CHAPTER IV

RESULTS AND INTERPRETATION

The present study was undertaken with a view to evaluate the nutrition knowledge and practices among wrestlers in Maharashtra. To accomplish this objective, a questionnaire "Knowledge of Nutrition and its practices for Wrestlers" has been developed. The results of questionnaire development and status of nutritional knowledge of the wrestlers in Maharashtra have been presented in this chapter.

4.1 Results on Questionnaire Development

The researcher developed the questionnaire "Knowledge of Nutrition and its practices for Wrestlers" considering three phases:

- Preliminary phase-I,
- Middle phase-II, and
- Final phase-III.

4.1.1 Results on Preliminary Phase-I

After reviewing the literature on nutrition and sports performance, the researcher finally selected following dimensions to construct the questions for the inventory "Knowledge of Nutrition and its practices for Wrestlers":

1) Knowledge of nutrition.
2) Intake of Food.
3) Diet.
4) Vitamins and minerals.

On the basis of the above dimensions, the investigator prepared a total of 80 questions i.e., each dimension represented by 20 questions. Three nutritionists and three psychologists evaluated the dimension-wise questions and on the basis of their suggestions only 70 modified questions (items) were retained in the questionnaire. Primarily, the questionnaire (with 70 questions) was administered on 40 male wrestlers of mixed group (irrespective weight categories) and was re-administered after a gap of one month, the test-retest reliability coefficient was ranged from 0.48 to 0.65 (Table 4.1). However, the experts' opinions reveal that the questionnaire ensures content validity.

Table 4.1
Test-retest reliability of the questionnaire (Dimension-wise)

Dimension	Coefficient of reliability
A) Knowledge of nutrition	0.63
B) Intake of Food	0.60
C) Diet	0.65
D) Vitamins & Minerals	0.48

Thus, the preliminary form of the questionnaire was found reliable and valid.

4.1.2 Results on Middle Phase-II

In this phase, the preliminary form of the question was administered on large sample (n=1120) and the data were processed for item analysis. Each item (question) considers two types of analysis viz., degree of item difficulty (item-difficulty-index or cP) and item-discrimination (ULI i.e., Upper-Lower Index).

The dimension-wise average values of item-difficulty index and item-discrimination are presented in Table 4.2.

Table 4.2
Values of item-difficulty index and item-discrimination
(Dimension-wise)

Dimension	No. of items retained	item-difficulty-index or cP	item-discrimination
A) Knowledge of nutrition	**Item Nos.** 1,3,6,7,12, 17, 20, 21, 22, 24, 25, 36, 41, 48, 60 **Total = 15 Questions**	0.61*	0.39**
B) Intake of Food	**Item Nos.** 8, 10, 11, 13, 14, 16, 26, 27, 28, 33, 46, 49, 54, 36, 63 **= 15 Questions**	0.54*	0.41**
C) Diet	**Item Nos.** 4, 5, 18, 19, 23, 29, 30, 31, 34, 35, 37, 38, 39, 42, 43, 55, 56, 57, 59, 61 **= 20 Questions**	0.59*	0.35**
D) Vitamins & Minerals	**Item Nos.** 2, 9, 15, 32, 40, 44, 45, 47, 50, 51, 52, 53, 58,64, 65, 66 **= 16 Questions**	0.51*	0.38**
	Retained items = 66		

** Accepted range of cP value: From 0.5 to 0.7.*
***Accepted range of Item discrimination: Above 0.33*

Table 4.2 reveals that the values of item difficulty and item discrimination were retained within a normal range. The result of item analysis indicates that in Dimension-A (Knowledge of nutrition), Dimension-B (Intake of food), Dimension-C (Diet), and Dimension-D (Vitamins & Minerals), the retained

questions were 15, 15, 20, and 16 respectively. Thus, total 66 questions finally retained in the questionnaire.

Since there was no other questionnaire parallel to this questionnaire, the construct validity was established through item-total correlation, where the score of individual question was correlated with total score secured by 1120 sample. Thus, the validity coefficient was ranged from 0.63 to 0.67. This ensures that the questionnaire is valid.

Further, split half reliability was determined in calculating the relationship between the score of each wrestler (even and odd number) in the questionnaire ($r=0.68$, $p<0.01$). This ensures that the questionnaire is reliable. Finally, the questionnaire was having 61 items/ questions.

4.1.3 Results on Final Phase-III

It is now confirmed that the questionnaire as developed in this study has an accepted level of reliability and validity. Now prior to develop the norms, the data on 1120 subjects were subjected for testing normality (Bhattacharyya *et al.*,1977).

However, to establish the norms of the Questionnaire (Knowledge of Nutrition and its practices for Wrestlers), following procedures were considered:

- Nature & Characteristics of Subjects' (Ss') Distribution;
- Statistical Process in determining Norms; and
- Interpretation of Norms Obtained.

The results of normality have been presented in Table 4.3.

A) Nature and Characteristics of Ss' Distribution

It is observed from Table 4.3 that the distribution of performance scores in the Questionnaire was negatively skewed (Sk = -0.380). The standard error of skewness (σ_{sk}) of the scores was 1.0852 units. As the mean is the representative of large sample (n=1120), it expected that the subjects' (Ss') mean represent the population mean. Table 4.3 also revealed that the standard error of skewness (σ_{sk} = 1.0852, p>0.05) is not significant even at the 0.05 level, because the values of CR (critical ratio) of skewness was 0.357 unit which is far short of 1.96 units (Garrett, 1955). In fact, the value of skewness of this distribution is near about normal and the normal probability curve is almost perfectly symmetrical.

It has also been observed from Table 4.3 that the value of Kurtosis of the distributed scores in the Questionnaire is 0.252, which is leptokurtic in nature. Therefore, the leptokurtic distribution of scores revealed that the distribution of the scores of the subjects was homogeneous. In fact, a homogeneous group can produce a normal probability curve. Thus, the distribution of scores of the questionnaire represents a normal probability curve.

From the results presented above, it can be interpreted that inspite of negative skewness and leptokurtic distribution, the Ss' scores in the Questionnaire are approximately normal because of their homogeneous group characteristics.

The standard error of Kurtosis (σ_{ku} = 0.010) was estimated with a view to find out whether the obtained kurtosis value (Ku= 0.252) is significant or not. However, it is observed that the CR value of Kurtosis (CR or Ku = 1.375) is less than 1.96 units. From this CR value, it is interpreted that the value of Kurtosis as produced by the subjects was not significant even at the 0.05 level (p>0.05).

Therefore, without doubt, it can be said that the value of skewness and kurtosis of the curve represented by the scores of this questionnaire did not differ significantly ($p>0.05$) from the values of skewness and kurtosis of a normal probability curve.

The result was, further, confirmed by calculation of percentage-wise distribution of scores. The statistical analysis of the Subjects' scores revealed that 65.35% of scores were distributed within 1σ distance area; 94.41% of scores were within 2σ distance area; and 100% scores were within 3σ distance area respectively. These percentages of distribution showed that the curve representing the scores is also normal.

