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COMPARISON OF SPORTS NUTRITIONAL KNOWLEDGE AND DIETARY RECOMMENDATIONS OF SCHOOL AND COLLEGE COACHES

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Abstract:-Optimal nutrition is essential for athletes. Coaches could influence dietary habits of athletes,since they are important figures in the athlete's lives. The objectives of this study were to measure and compare sports nutritional knowledge of school and college coaches and to evaluate the dietary recommendations by these coaches to their athletes. In the present investigation a total sample of 70 coaches were taken with equal number of coaches training school and college athletes.. A 5-section questionnaire was developed to obtain data on demographic characteristics, weight management practices, dietary and fluid recommendations before, during and after training, knowledge on female athlete triad and sports nutrition. The results of the present study showed that 68.5% of the coaches recommended weight management practices. It was suggested by 63% of school coaches and 40% college coaches to include and avoid special foods before, during and after training. The knowledge on female athlete triad did not show association with the level of coaching (school and college) and gender. Results on total knowledge score on sports nutrition revealed that 26 per cent of the college coaches had very good knowledge (>75 %) compared to school coaches (17%).No significant relationship between knowledge on sports nutrition domains and level of coaching was found. It was identified that the years of coaching experience, type of sports training, formal nutrition training they had attended did not influence the sports nutritional knowledge of both school and college coaches. The study findings indicates a need for periodical workshop and educational programmes to provide the coaches with required sports nutrition knowledge, skills and motivation in order to educate the athletes.

Keywords:Sports Nutritional , Dietary Recommendations , present investigation .

INTRODUCTION:-

Nutrition plays an enormous role in sports performance. When everything else is equal, nutrition can make the difference between winning and losing(1). Given academic, financial, psychosocial, and sport performance stressors, optimizing nutrition might be challenging in the school and collegiate environment. Demands of performance and training place athletes at greater risk for musculoskeletal injury, psychological problems, medical complications, and suboptimal energy availability (2).

Proper training and optimal energy availability are essential to maximize both health and performance; however access to nutrition resources might be limited for athletes. Athletes must have appropriate nutrition knowledge and easily accessible resources for nutrition guidance (3). They often site coaches as a major source of information and the other sources are peers, electronic and print media. Compare with parents, it has been found that trainers had more influence on the attitudes, subjective norms, and intentions of adolescents regarding supplement use (4). Many coaches may not be adequately trained in nutrition to impart scientifically sound information or to recognize nutrition misinformation. Despite this they often prescribe meals, diet regimes, supplements and often expect weight gain / loss from their athletes. Little information is available about sports nutrition knowledge and the resources for nutrition information among coaches and athletes (5).

Greater participation of women in sports has increased competition among female athletes. The desire to succeed in athletics, combined with the pressure to maintain a lean appearance may cause female athletes to intentionally or inadvertently

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restrict their dietary intake and train excessively. Coaches play an important role in the prevention of the female athlete triad. They have the ability to positively impact the female athlete by educating and encouraging them to adopt healthy patterns of behavior (6).

PURPOSE OF THE STUDY

Coaches play an important role in suggesting good nutritional practice to athletes not only for training but also for preparing them nutritionally sound during the competition. They also have due responsibility to provide fluid guidelines, to prevent female athlete triad among athletes thereby to enhance performance and recovery. But their current knowledge level, perceptions, and practice behaviors are not known. Few researchers (8, 9) have examined nutrition knowledge of college coaches and high school coaches. As far as the investigator's knowledge goes, only few researches have been conducted to compare the sports nutrition knowledge of school and college coaches. Therefore, the investigator conducted a study to compare the sports nutritional knowledge and dietary recommendations by coaches of school and college athletes.

Objectives:

1. To study the recommendations (weight management, dietary and fluid) given to athletes by the coaches
2. To assess the knowledge on Female athlete triad among the school and college coaches based on level of coaching and gender.
3. To evaluate the sports nutritional knowledge of school and college coaches.
4. To compare the sports nutritional knowledge of school and college coaches based on coaching experience, type of sports and formal nutrition training.

