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Effect of Nutrition Education on Knowledge, Attitude and Practices of Sports Person with Special Reference to Zinc

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Abstract:

Nutrition plays a very important role in attaining high levels of achievements in sports. Satisfactory nutrition knowledge becomes important to the practice of healthy nutrition habits and, consequently, more efficient to performance. Zinc plays a role in growth, building and repair of muscle tissue, energy production and immune status. Zinc status has been shown to directly affect thyroid hormone levels, basal metabolic rate, and protein use, which in turn can negatively affect health and physical performance. Methods -Ethical clearance was obtained from the Human Ethics Committee of PSG Institute of Medical Sciences. One hundred athletes performing various field and track events were selected (n=100) for KAP. An interview schedule was framed to conduct the study concerned with various aspects of food and nutrition by direct interview method by the investigator. Nutrition education was provided and the impact of nutrition education was found using the KAP questionnaire. Results - It was seen that the knowledge of sports person was quite low before nutrition education and had improved considerably after nutrition education as is evident.

Keywords: Athletes, attitude, knowledge, practice, zinc

1. Introduction

Nutrition affects a sportsman in many ways. At the basic level, it plays an important role in achieving and maintaining health. Optimal nutrition can reduce fatigue, allowing an athlete to train and compete longer or recover faster between training sessions (Lin and Lee, 2005).

Nutrition plays a very important role in attaining a high level of achievements in sports. Adequate nutrition helps to improve performance, but also to promote healthy dietary practices in the long term (Nazni et al., 2010). As a runner, diet is important not only for maintaining good health, but also to promote peak performance. Zinc is an intracellular cation, which has catalytic and structural functions. This element is involved in the structure of many metabolic enzymes, which are needed for natural digestion and maintenance of normal hormonal levels. Zinc status has been shown to directly affect thyroid hormone levels, BMR, and protein use, which in turn can negatively affect health and physical performance (Volpe, 2006). The study was taken up to find out the impact of nutrition education on the KAP of the sports persons with special reference to zinc.

2. Materials and Methods

Ethical clearance was obtained from the Human Ethics Committee. Prospective interventional and observational design was adopted in this study. One hundred sports persons were selected by purposive, judgment and convenience sampling techniques in Coimbatore. Knowledge refers to their understanding of the topic, attitude refers to their feelings towards the particular subject, as well as any preconceived ideas they may have towards it and practice refers to the ways in which they demonstrate their knowledge and attitude through their actions.

A KAP schedule was formed with 10 questions each for knowledge, attitude and practice. Multiple choice questions were included for knowledge, while attitude a five level likes of scale was used to analyze and for practice, closed questions were given to evoke Yes/No response KAP was carried out in the playground of college campuses of Coimbatore. These have a well designed and well equipped physical education department with spacious playgrounds. As suggested by Echman and Walker (2008), KAP was conducted twice, both pre and post intervention, in order to measure the impact. The KAP schedule was validated and used for data collection. The

validated KAP questionnaire was distributed to all the hundred sports persons, at the beginning of the study and explained about the questions included. Wherever necessary the questions were translated to a vernacular language. The investigator patiently administered the questionnaire and collected them after their completion. Nutrition Education was imparted to the sports persons in a classroom setting. Skit was enacted in the playground.

After giving a time gap of one week, the same questionnaires was distributed to the sports persons once again for finding out the impact of nutrition education. The time taken for filling up the questions at the pre-test session was more (nearly half an hour) while it took only 15 minutes to fill up the questionnaire in the post-test sessions and consolidated using . The collected data was entered in Excel format, consolidated and analyzed statistically.

3. Results

3.1. Knowledge of Athletes before and after Nutrition Education

Variable	Mean Score	SD	"t" value
Knowledge	Initial	46.9	18.87035
	Final	54.9	13.35253

