

Research Paper :

## Comparative study of nutritional status of Weightlifters, Wrestlers, Judo players and standard nutritional chart

HEM PRASAD NATH AND AVINSAH M. ASANARE

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### ABSTRACT

The present study was undertaken on 75 male intercollegiate wrestling, judo and weight lifters (25 each game) aged between 18-25yrs. participating in Intercollegiate tournament of S.G.B. Amravati University, Amravati. The main purpose of the study was to compare the nutritional status of weight lifters, wrestler, judo players with standard nutritional chart. It was hypothesized that there would be a significant difference between the nutritional status of weight lifting, wrestling and judo players of inter collegiate level and the nutritional status might be low as compare with standard nutritional chart. One way Analysis of variance (ANOVA) was used to find out the significance. The main tool for the data collection process was questionnaire. A self-prepared questionnaire on sports nutrition was used in this study. It has been observed from the analysis that there was a significant difference between the daily caloric intake of players of different games. It was found that caloric need of weight lifters was more than that of wrestlers and judo players. The daily calorie intake was like Weightlifter > Wrestlers > Judo Players. In this study it was also seen that the mean caloric intake of players was less when it was compared with the standard nutritional chart.

See end of the article for authors' affiliations

Correspondence to:

**HEM PRASAD NATH**  
Department of Physical  
Education, Nagpur  
University, NAGPUR  
(M.S.) INDIA

**Key words :** Nutritional status, Standard nutritional chart

Sports nutrition is relatively new area of study involving the application of nutritional principles to enhance sports performance. A lifetime good nutrition is evidence by a well developed body. Good nutrition is basic to good health. Nutritional classification of foods may be broadly divided into three groups: (i) Energy yielding foods; (ii) Body building foods and (iii) Protective foods. In estimating the caloric requirement, the following factors will have to be taken into account (1) Physical activity (2) Body size and composition (3) Age and sex (4) Physiological state and (5) Climate and environment. Food groups and nutritive value of foods may be broadly classified into 11 groups based on their nutritive value: (1) Cereal and millers, (2) Pulses (legumes), (3) Nuts and oilseeds, (4) Vegetables, (5) Fruits, (6) Milk, (7)Eggs, (8) Meat, fish and other animal foods, (9) Fats and oil, (10) Sugar and other carbohydrate food and (11) Spices and condiments.

Athletes' combine both health related and performance related components of physical fitness into a fitness regimen. They have special nutrient needs including an increased need for calories, carbohydrates and protein. Athletes who excel in wrestling, weightlifting, and judo exhibit exceptional physical fitness, determination and discipline. For sports where speed and power is more important, gymnastic, sports, swimming (100,200mt.) skating the proportion of the nutrients in total energy intake

should be 18% protein, 30% .fat, 52% carbohydrate (Iannuskha 1980) in the event of power sports like, jumping, throwing, body building, weight lifting the rate of nutrients intake should be 22% protein, fat 30% carbohydrate 42%, For endurance sports like middle distance, long distance, marathon, walking, swimming 200 m and onward, kho-kho, the ratio of nutrients intake in diet should be protein 15%, fats 25%, and carbohydrate 60%. The main purpose of the present study was to study the nutritional status and daily diet schedule of weight lifters, judo players and wrestlers and also to compare the nutritional status of players with standard nutritional chart.

### METHODOLOGY

The data pertaining to this study was collected from intercollegiate level players in their respective games organized by Sant Gadge Baba Amravati University, Amravati. Twenty five players from each game *i.e.* weightlifting, wrestling and judo were selected randomly for this study whose age category was ranged in between 18-25 years. The main tool for the data collection process was questionnaire. A self-prepared questionnaire with the help of teachers, experts in the field of physical education and sports nutrition was used in this study. Questionnaire was divided into six sections in first section;

caloric intake of players was taken before and after exercise. In this section Question related to their diet, such as what will you take before exercise milk or juice etc. section wise division of questionnaire help the research scholar to calculate the caloric intake of players. Section 2 to 6 consisted of question related to the whole day food consumed or we simply say that how much calorie is taken by the players in whole day. The key for the questionnaire was given in Yes or No. Another box was provided in questionnaire to write the amount of food intake. A pilot study was administered to establish the reliability of the questionnaire used. Pilot study was taken on 14 players of each game participating on intercollegiate level organized by Sant Gadge Baba University, Amravati. 14 questionnaires were given to the players of different game players. Research scholar collected the questionnaire on same day from the players and statistical analysis of the acquired data was compiled in the light of split half method. The raw scores of the three events was put in series and then split into two halves alternately. Pearson product movement correlation method was applied. The value attended after calculation was 0.69. This value was then put in to Spearman – Brown Prophecy formula:

$$r N \frac{nr_1}{1 + (n - 1)r_1}$$

where ‘n’ is number of halves, ‘r<sub>1</sub>’ is the correlation coefficient and the attend reliability was 0.81 which was acceptable. After this, the final questionnaire was distributed and was collected on the same day of distribution

