

EFFECT OF ROPE SKIPPING DANDS AND BAITHAKS EXERCISES ON SELECTED PHYSICAL FITNESS VARIABLES AMONG KABADDI PLAYERS

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ABSTRACT

The purpose of the study was to find out the effect of ropes skipping dands and baithaks exercises on selected physical fitness variables among kabaddi players. To achieve this purpose of the study forty five college men kabaddi players from Alagappa University College of Physical Education, Karaikudi, were randomly selected as subjects. The age of the subjects ranged between 21 to 28 years. The selected subjects were divided into three equal groups of fifteen subjects each. The experimental group 1(n=15) underwent Rope skipping dands, the experimental group 2 (n = 15) underwent dands and baithaks exercise training and control group (n= 15) did not participate in any special training programme apart from their regular activities. All the subjects of three groups were tested on selected dependent variables such as agility and flexibility at prior to immediately after the training programme by using shuttle run and sit and reach test respectively. Data for the selected variables were taken at the beginning (pre-test) and at the end of the experimental period (post-test). The Analysis of covariance (ANCOVA) was used for interpreting the results. On the basis of the results the impact of rope skipping dands and baithaks exercise training has significantly contributed to improvement the selected variables such as agility and flexibility.

KEYWORDS: Rope skipping, Dands, Baithaks, Agility, Flexibility

INTRODUCTION

Skipping rope is the primary tool used in the activity of skipping played by children and many young adults, where one or more participants jump over a rope swung so that it passes under their feet and over their heads. Rope jumping was probably introduced by America in the 1600s by the Dutch settlers of New Amsterdam (modern-day New York). Rope jumping increases dynamic balance because the athlete must make numerous neuromuscular adjustments to the imbalance created by each of the hundreds of jumps per training session. These adjustments also force the athlete to balance the body weight on the balls of the feet, reinforcing the universal athletic position. The universal athletic position is a standing position of readiness that allows the athlete to react quickly in any direction and then move back to the starting position. The sports training potential of rope jumping has long been under estimated, and jumping has been used to its full potential in only a few sports: boxing, wrestling, tennis and martial arts. Many coaches of other sports encourage jump rope training for their athletes but are not sure how to use it to meet the unique training demands of their sport. When done properly, jump rope training can lead to dramatic improvements in sports performance (Buddy Lee, 2003).

Rope skipping exercise is a form of moderate-to-high intensity aerobic exercise (Quirk & Sinning, 1982; Town, Sol, & Sinning, 1980), which is endorsed by the ACSM Position Stand (1998) for maintaining and developing physical

fitness and health. Rope skipping is characterized by great up-and-down motions of center of mass and excessive weight-bearing, because of without horizontal movement, which possibly leads to greater gut disturbance than running

Rope skipping trainings have a positive effect on heartcirculation alignment, muscle strength, endurance, mobility, flexibility, balance, coordination, vertical jumping, timing, rhythm, speed, lean body mass, bone density and the development of skills (Orhan et all, 2008).

Dands and baithaks are two different exercises, but together they constitute the core wrestling vyayam regimen. Dands are jackknifing push-ups and baithaks are comparable to Western-style deep knee bends. Although dands and baithaks are done separately, they are usually referred to as a pair. As a set they provide a complete body workout.

One starts a baithak from a standing position with feet set at forty-five degree angles and heels about fifteen to twenty centimeters apart. While squatting down one should jump slightly forward onto the balls of one's feet while lifting the heels clear off the floor. In the process of standing back up, one should jump backwards to the position from which one started. One's arms should be relaxed. They should sway with the movement of the body in order to maintain balance. One's eyes should be fixed on a point about four meters forward on the ground, so that one's head will be stationary and balanced. One should do about sixty or eighty baithaks per minute and between sixty and one hundred at a stretch (Atreya 1974: 25).

Dands are similar to certain aspects of surya namaskar. One starts a dand from a face-down, prone position with feet placed close together and palms flat on the ground directly below the shoulders about half a meter apart. To begin, one cocks the body back by lifting one's buttocks into the air while straightening both arms and legs. Bending at the elbows, one dives forward so that the chest glides between the palms close to the ground.