Finally, it is concluded that the distribution of the Subjects' scores in the questionnaire (Knowledge of Nutrition and its practices for Wrestlers) is normal. Thus, it was decided to find out the norms of this questionnaire.

Table 4.3

Characteristics of Distribution of Scores Obtained by the Subjects in the questionnaire
(Knowledge of Nutrition and its practices for Wrestlers)

Statistical Measures	**Distribution Characteristics of Ss' Scores in the Questionnaire**
Mean (Pts.)	092.56
SD	009.430
QD	001.360
Skewness (Sk)	-000.380
Kurtosis (Ku)	000.252[lk]
Standard Error of Skewness (σ_{sk})	001.0852
Standard Error of Kurtosis (σ_{ku})	000.010
CR of Skewness	000.357[a]
CR of Kurtosis	001.375[a]
Distribution of Scores	
1 σ distance	065.350
2 σ distance	094.410
3 σ distance	100.000

[a] Not Significant even at the 0.05 level (p>0.05)
[b] Significant at the 0.05 level (p<0.05)
[c] Significant at the 0.01 level (p<0.01)
[lk] Leptokurtic

B) Determining Norms

The scores of the subjects in the Questionnaire were grouped together and divided into logical step-intervals for frequency distribution. Measures of Central tendency and measures of variability were calculated using standard statistical procedures from the distributed frequency of the data. Finally, percentile norms were found out using group data (Garrette, 1985). The mid-point of each step was calculated and arranged.

The percentile norms have been presented in Table 4.4.

Table 4.4 demonstrated that in percentile norms, the P_{99} and the P_5 values of the Questionnaire were reported as 140 & above and 65 & below respectively.

Table 4.4

Percentile Norms of the Questionnaire
(Knowledge of Nutrition and its practices for Wrestlers)

Percentile Norms	Raw Scores in the Questionnaire	Percentile Norms
99	**140.00 & above**	**99**
95	**135.28**	**95**
90	**129.76**	**90**
85	**124.66**	**85**
80	**118.35**	**80**
75	**113.39**	**75**
70	**108.36**	**70**
65	**103.73**	**65**
60	**100.12**	**60**
55	**96.47**	**55**
50	**92.56**	**50**
45	**90.12**	**45**
40	**87.43**	**40**
35	**84.65**	**35**
30	**81.45**	**30**
25	**78.14**	**25**
20	**75.55**	**20**
15	**72.25**	**15**
10	**68.72**	**10**
05	**65.00 & below**	**05**

C) Derivation of Grades

The results of the percentile norms presented above were further substantiated to find out grade in the performance in the newly developed questionnaire. However, grading followed by percentile method was derived for the subjects using standard technique (Verducci, 1980). The derivation of grade in the test-items has been presented in Tables 4.5.

The grading was computed on the basis of the Likert's Five Point Scale. The raw score achieved in the questionnaire can be well interpreted easily so that an individual's performance score is either excellent or good or average or fair or poor can easily be determined.

Table 4.5

Grading Scale of Performance in the Questionnaire
(Knowledge of Nutrition and its practices for Wrestlers)

Grades	Raw Scores (achieved in the questionnaire)	**Grades**
Excellent (A)	**129.76 & above**	Excellent (A)
Good (B)	**113.39-139.99**	Good (B)
Average (C)	**81.45-112.99**	Average (C)
Fair (D)	**68.72-81.44**	Fair (D)
Poor (E)	**68.71 & below**	Poor (E)

The results presented in this chapter, in turn, finally indicate that the norms developed in this study were sufficiently reliable and valid to assess the Test of Knowledge of Nutrition and its practices for Wrestlers.

4.2 Results of Survey on Questionnaire

4.2.1 Result on Knowledge of Nutrition of the Wrestlers

Survey of the Wrestlers' **"knowledge on nutrition and its practices"** has been done by administering the newly developed questionnaire. The wrestlers were grouped into different weight categories viz., 96+ kg., 96 kg, 84 kg, 74 kg, 66 kg, 60 kg, and 55 kg respectively. The number of wrestlers in each category was 160.
The result of survey has been presented in Table 4.6, which revealed that the status of knowledge on nutrition of different weight categories (96+ kg., 96 kg, 84 kg, 74 kg, 66 kg, 60 kg, and 55 kg) were 102.05 (13.23), 106.48 (16.54), 97.62 (11.60), 110.68 (13.25), 105.24 (12.55), 112.03 (13.72) and 107.37 (12.26) respectively.

Table 4.6
Status of knowledge on nutrition of wrestlers in Maharashtra

Categories of Wrestlers	knowledge on nutrition (M±SD)
96+ kg	102.05 (±13.23)
96 kg	106.48 (±16.54)
84 kg	097.62 (±11.60)
74 kg	110.68 (±13.25)
66 kg	105.24 (±12.55)
60 kg	112.03 (±13.72)
55 kg	107.37 (±12.26)

The norms (as developed in this study i.e., vide Table 4.5) indicate that the range of average status is from **81.45 to 112.99**. It is amazing that mean performance of all the participated wrestlers falls within the range of "average status". Thus, the null hypothesis – *"HO_1: Nutritional knowledge and practices among the wrestlers in Maharashtra may not in vogue as per the requirement"* as formulated in this study has been sustained.

Percentage-wise status of Wrestlers' knowledge on Nutrition

Percentage-wise status of **"knowledge on nutrition"** among the wrestlers of selected weight categories has been presented in Table 4.7.

The result of revealed that –

- among 96+kg of wrestlers category, 80.24% had poor "Knowledge on nutrition", whereas only 1.50% had excellent knowledge.
- among 96 kg of wrestlers category, 78.86% had poor "Knowledge on nutrition", whereas only 1.78% had excellent knowledge.
- among 84 kg of wrestlers category, 72.45% had poor "Knowledge on nutrition", whereas only 2.55% had excellent knowledge.
- among 74 kg of wrestlers category, 66.83% had poor "Knowledge on nutrition", whereas only 4.17% had excellent knowledge.
- among 66 kg of wrestlers category, 70.34% had poor "Knowledge on nutrition", whereas only 3.50% had excellent knowledge.
- among 60 kg of wrestlers category, 55.85% had poor "Knowledge on nutrition", whereas only 3.00% had excellent knowledge.
- among 55 kg of wrestlers category, 35.00% had poor "Knowledge on nutrition", whereas only 1.56% had excellent knowledge.

In average, overall results revealed that 65.66% of the wrestlers in Maharashtra had poor knowledge on nutrition, whereas only 2.58% of them had excellent knowledge. Finally, 72.83% of the wrestlers had below-average level of knowledge on nutrition and only 7.88% of them had above-average level. It seems majority of the wrestlers in Maharashtra do not possess proper knowledge on nutrition and its practices (Fig.4.1). Thus, the null hypothesis- "*HO_1: Nutritional knowledge and practices among the wrestlers in Maharashtra may not be proper as per the requirement*" has been sustained.

