

Evaluation of the nutrition knowledge of athletes in Sri Lankan Universities: Special references of University track & field athletes

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Abstract: *Nutrition knowledge is especially important to develop the mental and physical health. Nutrition knowledge, broadly defined, refers to knowledge of concepts and processes related to nutrition and health including knowledge of diet and health, diet and disease, foods representing major sources of nutrients, and dietary guidelines and recommendations. The main purpose of the study was to evaluate sports nutrition knowledge in Universities sports students. Data were obtained from the 90 respondents which included the organizational manager and questionnaires were carried out with a range of people relevant to the field of study. In this research approach, explanatory research style and deductive research approach knowledge may need to be updated. The stratified random sampling method was used to collect data. Data collection occurred using a single case design, which includes questionnaire and Survey. SPSS software was used for the data analysis proceed. Nutrition knowledge questionnaire which was designed to study to examine athletes' knowledge. According to, nutrition knowledge can be grouped into three categories- Feeling towards nutrition statement, sources of information and experiences. Researcher tested a reliability validity test: Cronbach's Alpha 0.811. Researchers used Independent t-test and one-way ANOVA analysis to identify the difference between demographic factors and nutrition knowledge. Results suggest that Overall, 68.37% of participants achieved an NKS. The remaining 31.62% of participants is not received an NKS. There was no difference between sports nutrition knowledge among male student and female student-athletes and There was a difference between sports nutrition knowledge and according to universities. Collectively, participants responded they would be most likely to consult an athletic Trainer over other resources when obtaining current information regarding nutrition. Results indicate there is still a need for further sports nutrition education. Additionally, participants perceive that having a dietitian on their athletic staff would be advantageous for obtaining nutrition information and in achieving a healthier diet and improved performance.*

Key Words – Knowledge, Nutrition, Sport Athletes

1. INTRODUCTION

In general, neither athletes nor coaches have sufficient knowledge on nutrition to create an environment that can result successfully in enhanced performance and optimal health. The importance of nutrition education is increasingly recognized at present, and there is a consensus that people's food choices, dietary practices, and physical activity behaviors influence health. Nutrition knowledge was found low for the students enrolled in universities to become prospective teachers and coaches and they were not aware of the importance of the nutrition for performance.

A body without knowledge is like a house without a foundation (Hebrew proverb). The desire for knowledge, like the thirst of riches, increases ever with the acquisition of it (Laurence Sterne). Follow knowledge, like a sinking star, beyond the utmost bound of human thought (Alfred, Lord Tennyson) (dictionary, n.d.). Knowledge mean Information, understanding, or skill that

you get from experience or education. Awareness of something, the state of being aware of something. (Dictionary, 1828). Nutrition is an important component of any physical fitness program. The main dietary goal of active individuals is to obtain adequate nutrition to optimize their health and fitness or sports performance. (Ozdoğan & Ayse Ozfer Ozcelik, 2011)

2. METHODOLOGY

The most important stage of a study is the sampling and consequently it had to be handled properly. Therefore, the target group of this study was the track and field athletes in Universities. In the research, sample is represented by the track and field athletes who are arriving to University. Considering current athletes' participation one hundred and twenty (120) athletes were selected as sampling. In this case, stratified sampling was as followings.

Under stratified sample, the sample were consisting on three universities which have the best performance from SLUG¹. The stratified sample was used to administer questionnaire for athletes. While collecting data from above samples.

The questionnaire included the following components: basic nutrition knowledge and sports nutrition knowledge, personal feelings towards sports nutrition statements, sources used to obtain current nutrition information and sports nutrition experience.