The most important feature of dands and baithaks is that they be done rhythmically and at a steady pace. Dands and baithaks make the muscles of the body so incredibly strong The performance of thousands of these exercises produces a mental state not unlike that of a person who has gone into a trance through the rote recitation of a mantra or prayer. Doing dands makes a person's character and personality shine. The body takes on a powerful radiance. Not only this, but the person who does dands lives a fuller and more meaningful life. His personality is more attractive. He is liked by everyone. His whole attitude towards life is changed

METHODOLOGY

The purpose of the study was to find out the effect of rope skipping dands and baithaks exercises on selected physical fitness variables among Kabaddi Players. To archive this purpose of the study forty five college men kabaddi players from Alagappa University College of Physical Education, Karaikudi, were randomly selected as subjects. The age of the subjects ranged between 21 to 28 years. The selected subjects were divided into three equal groups of fifteen subjects each. The experimental group – 1(n=15) underwent Rope skipping, the experimental group 2 (n = 15) underwent dands and baithaks exercise training and control group 3 (n= 15) did not participate in any special training programme apart from their regular activities. The experimental groups were subjected to the training during morning hours for five days for six weeks. The rope skipping, dands and baithaks training and Baithaks exercise training was selected as independent variables and the selected criterion variables such as agility and flexibility at prior to immediately after the training programme by using shuttle run and sit and reach test respectively. The experimental design selected for this study

was pre and post test randomized design. The data were collected from each subject before and after the training period and statistically analyzed by using analysis of covariance (ANCOVA).

ANALYSIS OF DATA

The influence of rope jumping and dands and baithaks on each variable was analyzed separately and presented below.

RESULTS AND DISCUSSIONS

Agility

Table 1 shows the analyzed data on agility. The pre-test means of agility were 9.06 for experimental group 1, 9.12 for experimental group 2 and 9.22 for control group. The obtained "F" ratio was 0.63 The post-test means of agility were 8.77 for experimental group 1, 8.61 for experimental group 2 and 9.21 for control group. The obtained "F" ratio was 8.06 was higher than the table F-ratio 3.35. The adjusted post-test means of agility were 8.85 for experimental group 1, 8.62 for experimental group 2 and 9.12 for control group. The obtained "F" ratio of 43.59 was higher

Since, the analysis of covariance result was significant; to find out the pair wise comparison Scheffe's post hoc test was conducted. The results are presented in table 2. Table 2 shows the Scheffe's Post-Hoc test results. The ordered adjusted final mean difference for agility of experimental groups 1, 2 and control group were tested for significance at 0.05 level of confidence against confidential interval value. The mean differences between experimental group 1 and experimental group 2, experimental group I and control group and experimental group II and control group were 0.23, 0.27 and 0.5 respectively. The confidence interval required to be significant was 0.12. Due to rope skipping and dands and baithaks training agility significantly improved whereas no improvement was seen in control group. However as there is significant difference between experimental group 1 and 2 in favour of dands and baithaks training it is found that dands and baithaks training is superior in developing agility.

Table 1: Analysis of Covariance of Pre-Test Post Test and Adjusted Post Test on Agility of Different Groups (Scores in Seconds)

	Experimental Group 1	Experimental Group 2	Control Group	Source of Variance	Sum of Squares	Degrees of Freedom	Mean Squares	F
Pre Test Mean	9.06	9.12	9.22	Between	0.13	2	0.07	0.63
				Within	2.85	27	0.11	
Post test Mean	8.77	8.61	9.21	Between	1.87	2	0.94	8.06*
				Within	3.14	27	0.12	
Adjusted Post Test Mean	8.85	8.62	9.12	Between	1.21	2	0.61	43.59*
				Within	0.36	26	0.01	

* Significant at.05 level of confidence.

Table 2: Scheffe's Post Hoc Test Mean Differences on Agility among Three Groups (Scores in Seconds)

Experimental Group I	Experimental Group II	Control Group	Mean Differences	Confidence Interval Value
8.85	8.62	-	0.23*	0.12
8.85	-	9.12	0.27*	0.12
-	8.62	9.12	0.5*	0.12

* Significant at.05 level of confidence.

Flexibility

Table 3 shows the analyzed data on agility. The pre-test means of flexibility were 12.25 for experimental group 1, 12.15 for experimental group 2 and 11.14 for control group. The obtained “F” ratio was 1.73. The post-test means of flexibility were 13.06 for experimental group 1, 13.24 for experimental group 2 and 11.23 for control group. The obtained “F” ratio was 8.06 was higher than the table F-ratio 6.38. The adjusted post-test means of flexibility were 12.70 for experimental group 1, 12.98 for experimental group 2 and 11.86 for control group. The obtained “F” ratio of 12.82 was higher

Since, the analysis of covariance result was significant; to find out the pair wise comparison Scheffe’s post hoc test was conducted. The results are presented in table 4. Table 4 shows the Scheffe’s Post-Hoc test results. The ordered adjusted final mean difference for flexibility of experimental groups 1, 2 and control group were tested for significance at 0.05 level of confidence against confidential interval value. The mean differences between experimental group 1 and experimental group 2, experimental group I and control group and experimental group II and control group were 0.18, 1.83 and 2.01 respectively. The confidence interval required to be significant was 0.16. Due to rope skipping and dands and baithaks training flexibility significantly improved whereas no improvement was seen in control group. However as there is significant difference between experimental group 1 and 2 in favour of dands and baithaks training it is found that dands and baithaks training is superior in developing flexibility.

