of 24.16 was higher than the table F-ratio 3.10. Hence the post-test is significant at 0.05 level of confidence for the degrees of freedom 2 and 87.The adjusted post-test means of speed were 7.47 for, yogic practice 7.47 for Aquatic training and 7.53 for control group. The obtained "F" ratio of 73.09 is higher than the table F-ratio 3.11. Hence the adjusted post-test mean difference is significant at 0.05 level of confidence for the degrees of freedom 2 and 86.Since, three groups were compared, whenever they obtained 'F' ratio for adjusted post-hoc test was found to be significant, the Scheffe's post hoc test to find out the paired mean differences was used and it is presented in below Table I (a).

Table - 1(a)

Scheffe's post hoc test mean differences on speed among three groups (Scores in seconds)

Experimen tal Group I	Experimen tal Group II	Contr ol Grou P	Mean Differenc es	Confiden ce Interval Value
7.48	7.47	-	0.01	0.0003
7.48	-	7.53	0.05	0.0003
-	7.47	7.53	0.06	0.0003

* Significant at .05 level of confidence.

Table - I (a) This above mentioned table shows the scheffe's post-hoc test results. The ordered, adjusted final mean difference for speed of Yogic practice group, Aquatic training and control group were tested for significance at 0.05 level of confidence against confidential interval value. The mean differences between Yogic practice and aquatic training and control group were 0.01, 0.05 and 0.06 respectively and it was seen to be greater than the confidential interval value of 0.0003. Hence, the above all comparisons were significant.

The mean values of speed are shown graphically in Fig-I.

The adjusted post test mean values of experimental group i, experimental group ii and control group on speed



Table – 2

Analysis of covariance of pre-test post test and adjusted post test on agility of experimental group i, experimental group ii and control group (scores in seconds)

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TEST	E X P G R O U P I (Y o g a g r o u P)	EXP GR OUP II (Aq uatic grou p)	Co ntr ol gro up	Sour ce Of varia nce	Su m of squ are	DF	M ea n sq ua re	F va lu e	
Pre-	1 1	11.1 0	11.1	11.	Betw een	0.0 0	2	0.0 00 0	0. 00
mean	1 2		11	Withi n	0.0 5	8 7	0.0 00 6	00	
Post	1 1	11.0	11. 14	Betw een	0.1 2	2	0.0 60 0	32 .6	
mean	1 0	5		14	Withi n	0.1 6	8 7	0.0 01 8	2
Adjust ed	1 1	11.0	11.	Betw een	0.1 0	2	0.0 51 0	34	
post- test mean	0 9	6	14	14	Withi n	0.1 3	8 6	0.0 01 5	.2 7*
Mean gain	0 0 2	0.05	0.0 3						

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 87 and 2 and 86 are 3.11 and 3.10 respectively).

4.5 results of agility

Table II This above mentioned tableshows the analyzed data on Agility. The pre-test means of Agility were 11.12 for Yogic practice, 11.10 for Aquatic training and 11.11 for control group. The obtained "F" ratio of 0.00 was lesser than the table F-ratio 3.11. Hence the pre-test was significant at 0.05 level of confidence for the degrees of freedom 2 and 87.The post-test means of Agility were 11.10 for Yogic practice, 11.05 for Aquatic training 11.14 for control group. The obtained "F" ratio of 32.62 was higher than the table F-ratio 3.11. Hence the post-

test was significant at 0.05 level of confidence for the degrees of freedom 2 and 87.The adjusted post-test means of Agility were 11.09 for Yogic practice, 11.06 for and Aquatic training and 11.14 for control group. The obtained "F" ratio of 34.27 was higher than the table F-ratio 3.10. Hence the adjusted post-test mean difference is significant at 0.05 level of confidence for the degrees of freedom 2 and 86.Since, three groups were compared, whenever the obtained 'F' ratio for adjusted post-hoc test is found to be significant, the Scheffe'sposthoc test was used to find out the paired mean differences and it is presented in Table below

Table - 2 (a)

Scheffe's post- hoc test mean differences on agility among three groups (scores in seconds)

Experimen tal Group I	Experimen tal Group II	Contr ol Grou P	Mean Differen ces	Confide nce Interval Value
11.09	11.06	-	0.03	0.0015
11.09	-	11.14	0.05	0.0015
-	11.06	11.14	0.08	0.0015

* Significant at .05 level of confidence.