METHODOLOGY

Seventy subjects were selected from the sports camp held at Anna university, SDAT swimming camp and athletic meet, intercollegiate sports meet at JBAS college for women of Chennai city. The purposive sampling method was applied to select 35 school coaches and 35 college coaches for this study.

Tools Used:

A self developed 5 section questionnaire was used to elicit information on demographic characteristics, weight management suggestions, special foods to be included/ avoided , fluid recommendations before, during and after training, travel foods, female athlete triad and sports nutrition knowledge. The sports nutrition knowledge questionnaire consisted of 20 questions with true, false and unsure answers. To assess adequate nutrition knowledge, questions were categorized into 5 domains of sports nutrition: macronutrients (carbohydrates, fat and protein) and micronutrients (vitamins and minerals), competition nutrition (pre, during and after training) supplements and performance, fluids and effect of dehydration. To find the reliability of the questionnaire, internal consistency coefficient was calculated and the Kuder Richardson value was found to be 0.78.

Procedure:

Questionnaires were distributed to the selected coaches. The purpose of the study was explained and directions to fill the questionnaire were given. After completion, the questionnaires were collected, data compiled and statistically analyzed.

RESULTS AND DISCUSSION

The results were discussed with respect to their percentage, mean score, standard deviation and t' test.

1.Demographic details of the coaches:

Table – 1 presents the demographic details of the school and college coaches

Table – 1
Demographic details of coaches

Demographic Details	Particulars	School coaches		College coaches		Overall (n=70)	Overall %
		N	%	N	%		
Age (Years)	Less than 30	9	25.7	8	22.9	17	24.3
	30- 40	14	40	17	48.6	31	44.3
	Above 40	12	34.3	10	28.6	22	31.4
Gender	Male	29	82.9	25	71.4	54	77.1
	Female	6	17.1	10	28.6	16	22.9
Sports coaching	Individual sports	19	54.3	4	11.4	23	32.9
	Team Sports	16	45.7	31	88.6	47	67.1
Years of coaching	Less than 10 years	24	68.6	18	51.4	42	60
	More than 10 years	11	31.4	17	48.6	28	40
Formal nutrition training attended	Yes	8	22.9	17	48.6	25	35.7
	No	27	77.1	18	51.4	45	64.3

The above table shows that, majority of the school coaches (40%) and college coaches (49%) were in the age group of 30 – 40 years. Maximum numbers of the participants were males (77%) and only 23% were females. About 54.3% of school coaches train individual sports like athletics, tennis, swimming, table tennis and gymnastics, where 88.6% of college coaches train team sports such as kabadi, kho-kho, volleyball, basketball and cricket. 49% of college coaches found to had more than 10 years of coaching experience than school coaches (31.4%). The results obtained in this study that 77% of school coaches and 51% of college coaches had not attended formal nutrition training were similar to that of Baer et al, 1994.

2. Recommendations Prescribed to athletes by school and college coaches

The various recommendations prescribed to the athletes on weight management, special foods and fluids to be included and avoided before, during and after training by the coaches is indicated in the following table.

Table -2
Recommendations to athletes by school and college coaches

S.No	Particulars	Recommendations Prescribed						
		Yes		No		Sometimes		
		N	%	N	%	N	%	
1	Weight management practices	School	15	42.8	12	34.3	8	22.9
		College	9	25.7	19	54.2	7	20
2	Special foods for competition	School	22	62.9	8	22.9	5	14.3
		College	14	40	17	48.6	4	11.4
3	Fluid	School	27	77.1	2	5.7	6	17.1
		College	11	31.4	16	45.7	8	22.

a) Weight management practices:

General weight management practices were recommended by 68.5% of coaches, among them majority were school coaches (42.8%), compared to college coaches (25.7). Majority of the coaches (80%) suggested the athletes to follow proper diet and exercise as safe weight management practices (Table -2).

b) Special foods for competition:

As shown in Table – 2, School coaches (63%), recommend their players to consume special foods like egg, fruits, nuts, and sprouts before training and fruit juice during training compared to college coaches (40%). No specific foods recommended after practice. But prior to competition, athletes were advised to avoid fried foods and coffee/tea. Invariably of level of coaching, the coaches of athletics, swimming and tennis recommend their players to take supplements, with no proper specification on brand, timing and quantity to be consumed. About 74.3% of them suggest the players to carry home cooked foods during travel of short duration.

c) Fluid recommendations:

Table – 2 reveals that maximum number of school coaches (77.1%) insisted the athletes to drink adequate fluids during practice than college coaches (31.4%). The common fluids recommended were plain water and fruit juice during regular practice and glucose water during competition. None of them recommend sports drinks, which showed the lack of awareness on sports drinks.

3.Knowledge on female athlete triad of coaches

Table -3 presents the knowledge on female athlete triad of coaches based on level of coaching (school and college) and gender

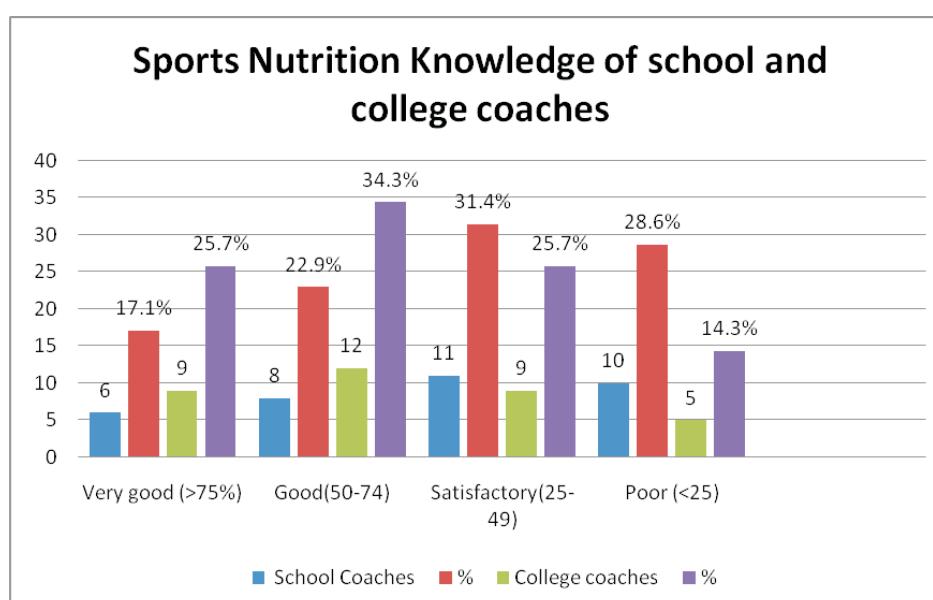
Table – 3
Knowledge on female athlete triad of coaches based on level of coaching and gender

S.No	Particulars		N	Mean	SD	't' value	Level of significance
1	Level of coaching	School	35	13.17	2.823	0.594	NS
		College	35	14.91	17.09		
2	Gender	Male	54	1.018	0.812	0.683	NS
		Female	16	1.25	1.064		

Table – 3 reveals that there is no significant difference between the coaches at different level(school and college) and gender in the knowledge about female athlete triad, as the calculated 't' (0.594, 0.683) is less than the tabulated 't' (1.98) at 5% level of significance. College coaches were aware of female athlete triad compared to school coaches, but they were not able to identify all the components of FAT (6).

4.Sports nutrition knowledge of coaches:

Figure -1 shows the percentage of total sports nutrition knowledge score of school and college coaches .



The nutrition knowledge test evaluated the 5 various components of sports nutrition viz macronutrients, micronutrients, competition nutrition, fluids and supplements. Overall, participants had just below-average nutrition knowledge in all domains. The college coaches had slightly higher nutrition scores (25.7%), suggesting that they have better nutrition knowledge to disseminate appropriate information to athletes, than school coaches (17%). Data showed that 28.6% of school coaches had lesser nutrition knowledge (Fig – 1).The result is supported by Toni et al.,2012.