Table 4.7
Status (%) of wrestlers' knowledge on nutrition and its practices

Wt Categories of Wrestlers	Knowledge on nutrition of the Wrestlers (%)				
	Excellent knowledge	Good knowledge	Average knowledge	Fair knowledge	Poor knowledge
96+ kg	1.50	1.25	10.25	6.76	80.24
96 kg	1.78	2.22	15.14	2.00	78.86
84 kg	2.55	1.00	20.62	3.38	72.45
74 kg	4.17	3.88	23.00	2.12	66.83
66 kg	3.50	5.66	12.50	8.00	70.34
60 kg	3.00	10.68	18.32	12.15	55.85
55 kg	1.56	12.44	35.20	15.80	35.00
Average	2.58	5.30	19.29	7.17	65.66

Further, the result of comparison of status of **"knowledge of nutrition"** among the selected weight categories has been presented in Table 4.8. The result of chi square (X^2) test revealed that there was no significance difference in **"knowledge of nutrition"** between different weight categories of wrestlers viz., 96+ kg Vs 96 kg (X^2=1.34, p>0.05), 96+ kg Vs 84 kg (X^2=1.47, p>0.05), 96+ kg Vs 74 kg (X^2=1.44,

p>0.05), 96+ kg Vs 66 kg (X^2=1.40, p>0.05), 96+ kg Vs 60 kg (X^2=1.41, p>0.05), 96+ kg Vs 55 kg (X^2=1.45, p>0.05), 96 kg Vs 84 kg (X^2=1.47, p>0.05), 96 kg Vs 74 kg (X^2=1.49, p>0.05), 96 kg Vs 66 kg (X^2=1.46, p>0.05), 96 kg Vs 60 kg (X^2=1.33, p>0.05), 96 kg Vs 55 kg (X^2=1.46, p>0.05), 84 kg Vs 74 kg (X^2=1.33, p>0.05), 84 kg Vs 66 kg, (X^2=1.45, p>0.05) 84 kg Vs 60 kg (X^2=1.36, p>0.05), 84 kg Vs 55 kg (X^2=1.39, p>0.05), 74 kg Vs 66 kg (X^2=1.42, p>0.05), 74 kg Vs 60 kg (X^2=1.35, p>0.05), 74 kg Vs 55 kg (X^2=1.41, p>0.05), 66 kg Vs 60 kg (X^2=1.29, p>0.05), and 66 kg Vs 55 kg (X^2=1.3134, p>0.05). These results indicate that there is no significant difference of level of nutrition and its practices among the wrestlers of different weight categories. This, in fact, supports the null hypothesis-"*HO_2: There will be no difference in nutritional status of the wrestlers of different weight categories*." Thus, the null hypothesis HO_2 as formulated in this study has been sustained (Fig.4.1).

Table 4.8
Comparative status of knowledge on nutrition and its practices among the wrestlers of different weight categories

Categories of Wrestlers	**knowledge on nutrition** (X^2 test)
96+ kg Vs 96 kg	1.34
96+ kg Vs 84 kg	1.47
96+ kg Vs 74 kg	1.44
96+ kg Vs 66 kg	1.40
96+ kg Vs 60 kg	1.41
96+ kg Vs 55 kg	1.45
96 kg Vs 84 kg	1.33
96 kg Vs 74 kg	1.49
96 kg Vs 66 kg	1.46
96 kg Vs 60 kg	1.43
96 kg Vs 55 kg	1.46
84 kg Vs 74 kg	1.33
84 kg Vs 66 kg	1.45
84 kg Vs 60 kg	1.36
84 kg Vs 55 kg	1.39
74 kg Vs 66 kg	1.42
74 kg Vs 60 kg	1.35
74 kg Vs 55 kg	1.41
66 kg Vs 60 kg	1.29
66 kg Vs 55 kg	1.31
*p<0.05, **p<0.01	

To summarize, the status on **"knowledge of nutrition"** among the wrestlers in Maharashtra is poor, which may affect the balance of calorie intake.

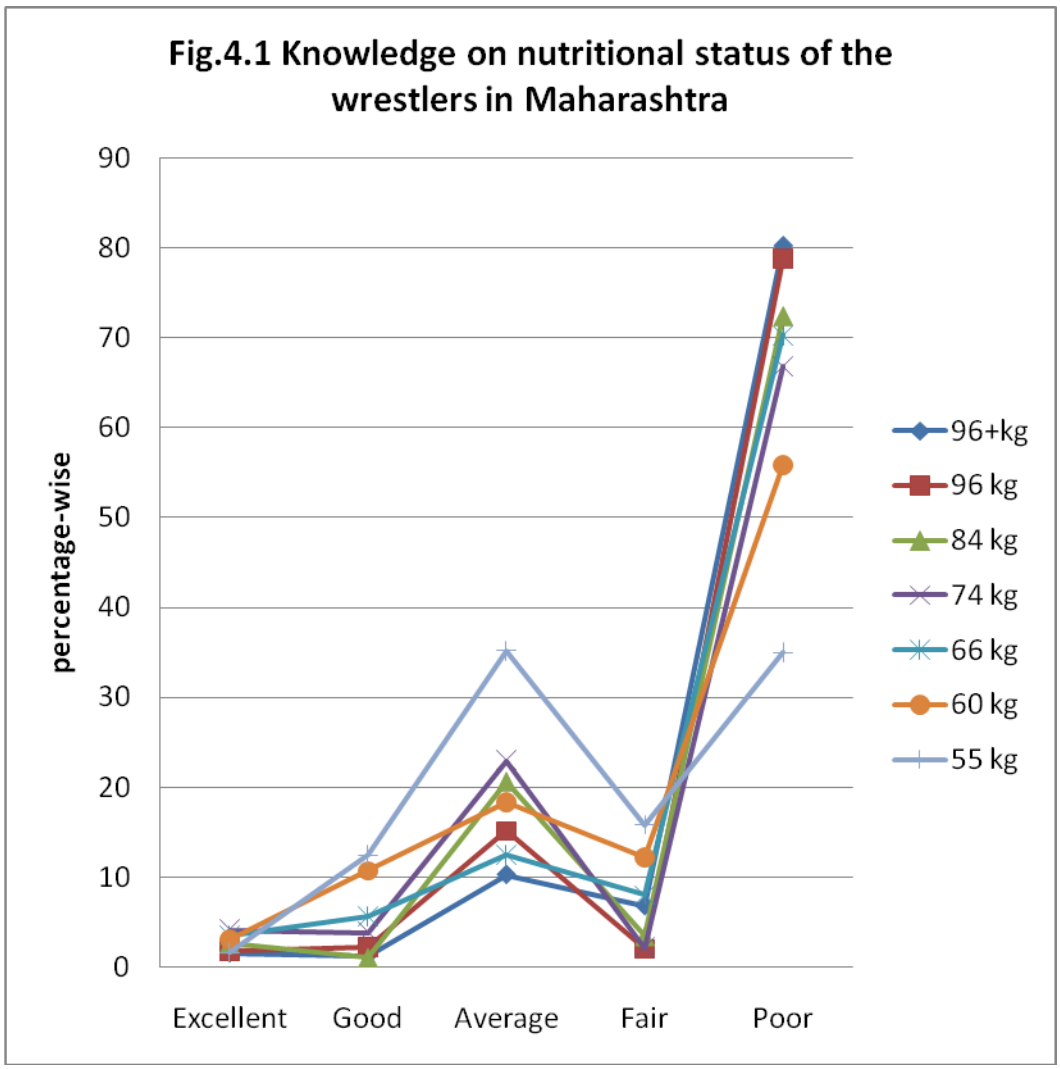
Fig.4.1 Knowledge on nutritional status of the wrestlers in Maharashtra
percentage-wise
90
80
70
60
50
40
30
20
10
0
Excellent
Good
Average
Fair
Poor
96+kg
96 kg
84 kg
74 kg
66 kg
60 kg
55 kg

