

Comparative study of Energy Intake and Expenditure of Judokas and Long Distance Runners

Satish Kumar

D.P.E, Meritorious School, Mohali, India

The purpose of the study was to compare the energy intake and energy expenditure of male judokas and long distance runners. The subjects were from the different affiliated colleges of Punjabi University, Patiala who participated at least inter-university level competitions. To collect the data from the subject's dietary questionnaire were used. In order to analyze the scores of energy intake and expenditure of judokas and long distance runners, the disrupted technique was used. Furthermore to find out significant comparison between the scores of subjects on energy intake and expenditure of judokas and long distance runners the 't' value was employed for testing of the hypothesis whose level of significance was set at 0.01 level. The results showed that the energy intake and expenditure was more in male long distance runners as compared to male judocas. When 't' value was calculated it was significant at 0.01 level, which showed significant difference in the caloric intake and expenditure between judokas and long distance runners.

KEYWORDS: Energy, Intake, Expenditure, Judokas, Runners

Introduction: Life cannot be sustained without adequate nourishment. Man needs adequate food and a wide range of nutrients for growth, development, to perform various functions in the body and to lead an active and healthy life. Nutrition is the science that deals with food and its uses by the body. The science of nutrition has a great value for its ultimate goal, the development and maintenance of strong, study bodies. It is the science of foods and their relation to health. The main raw fuel for biological work takes in the form of carbohydrates, proteins and fats. Vitamins and minerals plays important and highly specific role in activities and facilitating energy transfer throughout the body and regulate the metabolism is one in which the supply of required nutrients and adequate for tissue maintenance, repair and growth. Energy has the greatest demand during physical activities. The energy trapped within physical bonds of carbohydrates, fats and proteins is extracted during a series of complex chemical reactions and made available to the cells in the form of energy currency ATP. All bodily functions both at rest and during exercise require energy. It is possible to classify both food and physical activity in terms of common denominator energy. Athletic performance improves with wise nutrition and crumbles with nutritive deficiency. Knowledge of food and nutrition has a direct bearing on the maintenance of sound health of an individual. The energy balance requires the understanding of facets of energy expenditure and energy intake. The knowledge of caloric intake just like caloric expenditure is very important. An athlete or coach must be familiar with the planning of diet from the view point of nutrient requirement of his body. Individual nutritional needs vary, depending on the particular sport or activity and the level at which a person competes. However, for all those involved in sport, an adequate fluid and carbohydrate intake is particularly important. Nutritional status plays an important role in the sports performance. Man needs all the nutrients i.e. energy, proteins, vitamins, minerals in different amounts to grow lives and thrive. An adequate supply of these nutrients in the diet is necessary for good health. Nutrition significantly influences

athletic performance, therefore athletes and their support teams need to understand how to tailor food and fluid intakes to individual requirements, and how to fit refueling into busy lifestyles. Key challenges of sports nutrition include maximizing glycogen stores ensure adequate protein intake for recovery and repair, preventing dehydration, and optimizing daily nutrient and fluid intake to maximize performance during training and competition. Sports nutrition should be based on a healthy well balanced, high carbohydrate, low fat diet and as such may be very different from typical western diets. Just like physical conditioning, nutritional conditioning should also be considered as an important of training of athletes. An appraisal of the athletes from the nutritional point of view is likely to inculcate in them good and healthier eating habits which will let them lead a happier, healthier and longer life. As the physical active individuals or active athletes burn more calories in comparison to the inactive individuals, and put more stress on the metabolic processes of the body, therefore dietary requirements of athletes need a special consideration. Investigator conducted this study to know the differences of energy intake and energy expenditure of judokas and long distance runners who participated atleast interuniversity competitions.

Methodology: The investigator collected the data from male judokas and long distance runners those who have participated at least inter-university level competitions. The researcher collected the data of 20 players from the different affiliated colleges of Punjabi University Patiala. Ten players of judo and ten long distance runners were taken for the study. The data was collected from the subjects during their inter university camps of these games in Punjabi University Patiala. Purposive sampling technique was used to collect the data. To collect the data from the subject's dietary questionnaire was used. For determining the caloric intake, a record of everything eaten and drink along with the specific amount has recorded. A food database had been prepared of different Indian foods about 50 commonly used recipes and for determining the caloric expenditure every activity done by the player in the whole day e.g. walking, running, exercising etc. has recorded. For determining the total daily caloric/energy intake and expenditure for 7 days was recorded and thus total caloric intake and expenditure in Kcal/day had been found. t-test was used to find out the nutritional status of judokas and long distance runners.