Different methods were not used to execute this questionnaire and it was created in one same pattern. Because the researcher did not have an opportunity to understand their education level and psychological level as they could be different. Moreover, Likert scale selection method was employed in this questionnaire for the convenience of the analysis

Table 1: Components of the questionnaire

Variables	Question Numbers	Total number of question
Nutrition knowledge	Q1-Q27	27
Feeling towards sports nutrition statements	Q28-Q33	06
Sources of nutrition information	Q34-Q40	07
Sports nutrition experience	Q46-Q52	07
General Question	Q41-Q45	05
Total Number of Questions		52

It is explained below how the questionnaire was processed in a systematic way in order to get useful information the survey.

The basic nutrition and sports nutrition statements were scored following the system used by Nordstrom et al. Statements answered correctly were given a score of 1, and statements answered incorrectly, including those with the answer “Don’t Know,” were scored as 0. The overall score was referred to as the Nutrition Knowledge Score (NKS).

Statistical Package for the Social Sciences (SPSS) version 22.0 was utilized to analyze the data gathered. The means of the NKS for each year 1st, 2nd, 3rd & 4th group were calculated. A one-way analysis of variance (ANOVA) was conducted to examine the NKS between each of the year. A t-test determined whether any knowledge differences existed between males and females. The Likert-scale statements regarding feelings towards sports nutrition statements and the sources from which participants indicated they currently receive nutrition information were assessed using descriptive statistics, and a one-way ANOVA was done to

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compare the responses between years. Participant characteristics and demographics and questions regarding experience with a dietitian were evaluated using frequencies and descriptive statistics. A *p* value with a significance of < 0.05 was used for comparison.

3. ANALYSIS OF THE DATA

A summary of Participant characteristics and demographics are displayed in below table.

Table 2: Summary of Participant

Characteristic	Category	N	%
Gender	Male	45	50
	Female	45	50
University	Jayawardhanapura	30	33.3
	Sabaragamuwa	30	33.3
	Peradeniya	30	33.3
Academic Year	1 st Year	12	13.3
	2 nd Year	30	33.3
	3 rd Year	25	27.8
	4 th Year	23	25.6
Faculty	Agriculture	20	22.2
	Applied Science	10	11.1
	Art	29	32.2
	Management	23	25.6
	Science	8	8.9
Current Residence	On campus	50	55.6
	Off campus	40	44.4

Feeling towards sports nutrition statements

Mean scores and standard deviations representing participants' feelings towards six statements pertaining to sports nutrition are displayed in below table. Most participants agreed to the statements that the food an athlete consumes is likely to affect his or

her performance ($1.88 \pm .65$) and that nutrition counseling would be important to the athlete who is trying to change his or her weight ($2.03 \pm .741$). Having a dietitian/nutritionist on their team's staff does or would help them achieve a healthy diet (2.12 ± 0.762) and Having a dietitian/nutritionist on their team's staff does or would help them improve their athletic performance (2.52 ± 0.915). Participants tended to remain neutral towards the statement the caffeine has been shown to improve endurance performance ($2.53 \pm .997$). Many participants disagreed with the statement that learning about nutrition is not important for athletes because they eat so much food they always get the nutrients their bodies need (3.07 ± 1.149).

Table 3: Feeling towards sport nutrition knowledge

Statement	N	Mean ± SD
Caffeine has been shown to improve endurance performance.	90	2.53 ± 0.997
The type of food an athlete eats affects his or her performance.	90	1.88 ± 0.650
Learning about nutrition is not important for athletes because they eat so much food they always get	90	3.07 ± 1.149

the nutrients their bodies need.		
Nutritional counseling would be important to the athlete who is trying to change his or her weight.	90	2.03 ± 0.741
Having a dietitian/nutritionist on my team's staff does or would help me achieve a healthy diet.	90	2.12 ± 0.762
Having a dietitian/nutritionist on my team's staff does or would help me improve my athletic performance.	90	2.52 ± 0.915

Sources of nutritional information

Displayed in below table are the means and standard deviations corresponding to the resources in which participants indicated they would be likely to use to obtain current nutrition information.