4.2.2 Result on Status of Wrestlers' Calorie Intake

The result of survey of the Wrestlers' status of **"intake of calorie value"** has been presented in Table 4.9. The data presented in Table 4.9 indicates that the **required calories** for the wrestlers having 96+kg, 96 kg, 84 kg, 74 kg, 66 kg, 60 kg, and 55 kg weight categories are 6659.06 (354.79), 6404.56 (220.94), 5751.81 (11.60), 5057.67 (145.90), 4504.53 (92.11), 4078.56 (397.15) and 3689.87 (134.38) respectively.

The **actual intake of calories** by the wrestlers of 96+kg, 96 kg, 84 kg, 74 kg, 66 kg, 60 kg, and 55 kg weight categories were 8825.01 (403.18), 8635.71 (496.64), 7781.84 (408.65), 6284.76 (439.57), 5717.79 (275.93), 4850.66 (372.08) and 4677.08 (448.10) respectively.

The **excess intake of calories** by the wrestlers of 96+kg, 96 kg, 84 kg, 74 kg, 66 kg, 60 kg, and 55 kg weight categories were 2272.85 (419.96), 2230.48 (503.54), 2049.74 (412.18), 1215.65 (451.26), 1199.90 (290.07), 772.13 (376.68) and 991.35 (470.05) respectively.

Table 4.9
Status of calorie intake of wrestlers in Maharashtra

Wt Categories of Wrestlers	Calorie intake of Wrestlers (M±SD)		
	Required Cal	Actual intake	Excess intake
96+ kg	6659.06 (±354.79)	8825.01 (±403.18)	2272.85 (±419.96)
96 kg	6404.56 (±220.94)	8635.71 (±496.64)	2230.48 (±503.54)
84 kg	5751.81 (±11.60)	7781.84 (±408.65)	2049.74 (±412.18)
74 kg	5057.67 (±145.90)	6284.76 (±439.57)	1215.65 (±451.26)
66 kg	4504.53 (±92.11)	5717.79 (±275.93)	1199.90 (±290.07)
60 kg	4078.56 (±397.15)	4850.66 (±372.08)	772.13 (±376.68)
55 kg	3689.87 (±134.38)	4677.08 (±448.10)	991.35 (±470.05)

The result on Table 4.9 revealed that the wrestlers of Maharashtra take more calories than the required calories. However, it is not clear from this table that whether the intake of more calories is significantly higher or not.

Further, the result of t-test as presented in Table 4.10 revealed the t-values between required intake of calories and actual calorie intake of the wrestlers of different weight categories viz., 96+kg, 96 kg, 84 kg, 74 kg, 66 kg, 60 kg, and 55 kg were 5.36 ($p<0.01$), 5.12 ($p<0.01$), 4.39 ($p<0.01$), 2.54 ($p<0.05$), 2.21 ($p<0.05$), 2.03 ($p<0.05$) and 2.16 ($p<0.05$) respectively.

Thus, the result of t-test indicates that there is significant difference between required intake of calories and actual calorie intake of the wrestlers in the state of Maharashtra. Finally, the wrestlers of Maharashtra are taking excess calories, which seem to be detrimental.

Table 4.10
Significant difference between required calorie value and actual calorie intake of wrestlers in Maharashtra

Wt Categories of Wrestlers	**Required Cal** (M±SD)	**Actual intake** (M±SD)	**Mean Difference** (MD)	**df**	**Std.Error of Means (SE_M)**	**t-value**
96+ kg	6659.06 (±354.79)	8825.01 (±403.18)	2272.85	159	424.03	5.36**
96 kg	6404.56 (±220.94)	8635.71 (±496.64)	2230.48	159	435.64	5.12**
84 kg	5751.81 (±11.60)	7781.84 (±408.65)	2049.74	159	466.91	4.39**
74 kg	5057.67 (±145.90)	6284.76 (±439.57)	1215.65	159	478.60	2.54*
66 kg	4504.53 (±92.11)	5717.79 (±275.93)	1199.90	159	542.94	2.21*
60 kg	4078.56 (±397.15)	4850.66 (±372.08)	772.13	159	380.35	2.03*
55 kg	3689.87 (±134.38)	4677.08 (±448.10)	991.35	159	458.95	2.16*

*p<0.05, **p<0.01

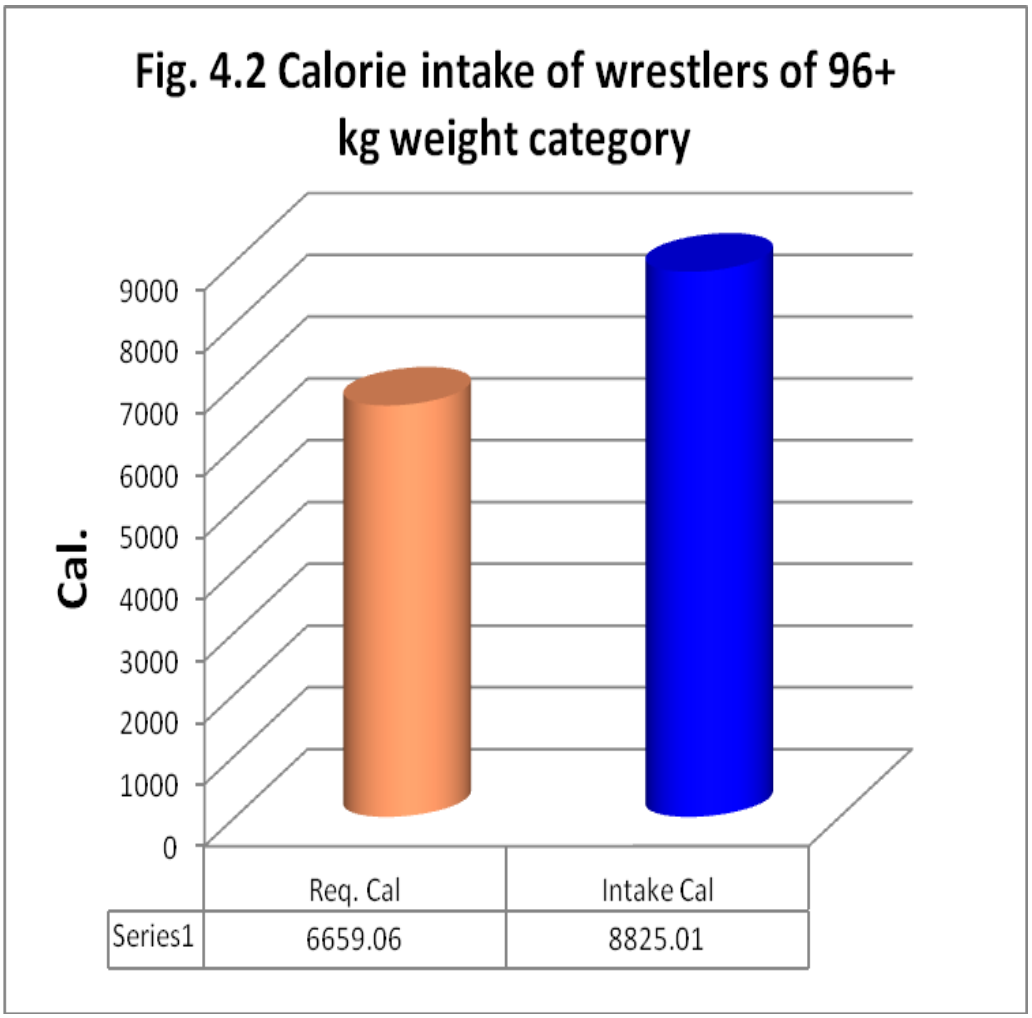
Fig. 4.2 Calorie intake of wrestlers of 96+ kg weight category
Cal.
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Req. Cal
Intake Cal
Series1
6659.06
8825.01