**OBSERVATIONS AND DISCUSSION**

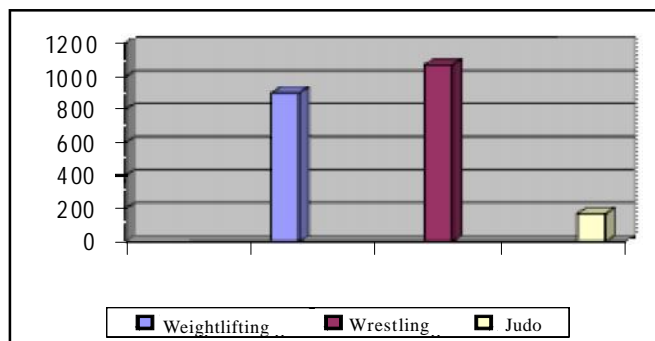
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nutritional status of weight lifters, wrestler judo players and standard nutritional chart. It was hypothesized that there would be a significant difference between the nutritional statuses of weight lifting, wrestling and judo players of intercollegiate level and the nutritional status might be low as compared with standard nutritional chart. One way Analysis of variance (ANOVA) was used to find out the significance. The results of the study are shown in Fig. 1 and in Table 1.

In Table 1 ‘F’ at 2 and 72 degree of Freedom at 0.05 level of significance was 3.123. As the obtained ‘F’ was more than the Tabulated ‘F’ there was a significant difference between the groups and hence there is a need of post Hoc test to see the difference.

From Table 2 was observed that the means of weight lifting, wrestling and judo players caloric intake was statistically highly significant (Table 2 and Fig. 2). Fig. 2 shows the comparison between the calculated carolic value and standard caloric value.

From Table 3 it was observed that the caloric intake value of weight lifters was less than that of standard



**Fig. 1 :** Significant difference between the paired mean of caloric intake of weight lifting, wrestling and judo

| Table 1 : Summary of analysis of variance for the data on caloric intake of given different games group |                      |               |               |         |            |
|---|----------------------|---------------|---------------|---------|------------|
| Source of variance  | df                   | Sum of square | Mean variance | F       | F critical |
| Between group   | K-1<br>3 - 1 = 2     | 16531466      | 8265733       |         |            |
| Within group  | N - K<br>75 - 3 = 72 | 6689452       | 92909.06      | 88.9685 | 3.123907   |
| Total   | 74                   | 23220918      |               |         |            |

Tabulated F<sub>(0.05) 74</sub> = 88.9685. \*Significant at 0.05 level of Confidence

| Table 2 : Difference between the paired mean of caloric intake of eight lifting, Wrestling and Judo players |           |      |                    |        |        |
|---|-----------|------|--------------------|--------|--------|
| Weight lifting  | Wrestling | Judo | Difference of mean | C.D.   | Remark |
| 5334.4  | 4433.4    |      | 901                | 3.1239 | *      |
| 5334.4  |           | 4265 | 1069.4             | 3.1239 | *      |
|   | 4433.4    | 4265 | 168.4              | 3.1239 | *      |

% Non critical difference                      \*critical difference

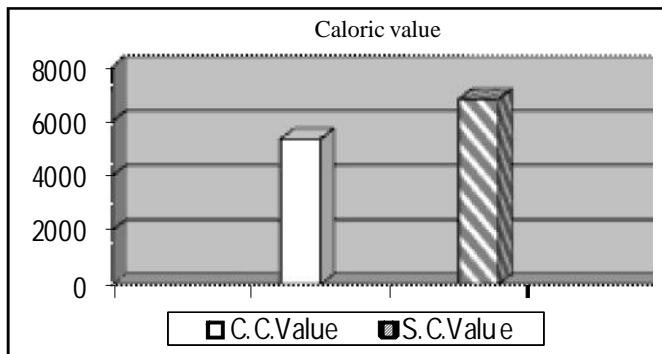


Fig. 2 : Comparison of daily caloric value intake of weight lifting players with standard caloric intake

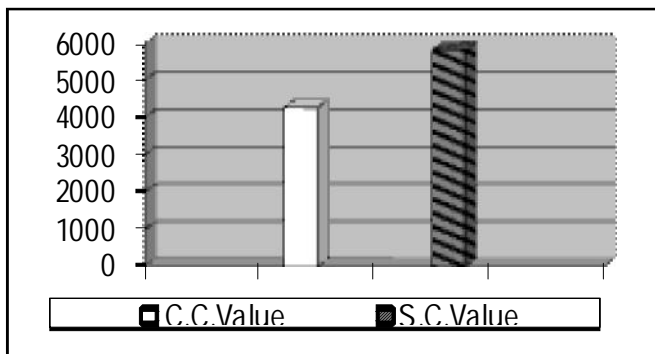


Fig. 4 : Comparison of daily caloric value intake of Judo players with standard caloric intake value

Table 3 : Comparison of daily caloric value intake of weight lifting players with standard caloric intake value

| Calculated mean value of caloric intake (K calorie) | Standard table value (K calorie) |
|---|----------------------------------|
| 5334.4  | 6800                             |
| 5334.4 < 6800                                       |                                  |

caloric intake value (Fig. 3). Fig. 3 shows the comparison between the calculated caloric value and standard caloric value.

