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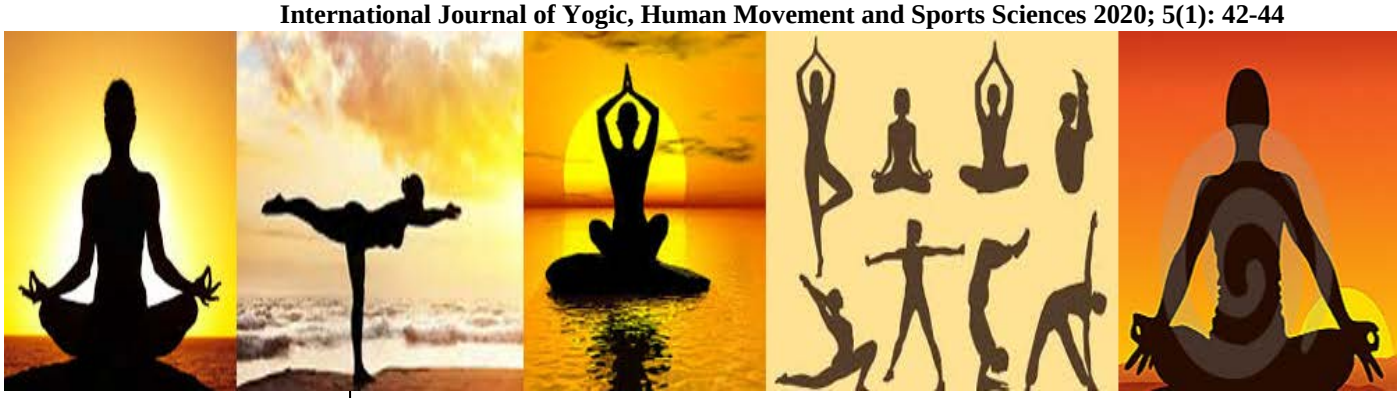

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Exploration and effect of parcourse training on speed and leg strength

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Abstract
Aim: The purpose of the present study was to find out the effect of par course training on speed and leg strength.
Methods: For this purpose, 30 male players from various games and sports, studying Bachelor Degree in the Department of Physical Education and Sports Sciences, Chaudhary Charan Singh University, Meerut, Uttar Pradesh were selected as subjects and their age between 18 and 23 years. They were divided into two equal groups, each group consisted of fifteen subjects, in which, Group – I underwent par course training and Group – II acted as control that did not participate in any special activities apart from their regular curricular activities. The training period for this study was three days (alternative days) per week for twelve weeks. Prior to and after the training period the subjects were tested on speed and leg strength. Speed was assessed by administering 50 meters dash and leg strength was measured by using leg lift with dynamometer. The Analysis of Covariance (ANCOVA) was used to find out any significant difference that was exists between the parcourse training group and control group on selected criterion variables.
Results: The result of the study shows that parcourse training group has improved the speed and leg strength significantly (p<.05) when compared as the control group. Conclusions: It was concluded from the results of the study that parcourse training has improved the speed and leg strength.

Keywords: Parcourse training, speed, leg strength and ANCOVA

Introduction
Training involves construction of exercise programme to develop an athlete for a particular athletic event. Thus, increasing skill and energy capacities take equal consideration. The greatest concern among today's athletes in soccer, football, baseball, rugby, lacrosse, field hockey, and most other sports is, how to improve playing speed, the speed, of all movement, including starting, stopping, accelerating, changing the direction of the body, delivering or avoiding a blow, sprinting, and split- second decision making during sports competition. Speed and strength are integral component of fitness found in varying degrees in all athletic movements. Simply saying the combination of speed and strength is power. Throughout this century and no doubt longer before, jumping, bounding and hopping exercises have been used in various ways to enhance athletic performance. Strength has been considered as the most important condition ability. It has been the most significant to enhance sports techniques and performance. Development of strength also contributes to indirect development of other condition abilities namely speed and endurance. Since all sports movement are created by the contraction of muscles, therefore, strength is an important components of varies conditional abilities, skill and tactical action. Strength is the ability of a muscle of get over resistance. Leg strength is very essential for sports persons, especially athletes. The leg strength of a muscle is related to its cross sectional area of girth, the large the muscle it is. Strength training increases the contractile protein that gives the muscle its pulling power. By comparing strength to performance, it is possible to determine if more strength is needed. If an athlete's performances improve with increased strength training is to be recommended. Leg strength is the capacity of the lower muscle to exert muscular force. Participation in physical activities will improve the strength and size of muscle in the thigh and other parts of the body. The fibers of the muscle can develop through a high resistance training programme. It also improves the size of the muscle.

The strength of the muscle also depends upon the size of the muscle. Rigorous training, particularly, when done against heavy resistance (weights) usually results in muscle fiber thickening.