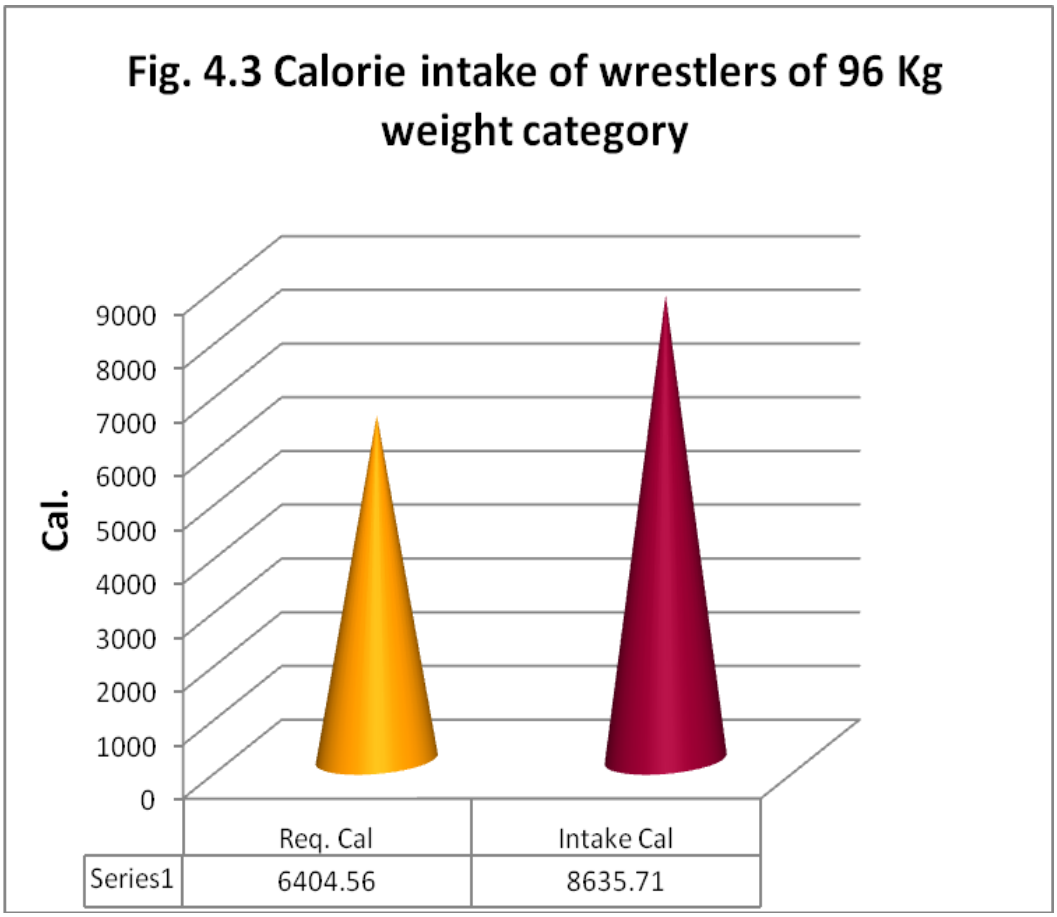
Fig. 4.3 Calorie intake of wrestlers of 96 Kg weight category
Cal.
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Req. Cal
Intake Cal
Series1
6404.56
8635.71

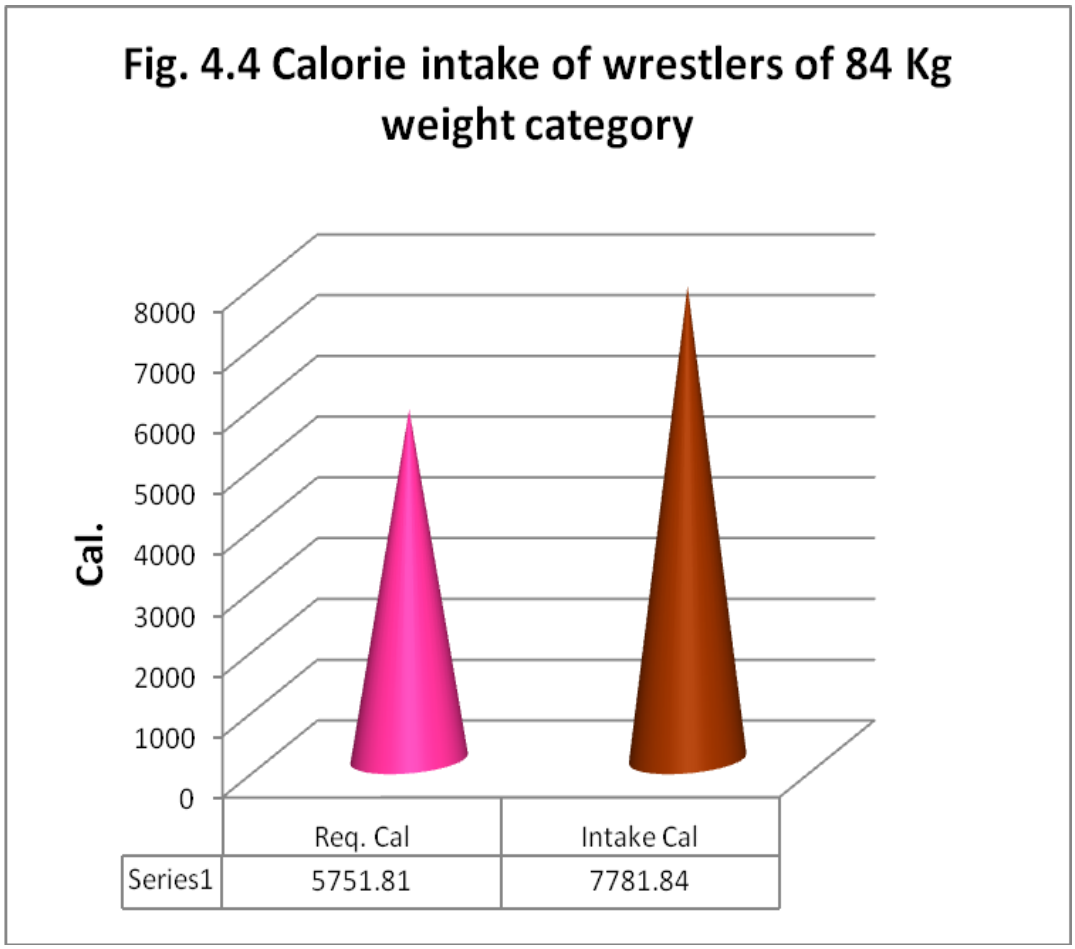
Fig. 4.4 Calorie intake of wrestlers of 84 Kg weight category
Cal.
8000
7000
6000
5000
4000
3000
2000
1000
0
Req. Cal
Intake Cal
Series1
5751.81
7781.84

