

A Comparative Study on Health Related Fitness among Vegetarian and Non Vegetarian Female Athletes of L.N.I.P.E

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Abstract

The purpose of this study was to determine the health related fitness among vegetarian and non vegetarian female athletes of L.N.I.P.E. There were 60 subjects selected randomly (30 from each group) who have participated at the level university in different games/sports. To evaluate the health related fitness of the female athletes, selected test for the selected variables of the health related fitness components were administered based on the validity and reliability of the tests developed by different tester. The test selected for health related fitness variables are 12min.run /walk test for cardio respiratory endurance, sit-ups for muscular endurance, push –ups for muscular strength, sit and reach test for flexibility and skin fold for body composition (biceps, triceps, subscapula and supraspine). To find out health related fitness among vegetarian and non vegetarian female athlete of L.N.I.P.E. independent ‘t’ test was used. Result showed that among five variables of health related fitness only one variable showed significance difference that is cardio respiratory endurance and other variables muscular strength, endurance, flexibility and body composition showed insignificance difference. The level of significance was at 0.05.

KEYWORDS: Health related fitness components (cardio respiratory endurance, muscular strength, muscular endurance, body composition and flexibility) vegetarian and non- vegetarian.

Introduction

Nutrition can help enhance athletic performance. An active lifestyle and exercise routine, along with eating well, is the best way to stay healthy. Athlete must understand that a balanced diet is essential to meet their individual energy requirements and it must suit the specific needs of the physical exercise demands. Athletes require an adequate food intake to meet the high level of energy expenditure, to maintain the homeostasis, to prevent exercise – related stress disorders, to achieve an appropriate body composition, and to sustain athletic performance. Inadequate nutritional intake is more common in female athletes than in their male counterparts. Proper diet is paramount for active individuals to maintain adequate energy during physical activity and for post activity recovery.

A person who does not eat or does not believe in eating meat, fish, fowl, or, in some cases, any food derived from animals, as eggs or cheese, but subsists on vegetables, fruits, nuts, grain etc. known as vegetarian person. When people think about a vegetarian diet, they typically think about a diet that doesn't include meat, poultry or fish.

In non-vegetarian diets include both plants and animals. A non – vegetarian persons are that persons who derives its energy and nutrients from both plant and animals. Also called omnivorian.

Health related physical fitness can be defined as the ability of a person to perform daily activities with vigour, and by traits and capacities that are associated with a low risk for the development of chronic diseases and premature death. Health related fitness is often divided into several components that are cardio respiratory endurance, muscular strength, muscular endurance, flexibility and body composition. The components of fitness each work together to contribute to the ability of the body to handle physical demands. The more efficient the body functions, the higher the level of fitness. Optimal fitness is a combination of lifestyle, nutrition, habits, but it cannot be reached without an appropriate level of physical activity.

Materials and Methods

As the study was being conducted on university athletes, an intact group of 60 students (30 from each) of L.N.I.P.E., Gwalior, who have participated at the level university in different games/sports, have been selected as subjects for the study. To evaluate the health related fitness of the female athletes, selected test for the selected variables of the health related fitness components were administered based on the validity and reliability of the tests developed by different tester. The tests were as follows:

- Cardio respiratory endurance: 12 min run/walk test.
- Muscular strength : push ups
- Muscular endurance: sit ups
- Flexibility: sit and reach test
- Body composition: skin fold measurement (biceps, triceps, subscapula and supraspine).

The data was collected by administering tests by the scholar herself with the help of guide. All the subjects briefed about purpose of the study. The entire tests were demonstrated and explain to the subjects by the scholar. In order to compare study of health related physical fitness variables among vegetarian and non vegetarian female athletes in which independent “t” test was applied at significance level of 0.05.

Results

The data collected were analyzed statistically and the outcome generated has been given below:

Table 1**MEAN DIFFERENCE OF THE SELECTED HEALTH RELATED PHYSICAL FITNESS VARIABLES OF VEGETARIAN AND NON-VEGETARIAN**

Variables	Df	Mean Difference	t-value	Sig.
Sit ups	58	-.83	-.381	.704
Push ups	58	-1.36	-.627	.533
Flexibility	58	.43	.341	.734
Endurance	58	-73.42	-3.499*	.001
Body composition	58	.87	1.237	.221

*Significant $t(58)_{0.05}=2.00$ *

It can be seen from table 1 that the value of t- statistics is-3.499 in case of endurance. Since calculated value t (= -3.499) is greater than tabulated value t (=2.00), null hypothesis may be rejected and it may be concluded that endurance of non vegetarians are significantly higher than that of vegetarians. This t value is significant as the p-value is 0.001 which is less than 0.05. In case of other variables i.e. sit ups, push- ups, flexibility and body composition calculated “t” value is less than tabulated value so these variables did not exhibit the significant difference. So the researcher failed to reject null hypothesis in case of these variables.

Discussion

In this studies only one component of health related fitness showed significant difference and other four components have not shown any significant difference in comparison to health related fitness among vegetarian and non- vegetarian female athletes.

The research scholar hypothesized that there would be significant difference between the health related fitness components among vegetarian and non- vegetarian female athletes.

The findings of the study however revealed that there were no significant differences of health related fitness among vegetarian and non vegetarian female athletes except one component that is cardio respiratory endurance.

In case of cardio respiratory endurance significant difference has been found in the non-vegetarian female's diet. It may be due to the fact that after the carbohydrate store is exhausted in a vegetarian female's diet, there is not much high quality protein to support the body's functions, by which they may have less endurance as compared to non-vegetarian.

In a study conducted by Raben A, et. al, 1992, endurance performance time was higher for six and lower for two after the mixed diet compared with the vegetarian diet. This was not significant. In conclusion, 6 week on a lacto-ovo vegetarian diet caused a minor decrease in total testosterone and no significant changes in physical performance in male endurance athletes compared with 6 week on a mixed diet.

In other variables like muscular strength, muscular endurance, flexibility and body composition it showed insignificant difference which may be due to the fact that those who are vegetarians, they must take some extra supplements which were not controlled by the researcher. As in one of the studies by **Sampa Roy**, in which it has been found that other variables like height, weight, flexibility and body composition showed insignificant difference. More over weight and body composition are primarily influenced by heredity of the individual. Probably by taking non-vegetarian food specially meat/fish/egg etc. they are slightly better off in terms of protein quality (first class protein) than that of vegetarian female athletes where except milk and milk products (second class protein), their diet consists of no other good quality protein.

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