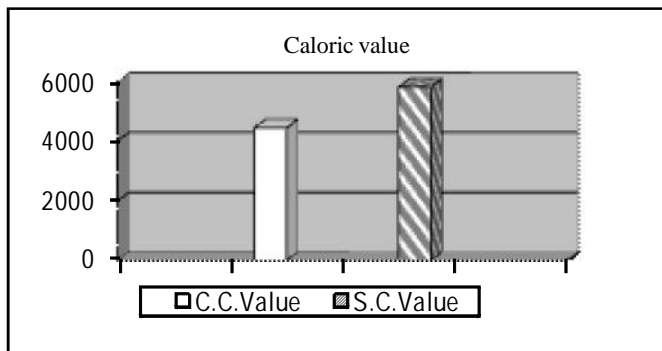


Fig. 3 : Comparison of daily caloric value intake of Wrestling players with standard caloric intake value

From Table 4 it was observed that the caloric intake value of wrestlers was less than that of standard caloric intake value. Fig. 4 shows the comparison between the calculated caloric value and standard caloric value.

Table 4 : Comparison of daily caloric value intake of wrestling players with standard caloric intake value

| Calculated mean value of caloric intake (K calorie) | Standard table value (K calorie) |
|---|----------------------------------|
| 4433.4  | 5800                             |
| 4433.4 < 5800                                       |                                  |

From Table 5 it was observed that the caloric intake value of judo players was less than that of standard caloric intake value.

Table 5 : Comparison of daily caloric value intake of Judo players with standard caloric intake value

| Calculated mean value of caloric intake (K calorie) | Standard table value (K calorie) |
|---|----------------------------------|
| 4625  | 5800                             |
| 4625 < 5800   |                                  |

It has been observed from the analysis that there was a significant difference between the daily caloric intake of players of different games that were weight lifting, wrestling and judo. In weight lifting a weight lifter need 6800 Kcal. per day because weight lifter burns high calorie during practice. Similarly, judo and wrestling players need 5800Kcal/day. The weight lifter burns 15.6 cal/min. and wrestler burns 14.20cal/min. similarly judo players burns 12.0 cal/ min. From this we found that caloric need of weight lifters was more than that of wrestlers and judo players. It was one of the major causes of the difference found in the different game players weightlifting, wrestling and judo in selected variables *i.e.* daily caloric intake.

Weightlifter > Wrestlers > Judo players

In this study it was seen that the mean caloric intake of players was less when it was compared with the standard nutritional chart. The mean caloric intake of weightlifter was 5334.4, judo players 4265 and wrestlers 4433.4 as follows:

5334.4 < 6800 cal, 4265 < 5800 cal, 4433.4 < 5800 cal

**Conclusion:**

From this study it was found that the low caloric intake of players was directly proportional to the

**Table 6 : Significant difference between the paired mean of caloric intake of weight lifting, wrestling and judo players**

| Weight lifting | Wrestling | Judo | Difference of mean | C.D.   | Remark |
|----------------|-----------|------|--------------------|--------|--------|
| 5334.4         | 4433.4    |      | 901                | 3.1239 | *      |
| 5334.4         |           | 4265 | 1069.4             | 3.1239 | *      |
|                | 4433.4    | 4265 | 168.4              | 3.1239 | *      |

**Table 7 : Comparison of daily caloric intake value of weight lifting, wrestling and Judo players with standard caloric intake value**

| Sr. No. | Game          | Obtained mean caloric value (Kcal) |   | Table value (Kcal) |
|---------|---------------|------------------------------------|---|--------------------|
| 1.      | Weightlifting | 5334.4                             | < | 6800               |
| 2.      | Wrestling     | 4433.4                             | < | 5800               |
| 3.      | Judo          | 4265                               | < | 5800               |

performance because low caloric intake means low energy consumption and decrease performance in the competition. There was significant difference in the nutritional status or daily caloric intake of weightlifting, wrestling and judo players, which are shown in Table 6 and 7.

Authors' affiliations:

**AVINASH M. ASANARE**, Department of Physical Education and Recreation, S.G.B. Amravati University, AMRAVATI (M.S.) INDIA

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