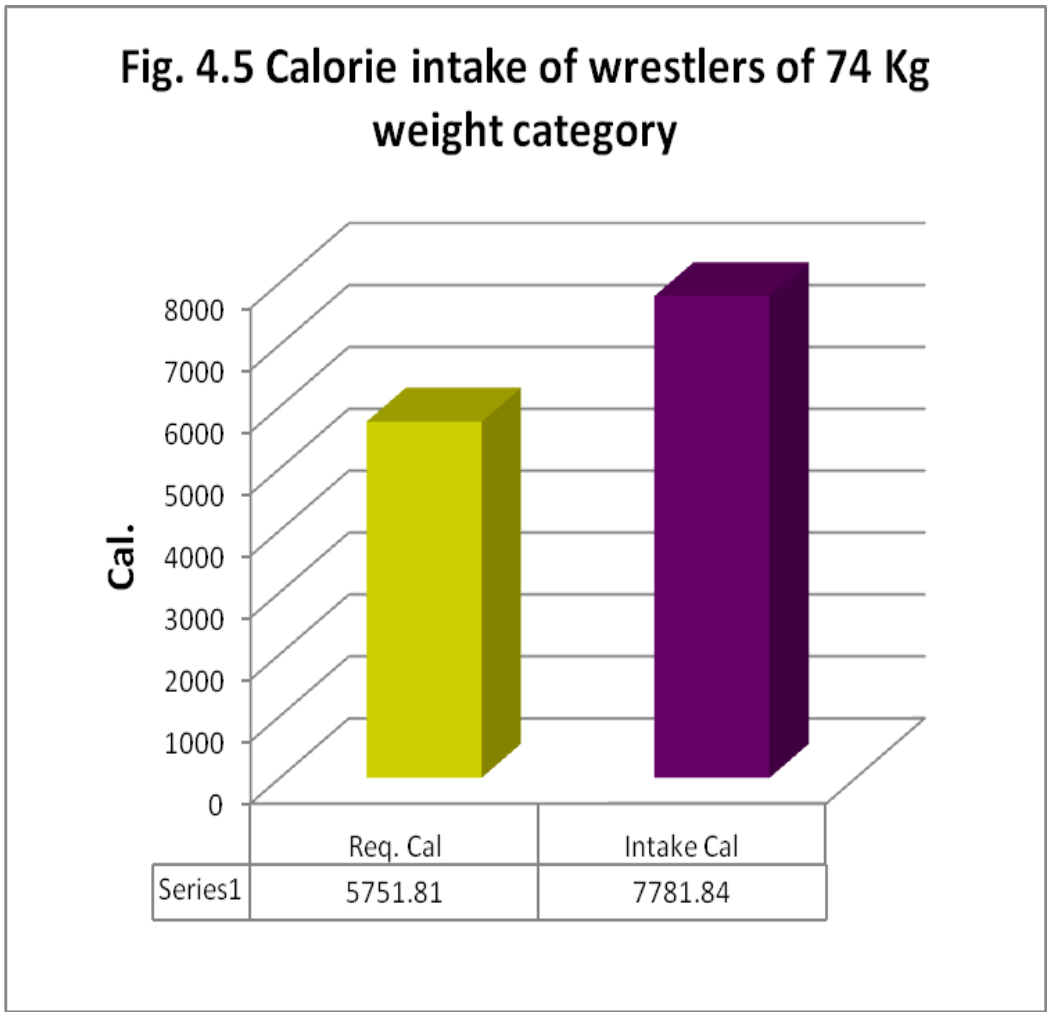
Fig. 4.5 Calorie intake of wrestlers of 74 Kg weight category
Cal.
8000
7000
6000
5000
4000
3000
2000
1000
0
Req. Cal
Intake Cal
Series1
5751.81
7781.84

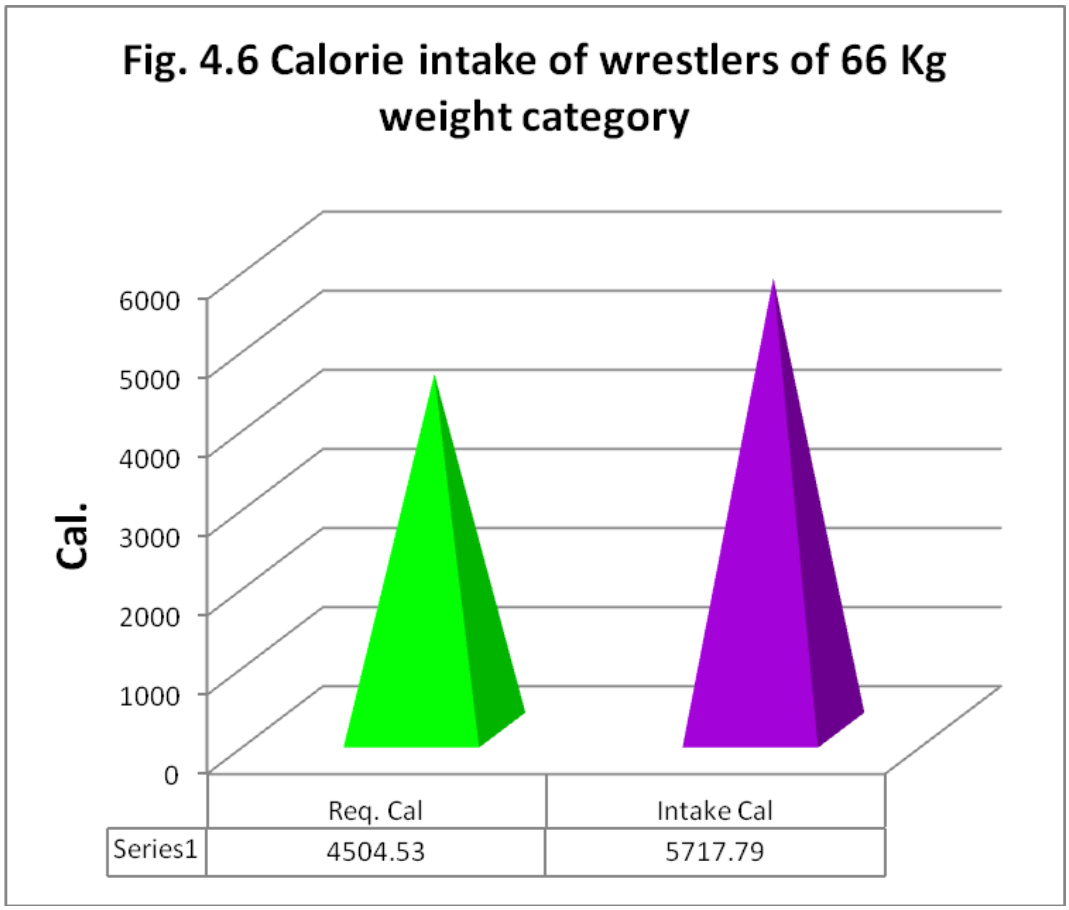
Fig. 4.6 Calorie intake of wrestlers of 66 Kg weight category
Cal.
6000
5000
4000
3000
2000
1000
0
Req. Cal
Intake Cal
Series1
4504.53
5717.79