Table 4: Sources of nutritional information

Resources	N	Mean \pm SD
Athletic Trainer	90	2.06 \pm 0.952
Coach	90	3.26 \pm 1.268
Academic Journals	90	3.52 \pm 1.183
Magazines	90	3.67 \pm 1.180
University Nutrition/Health Courses	90	2.67 \pm 1.006
Dietitian/Nutritionist	90	2.37 \pm 0.953
Physicians	90	2.08 \pm 0.915

As a group, participants selected athletic Trainer as the resource they would be most likely to consult, as represented by

a mean of 2.06 \pm 0.952. Physicians (2.08 \pm 0.915), Dietitian/Nutritionist (2.37 \pm 0.953), University Nutrition/Health Courses (2.67 \pm 1.006), and coaches (3.26 \pm 1.268) completed the top five resources. Academic journals (3.52 \pm 1.183) and Magazines (3.67 \pm 1.180) were less likely to be selected as resources by participants.

Sport nutrition Experiences

Responses to the questions regarding sports nutrition experience are shown by Universities in below table. Most participants, regardless of universities, indicated they have not ever taken a college courses in which nutrition was included as part of the courses, have not practice sports activities in collaboration with the University of the institution or other non-club and have not also feeding through the knowledge of the institutions. Some participants (n = 48) indicated they have received education in relation to banned substances, on the other hand Some participants (n = 42) indicated they have not received education in relation to banned substances

When asked about whether their athletic department has a dietitian/nutritionist, approximately 72.2% (n = 65) of the participants responded “No” or “Don’t Know.” Approximately 27.8% (n = 25). Over greater than half of the participants in Jayawardhanapura and Sabaragamuwa Universities indicated their athletic departments have a dietitian/nutritionist. Fifty-three (53.9%) student-athletes indicated they had access to a dietitian/nutritionist elsewhere on campus.

Table 5: Sport nutrition Experiences

Experiences	Jayawardhanapura (n=30) (%)	Sabaragamuwa (n=30) (%)	Peradeniya (n=30) (%)	Total (n=90) (%)
Have you ever taken a college course(s) in which nutrition was included as part of the course(s)?				
Yes	16(53.3)	10(33.3)	09(30.0)	35(38.9)
No	14(46.7)	20(66.7)	21(70.0)	55(61.1)
Have you ever consulted with a dietitian/nutritionist concerning your diet?				
Yes	21(70)	25(83.3)	10(33.3)	56(62.2)
No	09(30)	05(16.7)	20(66.7)	34(37.8)
Does your athletic department have a dietitian/nutritionist?				
Yes	23(76.7)	29(96.7)	13(43.3)	65(72.2)
No/Don't know	07(23.3)	01(3.3)	17(56.7)	25(27.8)
If your team does not have a dietitian/nutritionist, do you have access to a dietitian/nutritionist?				
Yes	20(66.7)	20(66.7)	13(43.3)	53(58.9)
No	10(33.3)	10(33.3)	17(56.7)	37(41.1)
Have you received education in relation to banned substances? on campus?				
Yes	24(80)	14(46.7)	10(33.3)	48(53.3)
No	06(20)	16(53.3)	20(66.7)	42(46.7)
Do you also practice sports activities in collaboration with the University of the institution or other non-club?				
Yes	15(50)	11(36.7)	09(30)	35(38.9)
No	15(50)	19(63.3)	21(70)	55(61.1)
Have you also feeding through the knowledge of the institutions?				
Yes	06(20)	10(33.3)	08(26.7)	24(26.7)
No	24(80)	20(66.7)	22(73.3)	66(73.3)

Hypothesis is formulated to identify difference between demographic characteristics and Nutrition knowledge. In this case as statistical tool, independent t-test and one way ANOVA were used by the researcher.