Table 1: 't' Values Obtained for Knowledge

Note- 5% level of significance

NS – Not Significant

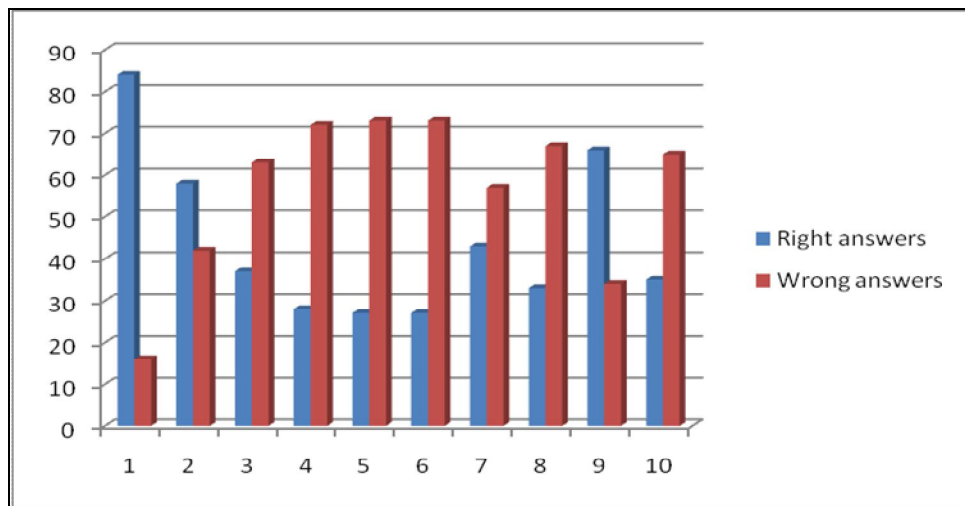


Figure 1: Pre test scores of Knowledge

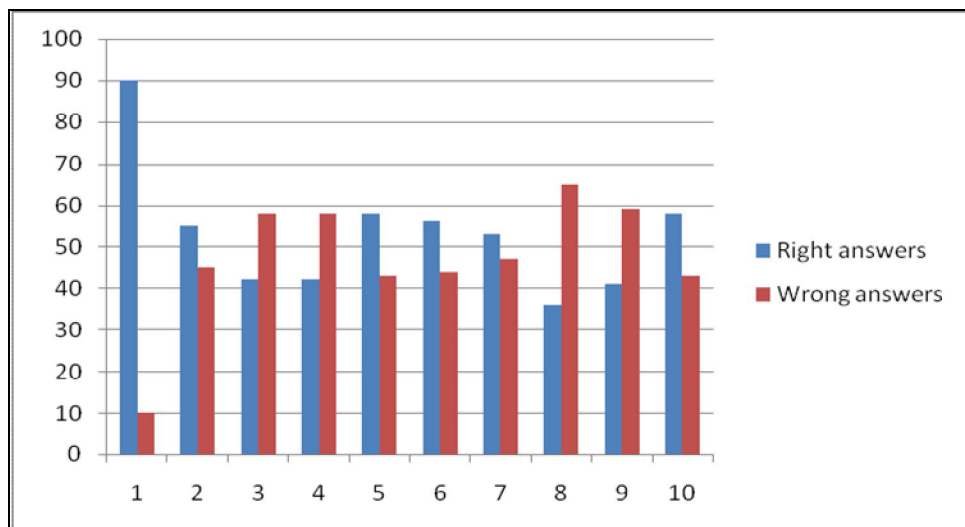


Figure 2: Post test scores of Knowledge

The results indicate that the knowledge of the selected sports person was quite low before nutrition education. 84% of the athletes had better knowledge regarding the importance of sports nutrition to attain peak performance, 58% of the athletes were aware of protein that helps in body building. Only 37% of the athletes knows the role of carbohydrate in their diet, only 28% responded well for the sources of zinc, 27 % of the athletes have knowledge about the role of zinc in immune responses and the nutrients which provide antioxidant, this indicates that the athletes were consuming foods that were available to them and had no knowledge as which food helps in their physical activity and performance. However, the athletes had poor knowledge on zinc based questions. Regarding the muscle fat ratio, 33 % of athletes had knowledge and 35% of athletes were aware of role of zinc in the body (Figure I). After nutrition education, there was mere difference in the scores obtained (Figure-II).The mean score obtained for all the questions had improved after nutrition education, but not statistically significant (Table-1).

3.2. Attitude of Athletes before and after Nutrition Education

Questions	Strongly Agree		Agree		Undecided		Disagree		Strongly disagree	
	Pre Test	Post Test	Pre Test	Post Test	Pre Test	Post Test	Pre Test	Post Test	Pre Test	Post Test
Athletes require more nutrition than the normal population	81	72	17	24	1	3	0	1	1	0
Balanced diet is equally important as skill, training and motivation	59	52	36	40	5	4	0	1	0	0
It is necessary to consume commercially available food for peak performance	27	25	47	47	22	22	4	5	0	1
The food choice of athletes is influenced by the coaches	35	28	49	58	13	11	3	3	0	0
Peers and role models in sports influence the food choice and consumption	25	20	25	53	39	24	9	3	1	0
Consumption of iron and zinc rich foods is necessary for good consumption	28	27	55	52	13	17	2	3	1	1
It is necessary to add zinc rich foods to the diet	19	23	43	51	23	20	14	5	1	0
Consumption of wheat germ, red meat and seafood, nuts and oilseeds and cocoa increases zinc in the diet	24	44	43	37	29	13	3	3	0	2
Intake of zinc rich foods helps to improve muscle power	21	34	45	41	29	17	3	7	0	0
Consumption of zinc supplements is vital to win in sports	25	28	46	52	20	17	7	2	0	0

Table 2: Pre and Post Test Scores of Attitude

Variables	Strongly agree		Agree		Undecided		Disagree		Strongly disagree	
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Mean	34.4	35.3	40.6	45.5	19.4	14.8	4.5	3.6	0.4	0.4
SD	18.9060	15.3951	10.9563	9.5629	11.0290	6.7201	4.1291	1.6248	0.4898	0.6633
t -value	0.11 NS		0.468 NS		0.641 NS		0.483 NS		0 NS	