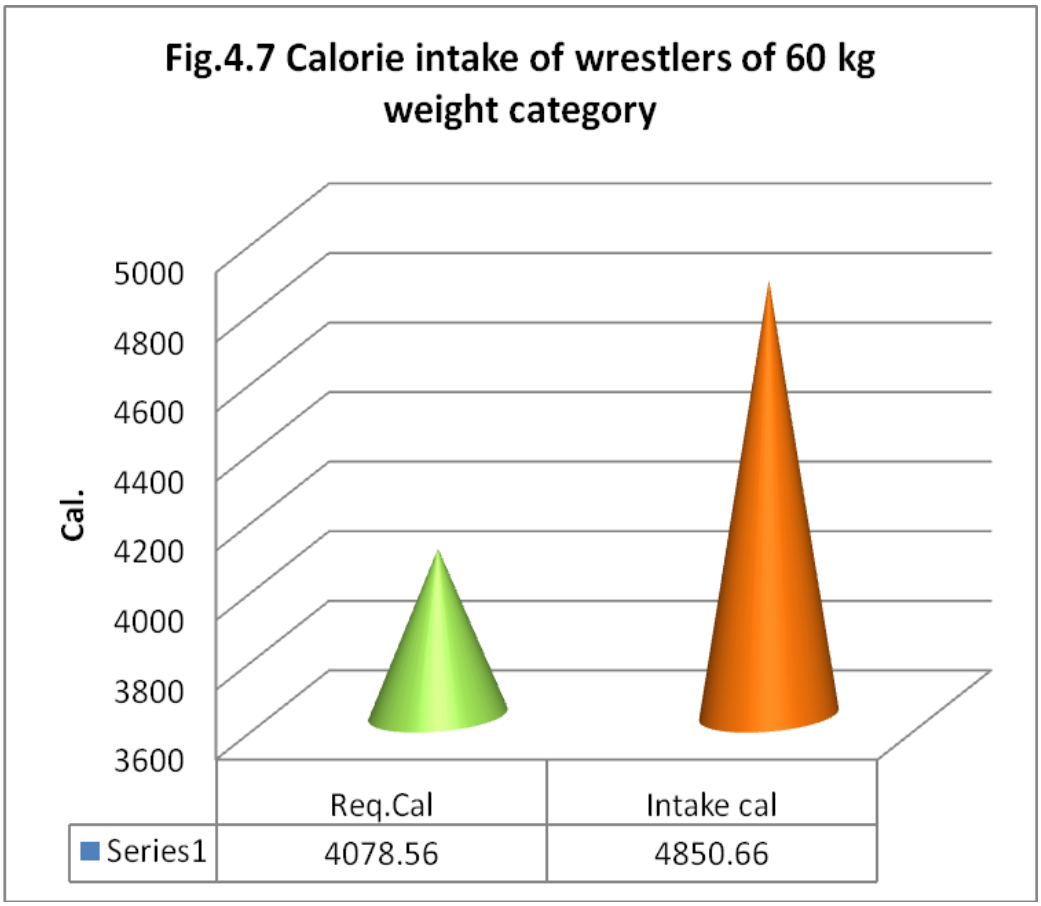
Fig.4.7 Calorie intake of wrestlers of 60 kg weight category
Cal.
5000
4800
4600
4400
4200
4000
3800
3600
Req.Cal
Intake cal
Series1
4078.56
4850.66

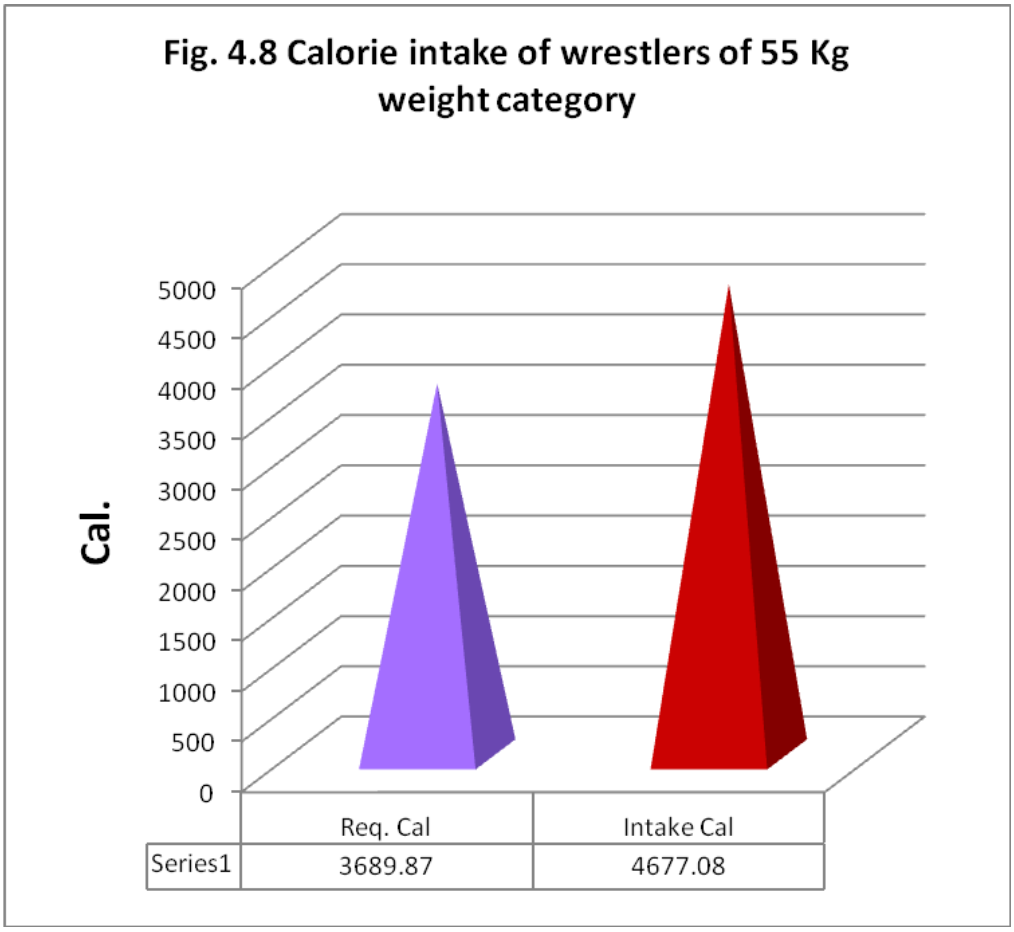
Fig. 4.8 Calorie intake of wrestlers of 55 Kg weight category
Cal.
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Req. Cal
Intake Cal
Series1
3689.87
4677.08