6.Knowledge of coaches on sports nutrition domains

The following table presents the Knowledge of coaches on sports nutrition domains

Table – 4
Knowledge of coaches on sports nutrition domains

S.No	Sports nutrition aspects	Sample	N	Mean	Standard Deviation	't' value	Level of significance
1.	Macronutrients	School coaches	35	2.97	1.524	4.402	0.01
		College coaches	35	4.37	1.190		
2.	Micronutrients	School coaches	35	1.685	0.993	1.008	NS
		College coaches	35	1.942	0.186		
3.	Performance Nutrition	School coaches	35	3.0	1.371	0.376	NS
		College Coaches	35	3.17	1.543		
4.	Fluids	School coaches	35	1.542	0.741	2.610	0.01
		College Coaches	35	2.0	0.727		
5.	Supplements	School coaches	35	1.057	0.683	1.251	NS
		College Coaches	35	1.257	0.657		
6.	Total Knowledge Score	School coaches	35	13.17	2.823	0.594	NS
		College Coaches	35	14.91	2.709		

NS – Not Significant

Table – 4 reveals no significant difference between school and college coaches on aspects such as micronutrients, competition nutrition and supplements as the calculated 't' value (1.008, 0.376, 1.251) is less than the table value 1.98. A significant relationship was found in macronutrients and fluids as the calculated 't'(4.402 and 2.610) is greater than the table value 2.56 at 1% level of significance. Both coaches of school and college had lower nutrition scores, This corresponds with the findings of Zinn et al.,2006.

7. Comparison of sports nutrition knowledge between school and college coaches

Table -5 illustrates the sports nutrition knowledge of coaches based on experience, type of sport and formal nutrition training.

Table – 5
Comparison of sports nutrition knowledge between school and college coaches

Particulars		Coaches	N	Mean	SD	't' value	Level of significance
Coaching experience	<10 years	School	24	11.833	3.089	0.518	NS
		College	18	11.39	2.407		
	> 10 years	School	11	14.727	2.054	0.248	NS
		College	17	14.41	2.501		
Type of Sports coaching	Individual Sports	School	19	14.0	2.027	0.020	NS
		College	4	12.5	1.29		
	Team sports	School	16	12.06	1.913	0.0267	NS
		College	31	13.16	1.485		
Nutrition Course attended	Yes	School	8	15.0	1.069	0.116	NS
		College	18	15.056	1.392		
	No	School	27	11.519	1.672	0.437	NS
		College	17	11.29	1.723		

NS - Not Significant

0.01 – Significant at 1% level of Significance

It is evident from Table-5 that there were no significant difference between school and college coaches on nutrition knowledge based on years of coaching experience, type of sports they coach and formal nutrition training. The findings regarding the overall nutrition knowledge of coaches are similar to those of previous investigations 6, 10., 11 Possible reasons for lower knowledge scores could include not interested to enhance their nutrition knowledge. It indicates a need for periodical theoretical, technical and applied nutrition education and workshops for the coaches.

CONCLUSION

Athletes often rely on coaches for peak performance, therefore proper nutrition knowledge among the coaches is highly essential. On the basis of finding and within the limitation of present study the following conclusions are drawn: There was no significant difference in knowledge on female athlete triad of coaches based on level of coaching and gender. The total sports nutrition knowledge score of college coaches was better than school coaches. The recommendations regarding weight management, diet and fluid guide before, during and after practice were highly done by school coaches despite low knowledge scores than college coaches. There was no significant difference in knowledge on sports nutrition domains except micronutrients and fluids. There was no significant difference in sports nutrition knowledge among the coaches based on experience, type of sports training and formal nutrition course attended.

If India aims to excel in the arena of global sports, the coaches need to equip themselves with all round knowledge of sports nutrition and interpersonal skills along with technical expertise. Hence to improve nutritional knowledge, skills, attitudes and practice of coaches, continuous sports nutrition education programmes should be provided periodically, so that they can educate their athletes and enhance the health and performance in a better way.

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