Result:

The results of energy intake and expenditure of male judokas and long distance runners have been depicted in table 1 and table 2.

Table I

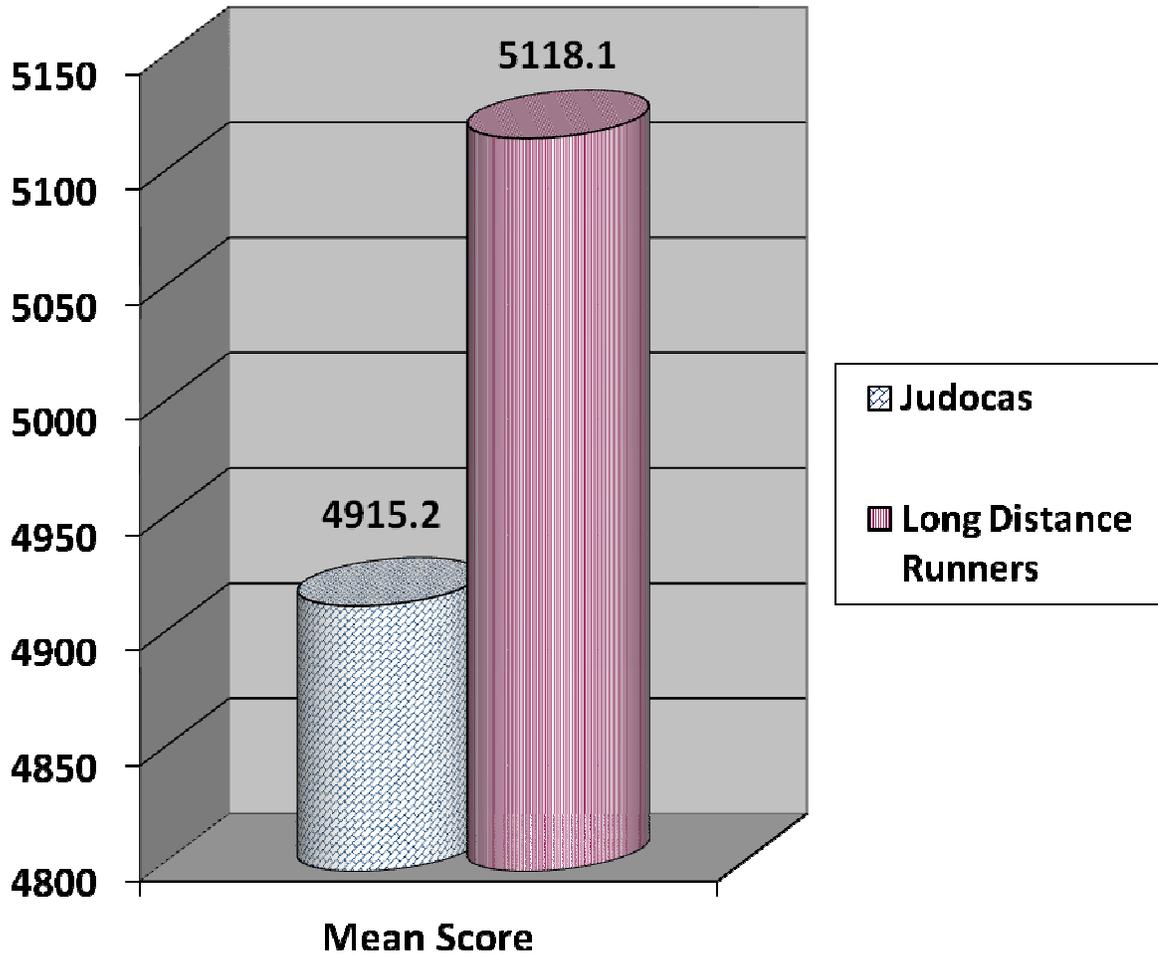
Mean, S.D. and 't' ratio for Calories Intake of Judokas and Long Distance Runners

Group	Total No. of observations	Mean	S.D.	t-ratio
Judokas	70	4915.2	143.28	9.9*
Long Distance Runners	70	5118.1	94.58	

* Significant at 0.01 level

No of observations = No. of days x No. of subjects

In Table 1, the mean scores showed that the energy intake of Judokas and Long Distance Runners was 4915.2 and 5118.1 respectively. Thus the results indicate that the energy intake was more in Long Distance Runners as compared to Judokas. When 't' value was calculated ($t = 9.9$, significant at 0.01 level), it gives significant difference in caloric intake between Judokas and Long Distance Runners.