Parcourse or fitness trail training

A fitness trail, trim trail or parcourse consists of a path or course with outdoor exercise equipment or obstacles installed along its length for exercising the human body to promote good health. The course is designed to promote physical fitness training in the style attributed to Georges Hébert. In general, fitness trails can be natural or man-made, located in areas such as forest, transportation rights-of-way, parks, or urban settings. Equipment exists to provide specific forms of physiological exercise, and can consist of natural features including climbable rocks, trees, and river embankments, or manufactured products (stepping posts, chin-up and climbing bars) designed to provide similar physical challenges. The degree of difficulty of a course is determined by terrain slope, trail surface (dirt, grass, gravel, etc.), obstacle height (walls) or length (crawls) and other features. Urban parcourses tend to be flat, to permit participation by the elderly, and to accommodate cyclists, runners, skaters and walking. The new concept of an outdoor gym, containing traditional gym equipment specifically designed for outdoor use, is also considered to be a development of the parcourse. These outdoor exercise gyms include moving parts and are often made from galvanised metal.

Station-based fitness trails

The average fitness trail is broken is broken up into roughly 10 stations, each catered to a different aspect of physical fitness. Park workout stations are marked with signs detailing calisthenic instruction and safe exercise tips. It's not uncommon to find chin-up bars, stepping posts, balance beams, and posts to facilitate various stretches, but some sites are paving the way with adult playground fitness equipment to ensure a safe, guided workout. In the modern era, these fitness centers have found their way beyond the old confines of public parks and hiking trails, to urban blocks and even college campuses.

Benefits of Fitness Trails

Experienced health nuts can tell you that the more you work out, the more your body adapts to a routine. The best way to continue building stamina is to add variation to your workout. This is where fitness trails provide a great service to even the most refined athletes. One station works your leg muscles, the next station strengthens your core, then the third station focuses your upper body. By maintaining a light jog in between stations, you pattern each rotation with a good dose of cardio and the work of organizing your workout regimen is done for you. This variation also helps to break up the monotony, so you don't burn out on the same challenge in the same spot. It's not just a change in exercise. It's a change in scenery. It's a workout and an adventure rolled into one fluid experience. Additionally, If you've done a course before, you can do it in a different order for an entirely different, and more challenging experience. May of these stations are incorporated to begin and end with stretches, to help the less experienced or disciplined excercisers acclimate to the physical tests ahead. This keeps muscles and joints limber while reducing the threat of injury.

Methodology

Selection of Subjects: Thirty male players from various sports and games, studying Bachelor Degree in the Department of Physical Education and Sports Sciences, Chaudhary Charan Singh University, Meerut, Uttar Pradesh were selected as subjects in the age group of 18 to 22 years. They were divided into two equal groups, each group consisted of fifteen subjects, in which Group – I underwent parcourse training and Group – II acted as control that did not participate in any special activities apart from their regular curricular activities.

Training Period: parcourse training was conducted three days (alternative days) per week for twelve weeks.

Criterion Variables Selected: The researcher consulted with the physical education professionals and selected the following as criterion variables: 1. Speed and 2. Leg strength.

Testing tool and Procedure: The selected criterion variable such as speed was assessed by administering 50 meters dash and leg strength was measured by leg lift with dynamometer. The data were collected before and immediately after the experimental period as pre and post tests respectively and they were statistically examined for significant difference, if any, applying the analysis of covariance (ANCOVA). In all the cases, .05 level of confidence was used to test the significance, which was considered as an appropriate.

Results

The data collected on speed and leg strength between parcourse training group and control group were analysed and presented in Table 1.

Table 1: Analysis of Covariance on Speed and Leg Strength of Parcourse Training Group and Control Group

Variable Name	Group Name	Parcourse Training Group	Control Group	'F' Ratio
	Pre-test Mean ± S.D	7.49 ± 0.012	7.53 ± 0.026	0.07
	Post-test Mean ± S.D.	6.87 ± 0.032	7.52 ± 0.032	5.58*
Speed (in seconds)	Adj. Post-test Mean	7.07	7.54	35.24*
	Pre-test Mean ± S.D	76.20 ± 2.16	76.25 ± 1.98	1.07
	Post-test Mean ± S.D.	80.21 ± 1.98	76.95 ± 2.26	7.61*
Leg Strength (in Kgs)	Adj. Post-test Mean	80.03	76.91	47.47*

*Significant .05 level of confidence. (The table values required for significance at .05 level of confidence with df 1 and 28 and 1 and 27 were 4.21 and 4.20 respectively).

After applying the analysis of covariance, the result of this study shows that there was a significant increase in speed and leg strength for the parcourse training group. Further, comparing the adjusted post-test means of the criterion variables, such as speed (F- ratio – 35.24 $p > 0.05$) and leg strength (Fratio – 47.47 $p > 0.05$) the parcourse training group was significant. The result of the study also shows that there was a significant difference in total speed and leg strength

between the parcourse training group and control group.

Discussion

In the present study, the parcourse training group increased the speed and leg strength significantly. Methodology of training has written one of the most important bio ability required in sports is the speed or the capacity to travel on air more quickly. Moreover, there are another benefits of parcourse training, which they help to burn off the fat from muscles. Thus, parcourse training may help them to improve their fitness.

Conclusion

Based on the results of the study, the following conclusions were drawn, There was a significant improvement after the parcourse training group when compared with control group on speed and leg strength which was supported by the findings of Bompa (1996) [5] and Gotchell (1976).

There was a significant difference between e training group when compared with control group on speed and leg strength.

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