The hypothesis that there would be a difference in sports nutrition knowledge between male student-athletes and female student-athletes was rejected. Using a sports nutrition knowledge questionnaire adapted from Hornstrom et al. (2011), no significant difference in knowledge was observed between gender. (Significance value/p = .966). Levene’s test was significant and significant value was .007. Therefore, population had variances among samples. The second hypothesis that there would be a difference between in sports nutrition knowledge and universities were accepted. Nutrition knowledge scores amongst Jayawardhanapura student-athletes were significantly greater than those of Sabaragamuwa student-athletes and Peradeniya student-athletes (F = 59.798, p = .000) in this study. Involving University athletes have also suggested Jayawardhanapura student-athletes have greater knowledge. Third hypothesis that there would be a difference between in sports nutrition knowledge and academic year of universities was rejected. no significant difference in knowledge was observed between academic year (F =.551, p = .649). The fourth hypothesis that there would be a difference between sports nutrition knowledge according to the faculty were accepted. Nutrition knowledge scores amongst Science and Applied Science faculties’ student-athletes were significantly greater than those of other student-athletes (F = 3.029, p = .022) in this study.

Overall, 68.37% (n = 62) of participants achieved an NKS. The remaining 31.62% (n = 28) of participants not received an NKS. The mean NKS for the entire sample was 17.78 ± 4.89.

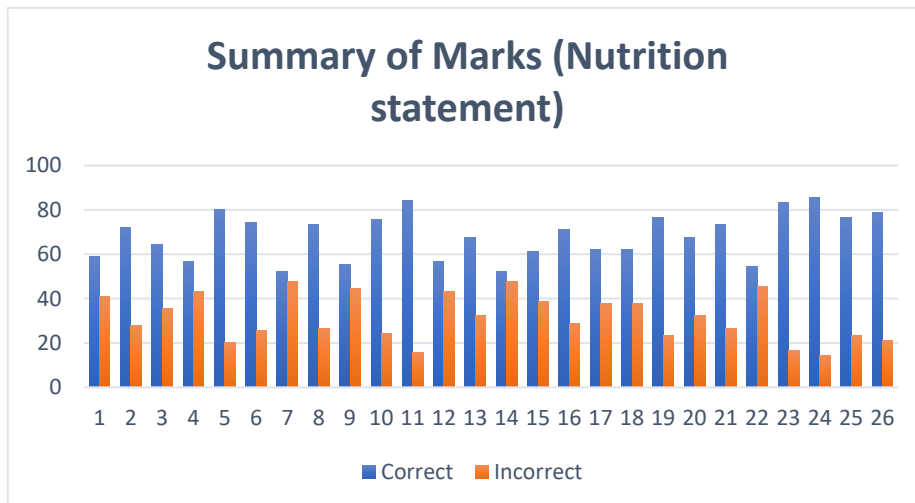


figure 1: summary of marks (nutrition statement)

4. DISCUSSION

This study evaluated sports nutrition knowledge and experiences with amongst track and field athletes across Universities. The first hypothesis was that there would be a difference in sports nutrition knowledge between male track and field student-athletes and female track and field student-athletes. Secondly, it was hypothesized that there would be a difference in sports nutrition knowledge between

track and field student-athletes across Universities. Then, hypothesis was that there would be a difference in sports nutrition knowledge between academic year. Finally, it was hypothesized that there would be a difference in sports nutrition knowledge between track and field student-athletes' faculties.

5. CONCLUSION

An evaluation of sports nutrition knowledge between male student-athletes and female student-athletes revealed that there was no significant difference in knowledge across gender. However, University of Sri Jayawardhanapura student-athletes had significantly greater sports nutrition knowledge than other university student-athletes. An evaluation of sport nutrition knowledge between student athletes across academic year first, second, third and fourth revealed that there was no significant difference in knowledge across academic years. However, Science faculty and Applied Science faculty student athletes had significantly greater sports nutrition knowledge than other faculty student athletes. Results indicated that there is still a need for further sports nutrition education in the University student-athlete population. Lastly, student-athletes indicated that having a dietitian on their athletic staff would be advantages for obtaining nutrition information and in achieving a healthier diet and improved performance.

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