Graph I

Calories Intake of Judokas and Long Distance Runners

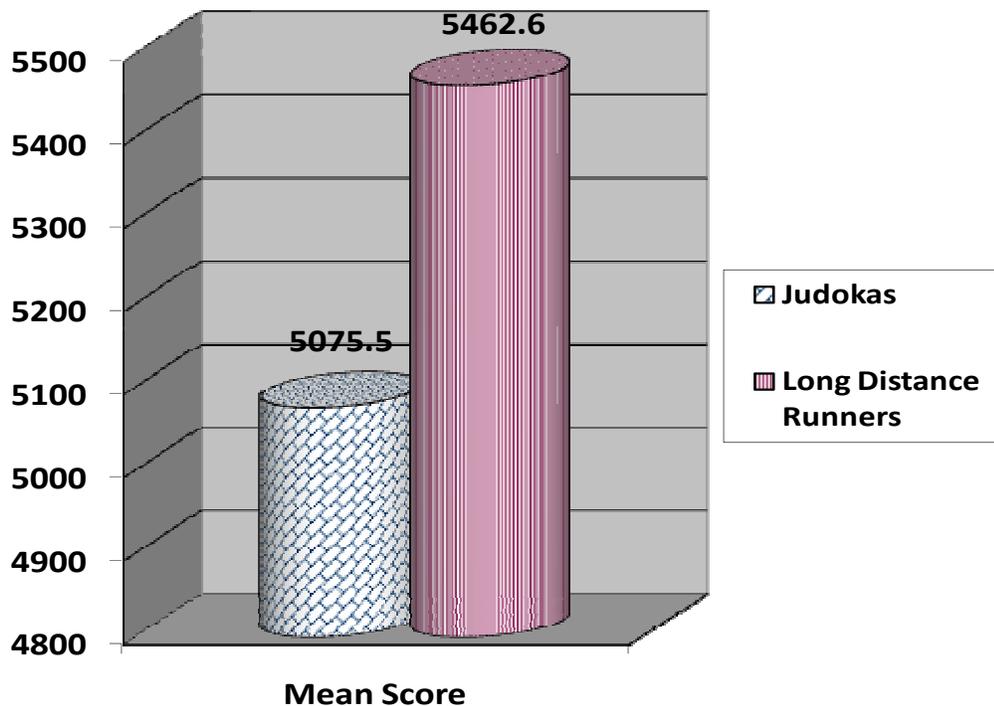
Table II
Mean, S.D. and ‘t’ ratio for Calories Expenditure of Judokas and Long Distance Runners

Group	Total No. of observations	Mean	S.D.	t-ratio
Judokas	70	5075.5	128.86	20.07*
Long Distance Runners	70	5462.6	96.97	

* Significant at 0.01 level

No of observations = No. of days x No. of subjects

In Table 2, the mean scores showed that the energy expenditure of Judokas and Long Distance Runners was 5075.5 and 5462.6 respectively. Thus the result indicates that the energy expenditure was more in Long Distance Runners as compared to Judokas. When ‘t’ value was calculated ($t = 20.07$, significant at 0.01 level) gives significant difference in caloric expenditure between Judokas and Long Distance Runners.



Graph II

Calories Expenditure of Judokas and Long Distance Runners

Conclusion

1. Energy intake of long distance runners was greater than judokas because long distance runners were taking better quality of food which was more enriched with fat and carbohydrates. The diet of long distance runners has been recommended by their coach and male judokas were taking their personal diet.
2. Energy expenditure of long distance runners was greater than judokas because long distance runners were doing more physical work as compared to other group.
3. Energy expenditure of long distance runners was more than energy intake.
4. Energy expenditure of judokas was more than energy intake.
5. Significant differences have been found in energy intake and energy expenditure between long distance runners and judokas.

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