Table - II (a) This above mentioned table shows the scheffe's post-hoc test results. The ordered adjusted final mean difference for Agility of Yogic practice, aquatic Training and control group were tested for significance at 0.05 level of confidence against confidential interval value.

The mean differences between Yogic practice, Aquatic Training and control group were 0.03, 0.05 and 0.08 respectively and it was seen to be greater than the confidential

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interval value of 0.0015. Hence the above comparisons were significant.

The mean values of Agility are shown graphically in Fig.2.

The adjusted post test mean values of experimental group 1, experimental group ii and control group on agility



Table – 3

Analysis of covariance of pre-test post test and adjusted post test on flexibility of experimental group i, experimental group ii and control group(Scores in cm)

TES T	EX P GR OU P I (Yo ga gro up)	EXP GR OU P II (Aq uati c gro up)	Co ntr ol gro up	Sou rce Of vari anc e	Su m of sq uar e	D F	Me an sq uar e	F val ue
Pre- test	29.3	29.1	29.	Bet wee n	1.4 9	2	0.7 4	0.5
mea n	6	3	06	Wit hin	12 0.3 0	8 7	1.3 8	Э
Post -test	35.0	31.5	27.	Bet wee n	22 5.5	2	112 .75	72. 27
mea n	3	6	00	Wit hin	13 6.3 3	8 7	1.5 6	*
Adj uste d	33.9 0	31.6 0	27. 09	Bet wee n	20 5.2 5	2	10 2.6 2	43. 11
post - test mea				Wit hin	20 4.6 8	8 6	2.3 8	

n						
Mea n gain	5.67	2.43	2.0 7			
				 	-	

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 87 and 2 and 86 are 3.11 and 3.10 respectively).

4.6 results of flexibility

Table III This above mentioned table shows the analyzed data on Flexibility. The pre-test means of Flexibility were 29.36 for Yogic practice, 29.13 for Aquatic training and 29.06 for control group. The obtained "F" ratio of 0.53 was lesser than the table F-ratio 3.11. Hence the pre-test was not significant at 0.05 level of confidence for the degrees of freedom 2 and 87. The posttest means of Flexibility were 35.05 for Yogic practice, 31.56 for Aquatic training and 27.00 for control group. The obtained "F" ratio of 72.27 was higher than the table F-ratio 3.11. Hence the post-test was significant at 0.05 level of confidence for the degrees of freedom 2 and 87.The adjusted post-test means of Flexibility were 33.90 for Yogic practice, 31.60 for and Aquatic training and 27.09 for control group. The obtained "F" ratio of 43.11 was higher than the table F-ratio 3.10. Hence the adjusted posttest mean difference is significant at 0.05 level of confidence for the degrees of freedom 2 and 86.Since. three groups were compared, whenever they obtained 'F' ratio for adjusted post-hoc test is found to be significant, the Scheffe's post hoc test was used to find out the paired mean differences and it is presented in Table below

Table -3(a)

Scheffe's post hoc test mean differences on flexibility among three groups (Scores in centimeter)

Experi menta l Group I I Experi ol Group II Experi ol Group II Experi Contr n Confide n Diffe Foru P Experi Ol Brou P Experi Ol Brou P Experi Ol Brou P Experi Contr N Confide Confide Confide Confide Confide N Confide N Confide N Confido

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34.90	31.60	-	3.3	0.81
34.90	-	27.09	7.81	0.81
-	31.60	27.09	4.51	0.81

* Significant at .05 level of confidence.