Table 3: 't' Values Obtained for Attitude

Table-2 and 3 explains the attitude score of athletes before and after nutrition education. The overall attitude of the athletes was quite poor before nutrition education. On analyzing the questions pertaining to attitude, it is seen that there was an increase in the understanding power of the athletes about nutrition for sports. Here again for question number 1,3,4,5 and 6, there was a lack of understanding as his evident from a reduction in the expected right answers. For question numbers 3 and 10, in which "strongly agree" was expected right answer, the athletes probably did not know how to answer this question. The mean value of the attitude shows that there is improvement in the athletes after the nutrition education, but not statistically significant.(Table-3).

3.3. Practice of Athletes before and after Nutrition Education

Question no	Pre Test		Post Test	
	Yes	No	Yes	No
1	59	40	88	12
2	46	53	66	34
3	69	30	66	34
4	67	32	65	35
5	58	42	60	70
6	62	36	67	33
7	61	39	72	28
8	55	44	65	35
9	72	27	77	23
10	65	34	78	22

Table 4: Pre and Post Test Scores of Practice

Variable	Mean Score	SD	"t" value
Knowledge	Initial	57.5	11.95594
	Final	61.2	19.82591

Table 5: t' Values Obtained for Practice

Note: 5% level of significance

NS- Not Significant

Regarding the results pertaining to the improvement in the nutrition practices, it was seen that a considerably large number of the selected sports persons had given the right answers after nutrition education (however, there was a slight reduction from 69 to 66 for question number 3, and from 67 to 65 for question number 4.(Table-4).

The results of Moss (2013) on nutrition knowledge assessment of female volleyball players indicate that the average correct number of answers was 55.2%.

Werblow *et al.* (1978) reports nutrition knowledge and attitude were positively correlated ($r = 0.45$; $p < 0.001$). Their results indicated athletes who had received nutrition education in high school or college had significantly higher knowledge ($p < 0.001$) and attitude ($p < 0.001$) scores than those who had not. Results of this study indicated a positive relationship between nutrition knowledge and attitudes, with higher knowledge and attitude scores associated with the athletes having had more nutrition education.

Hornstorm *et al.* (2011) in their study on KAP of softball players showed that the nutrition knowledge of the athletes was quite low.

A well chosen diet offers several benefits to athletes. It helps them to achieve and maintain an ideal body weight and physique, enhance recovery between workout and events, reduced risk of injury and illness and consistency in achieving high level performance. Despite these advantages, most athletes do not meet their nutritional goals. This is because of poor knowledge of foods and drinks for sports, poor choices of food, outdated knowledge of sports nutrition, indiscriminate use of supplements, and lack of time to obtain the appropriate foods and frequent travel (IAAF athletes, 2007).

4. Discussion

The results show that the methods used for nutrition education have made a positive impact on the KAP of the selected sports persons due to the following reasons like the power point presentation has been able to present an over view of the importance of nutrition for sports with relevant pictures and animations, reinforced with vivid explanation, the pamphlet and booklet are a comprehensive resource on sports nutrition which provides all the nutrition information and nutrient requirements for optimum sports activity with sample menus which the athletes can choose depending upon their activity level. The information in this booklet has been designed to provide sports person with food choices and acts as a ready reckoners for the various meals. It is not enough to have physical training alone and ignore the benefits of good nutrition for sports. It is well known that there is no magic diet or food; however, there are several ways by which proper choices of food and drink can result in high level of performance to achieve their goals. The skit taught the athletes important lessons about what, when and how much to eat in a very hilarious manner. It helped them to understand what to eat and what not to eat. It also helps them to realize that junk food cannot be the center of the diet. The skit helped them to improve their nutrition knowledge and the importance of sports nutritionist for excelling in their field.

On the other side, the skit also helped the actors to understand the nuances of acting, improve their vocabulary and dialogue delivery, team spirit, communication and social skills, while also enabling them to be a part of a fun and creative experiences. On the whole it can be said that nutrition education of the athletes has helped in improving their KAP. This also confirms that nutrition education given by nutrition experts who have a sound knowledge of the physiology, food choice, nutrition, biochemical aspects, and physical strength and sports activities is of great value to improve the nutritional status of sports persons.

Statistical analysis (Tables 1, 3 and 5) showed that no significant difference in the KAP before and after nutrition education. Had the nutrition education been given for an extended period of time and the sports persons responded reciprocally, the results would have been significant.

5. Conclusion

This study concludes that prolonged nutrition education will imbibe the knowledge thereby will increase athletes attitude towards the importance of nutrition in their day to day life and also help them to practice the proper nutritional intake of foods. Thorough knowledge of how to eat food before, during and after the competition will help the athletes to improve their performance and achieve their goal. Its imperial for the sports nutritionist to take up such studies further to inculcate the good eating habits among the athletes.

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