Table 3: Analysis of Covariance of Pre-Test Post Test and Adjusted Post Test on Flexibility of Different Groups (Scores in Centimeters)

	Experimental Group 1	Experimental Group 2	Control Group	Source of Variance	Sum of Squares	Degrees of Freedom	Mean Squares	F
Pre Test Mean	12.25	12.15	11.14	Between	7.49	2	3.07	1.74
				Within	58.07	42	0.11	
Post Test Mean	13.06	13.24	11.23	Between	24.70	2	12.94	6.38*
				Within	52.30	42	1.12	
Adjusted Post Test Mean	12.70	12.98	11.86	Between	26.80	2	13.40	12.82*
				Within	41.41	41	1.01	

* Significant at.05 level of confidence. (4.21)

Table 4: Scheffe’s Post Hoc Test Mean Differences on Flexibility among Three Groups (Scores In Seconds)

Experimental Group I	Experimental Group II	Control Group	Mean Differences	Confidence Interval Value
13.06	13.24	-	0.18*	0.16
13.06	-	11.23	1.83*	0.16
-	13.24	11.23	2.01*	0.16

* Significant at.05 level of confidence.

CONCLUSIONS

Ropes skipping dands and baithaks training improve agility and strength of college kabaddi players. This result is consistent with other studies reviewed in this article.

REFERENCES

1. Buddy Lee, (2003), Jump Rope Training, Champaign, Illinois: Human Kinetics, PP – 1-3.

2. "Jumping rope is cheap, portable, and burns more calories than you might think". WebMD. Retrieved 2007-07-29.
3. Betsy Stephens, Ultra fitness training retrieved from, http://ultrafitnessstraining.com/?page_id=336, on March 08, 2013.
4. Cahperd (2005) (Canadian Association for Health, Physical Education, Recreation and Dance), "Rope Skipping Fitness and Activity Program", [http://www.cahperd.ca/\(17.04.2005\)](http://www.cahperd.ca/(17.04.2005)).
5. Kim, S.H., Kang, H.Y., Chae, H.W., Jung, S.L., Lee, J.S., Kim, B.S., Lee, C.D., Byrne, H.K., 2001. Effects of 12-Weeks of Rope Skipping Exercise Training on Body Composition and Plasma Leptin of Obese Adolescent Boys. *Medicine and Science in Sports and Exercise*,33(5), 228.
6. Quirk, J.E., Sinning, W.E., 1982. Anaerobic and Aerobic Responses of Males and Females to Rope Skipping. *Medicine and Science in Sports and Exercise*, 14 (1): 26-29.
7. Town, G.P., Sol, N., Sinning, W.E., 1980. The Effect of Rope Skipping Rate on Energy Expenditure of Males and Females. *Medicine and Science in Sports and Exercise*, 12 (4): 295- 298.
8. Atreya, Shanti Prakash (1965), *Yoga Manovigyan ki Rup Rekha*[A Summary Sketch (lit., Blueprint) of Yoga and Psychology]. Moradabad: Darshan Printers.
9. Gurunathan, M. (2014). Effects of Isolated and Combined Training of Dands Baithaks and Yogasanas on Specific Physical and Physiological Variables among School Boys.
10. Kawano, H., Mineta, M., Asaka, M., Miyashita, M., Numao, S., Gando, Y,... & Higuchi, M. (2013). Effects of different modes of exercise on appetite and appetite-regulating hormones. *Appetite*, 66, 26-33.
11. Quirk, J. E., & Sinning, W. E. (1982). Anaerobic and aerobic responses of males and females to rope skipping. *Medicine and Science in Sports and Exercise*, 14, 26–29.
12. Town, G. P., Sol, N., & Sinning, W. E. (1980). The effect of rope skipping rate on energy expenditure of males and females. *Medicine and Science in Sports and Exercise*, 12, 295–298.
13. Orhan, S., Pular, A., Erol, A.E., 2008. The Effects of The Rope and Weighed Rope Trainings on The Physical and Physiological Parameters of The Basketball Players. *Firat University Journal of Health Sciences (Medicine)*, 22 (4), 205-210.