Table –III (a) This above mentioned table shows the scheffe's post-hoc test results. The ordered adjusted final mean difference for Flexibility of Yogic practice, Aquatic training and control group were tested for significance at 0.05 level of confidence against confidential interval value. The mean differences between yogic practice and Aquatic training and control group were 3.3, 7.81 and 4.51 respectively and it was seen to be greater than the confidential interval value of 0.81. Hence, the above all comparisons were significant. The mean values of Flexibility are shown graphically in Fig.3.

The adjusted post test mean values of experimental group i, experimental group ii and control group on flexibility



Discussion on findings

Motor fitness components among three groups

Yogic practices and Aquatic training have produced significant improvement on selected motor fitness variables, physiological and psychological variables namely speed, agility, flexibility, and V02 max, breath holding time, resting pulse rate, aggression, achievement motivation and self-confidence of male Kho-Kho players.

4.13 motor fitness components

Discussion on findings about speed

Greater improvement on speed due to Aquatic training than the yogic practices, and control group. Smaller gain was noticed on speed due to yogic practices than the aquatic training.

Discussion on findings about agility

There was a greater improvement on agility due to aquatic training than the yogic practice and control group. Smaller gain was noticed on agility due to yogic practice than the aquatic training.

Discussion on findings about flexibility

Greater improvement on flexibility due to yogic practice than the aquatic training and control group. The smaller gain noticed on flexibility due to aquatic training

Conclusion

Yogic practices and aquatic training have produced significant improvement on selected motor fitness variables, namely speed, agility, flexibility of male Kho-Kho Players.

Recommendations

As for college students are concerned, training period can be increased from 12 weeks to 18 weeks. More variables can also be added for the benefit of the students. It is recommended that the Sports Trainers, Professionals, Physical Directors, Coaches can concentrate on improving the level of the students through giving practice in the above mentioned.

Reference:

1. Kamlesh M.L. (1994). Scientific art of teaching Physical Education. New Delhi: Metropolitan.

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- Iyengar B.K.S (2001), Yoga The path of Holistic Health, Dorling Kindersley Limited, Great Britain, Health, Dorling Kindersley Limited, Great Britain, p.16.Iyengar B.K.S.
- 3. (1981), "Light on Pranayama" UN Win Hyman Limited, London, p.1.
- 4. John Floyer& Edward Batnard (2009), treating the genuine life of Hot and Cold Baths, London: William Innys. Fourth Edition, with Appendix. Retrieved 2009-10-22.
- 5. Lawrence E. Morehouse and Augustine T. Miller (1976), Physiology of Exercise (5th Ed), Saint Louis: The C.V. Mosby Company, p.163.
- K.Kamalakkannan, N.Vijayaregunathan and R.Kalaidasan (2010), Aquatic training with and without weights and its impact on agility and explosive power among volley ball players. British journal of sports medicine, 44:i16-i17 doi:10.1136/bjsm.2010.078972.49.
- K. Kamalakkannan, M. Balaji, N. Vijayaragunathan, C. Arumugam .Effect of Aquatic Training with and without Weight on Selected Physiological Variables among Volleyball Players. Indian Journal of science and technology. 2010.3, 5, 567-570.
- K.Kamalakkannan, N.Vijayaregunathan and Arumugam .influence of aquatic training on selected physical fitness variables among volleyball players. Indian journal of science and technology. (2010) 3, 7: 743-745. DOI: 10.17485/ijst/2010/v3i7/29806.
- 9. K.Kamalakkannan, Kaukab Azeem, C.Arumugam. The effect of aquatic Plyometiric training with and without resistance on selected physical fitness variables among volleyball players. Journal of Physical Education and Sport.2011. 11(2)31.205-210.
- 10. K.Kamalakkannan, Kaukab Azeem. Effect of shallow water and land walking on selected Physical Fitness variables among

obese adults. Annals of Biological Research. 2014, 5 (6):1-3