4.3 Discussion

Wrestling is one of the most physically demanding body contact sports. Therefore, proper nutrition is paramount aspect to exhibit top performance in wrestling. Hence, coaches strongly advocate a balanced diet of nutritious foods for the wrestlers participating in a top level of competitions.

The quality of one's diet has a direct effect on behavior of wrestlers either in the practice room or in the classroom. Moreover, its effect is also seen during performance in a top level wrestling competition.

It is already known that a proper diet contains a right proportion of each of the three macronutrients: carbohydrates, protein, and fats. In fact, along with nutrition, wrestlers should ideally adhere to a diet that gets 50 percent of its calories from carbohydrates, 25-30 percent from protein, and 20-25 percent from fat. Although fat and proteins get their own value in the diet of wrestlers, the role of carbohydrates is the most important, since it provides maximum energy needed for exhaustive physical activity in wrestling.

As the culture of wrestling in Maharashtra is very rich, it seems the wrestlers of this state might be having proper knowledge of nutrition and its practices. However, the result of the present study indicates an opposite result. The result, in fact, revealed that about 72.83% of the wrestlers in Maharashtra had low level

of knowledge on nutrition and practices. It suggests that the wrestlers in Maharashtra need to attend nutrition course, which might help them improve the knowledge of nutrition. Thus, the need of nutritional knowledge among the selected wrestlers has also been emphasized by two other investigators (Rash *et al*., 2008; Rosenbloom *et al*., 2002)[1,2]. Some of the earlier studies also demonstrated that athletes who had completed a nutrition course in college scored higher on nutritional knowledge tests than those who had not (Barr, 1987; Zawila *et al*., 2003)[3,4]. This in fact suggests that there is a need to organize a need-based nutrition course especially for the wrestlers in Maharashtra, which might help to enhance the performance of the wrestlers. Thus, the null hypothesis ***"HO_1: Nutritional knowledge and practices among the wrestlers in Maharashtra may not be proper as per the requirement" as formulated in this study has been retained.***

The result of this study indicates that calorie intake of the wrestlers of different weight categories is different. Appearance of such result may be due to the fact that requirement calorie for work bout differs from individual to individual.

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[1] C. L. Rash, B. M. Malinauskas, M. W. Duffrin, K. Barber-Heidal, and R. F. Overton, "Nutrition-related knowledge, attitude, and dietary intake of college track athletes." The Sport Journal, 11, 1, 2008, pp.48–55.

[2] C. A. Rosenbloom, S. S. Jonnalagadda, and R. Skinner, "Nutrition knowledge of collegiate athletes in a Division I National Collegiate Athletic Association institution." Journal of the American Dietetic Association, 102, 3, 2002, pp.418–420.

[3] S. I. Barr, "Nutrition knowledge of female varsity athletes and university students." Journal of the American Dietetic Association, 87, 1987, pp.1660–1664.

[4] L. G. Zawila, C. M. Steib, and B. Hoogenboom, "The female collegiate cross-country runner: Nutritional knowledge and attitudes." Journal of Athletic Training, 38, 1, 2003, pp.67–74.

Thus, the null hypothesis – ***"HO_2: There will be no difference in nutritional status of the wrestlers of different weight categories" has been sustained***.

The result of the present study also infers that due to improper knowledge on nutrition, the Wrestlers of Maharashtra consume diet with excessive Calorie than actual requirement, which might have attributed to add more body fat among the wrestlers in Maharashtra. Appearance of such result seems to be logical and justified because previous studies on dietary assessment conducted in numerous countries (Alexy *et al*., 2002)[5], Spain (Serra-Majem *et al*., 2001)[6] have reported that generally people have a tendency to consume low dietary fiber (Nicklas, 1995)[7] and medium carbohydrate (Alexy *et al.,* 2002), and high fat (Troiano, 2000)[8] as well as protein (Decarli *et al*., 2000)[9] in their diet. These studies on adolescent males have also reported high intakes of fat and low intakes of vitamin. Although, these studies are conducted on common population nevertheless are consistent with the results as appeared in present study. Thus, the null

[5] U. Alexy, W. Sichert-Hellert, and M. Kersting, "Fifteen-year time trends in energy and macronutrient intake in German children and adolescents: results of the DONALD study." Br J Nutr, 87, 2002, pp.595–604.

[6] L. Serra-Majem, L. Ribas, J. Ngo, J. Aranceta, M. Garaulet, E. Carazo, J. Mataix, C. Perez-Rodrigo, M. Quemada, R. Tojo, and C. Vazquez, "Risk of inadequate intakes of vitamin A, B_1, B_6, C, E, folate, iron and calcium in the Spanish population aged 4 to 18." Internat J Vit and Nutr Res, 71, 2001, 325–331.

[7] T. A. Nicklas, L. Myers, and G. S. Berenson, "Dietary fibre intake of children: the Bogalusa heart study." Pediatrics, 96, pp.988–994.

[8] R. P. Troiano, R. R. Breifel, M. D. Carroll, and K. Bialostosky, "Energy and fat intakes of children and adolescents in the United States: data from the national health and nutrition examination surveys." Am J Clin Nutr, 72, 2000, S1343 –S1353.

[9] B. Decarli, C. Cavadini, J. Grin, A. Blondel-Lubrano, F. Narring, and P. Michaud, "Food and nutrient intakes in a group of 11 to 16 year old Swiss teenagers." Internat J Vit Nutr Res, 70, 2000, pp.139–147.

hypothesis – ***"HO_3: Caloric value of present diet of wrestlers in the State may not be proper as per the requirement"*** as formulated in this piece of research has been retained.

To summarize, the result revealed that the wrestlers of different weight categories did not differ in knowledge of nutrition. Majority of them had below-average level of knowledge on nutrition and practices too. Such poor knowledge on nutrition might create an imbalance status of calorie requirement and actual calorie intake. They result also supports that the wrestlers showed excessive high calorie intake than the actual requirement. In fact, the present study provides valuable information regarding present status of wrestlers in Maharashtra regarding their knowledge of nutrition. The results of this study, although from a relatively small sample of wrestlers, provide a basis for rationalizing more in-depth research into their eating habits.