
THE PREVALANCE OF NUTRITIONAL KNOWLEDGE IN INDIVIDUAL SPORTS AMONG UiTM PERLIS ATHLETES

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ABSTRACT

Athletes' food habits and nutritional understanding are closely related and have a significant impact on their performance. Athletes should always consider the importance of nutrition in their growth and development but yet, there still lacks study on nutrition knowledge toward individual sports. The purpose of this study was to determine the differences in prevalence of nutritional knowledge between genders among UiTM Perlis athletes who are playing individual sports. One-hundred and seventeen athletes has completed the Component of Nutritional Questionnaire. The questionnaire consists of 30 questions which test the nutrition knowledge of the athletes. The questionnaire was divided into two sections which consist of section A (covered demographics questions) and section B (the nutritional knowledge questions). The data showed the mean nutrition knowledge score of female athletes (18.98 ± 2.64) was slightly higher compared to male athletes (18.78 ± 2.27), ($p = 0.65$). The prevalence of nutritional knowledge among UiTM Perlis athletes did not differ significantly by gender across individual sports; however, this study concludes that athletes have sufficient nutritional knowledge to successfully create an environment that can lead to improved performance and good health.

Keywords: Nutrition knowledge, athletes, gender, individual sports, sports performance

INTRODUCTION

Nutrition knowledge is one of the influencing factors behind an athlete's food intake (Birkenhead & Slater, 2015). An adequate knowledge regarding nutrition is importance for the athletes in order to choose daily food selections that subsequent with suggested dietary intake for sport performance, recovery, and health (Torres McGehee et al., 2012; Birkenhead & Slater 2015). Athletes' nutritional knowledge can affect food intake, but research needs further study to assess athletes' nutritional knowledge using certified assessment tools (Heaney et al., 2011). Some reviews have reported that dietary intakes have been healthier with the better nutrition knowledge of greater intake vegetables and fruits among athletes (Heaney et al., 2011; Spronk et al., 2014; Trakman et al., 2016).

The important role of nutrition in growth and development should also always be considered to athletes (Cotugna et al., 2005). Athletes' food habits are related to their nutritional understanding, which can have a significant impact on how well they perform in competition (Heaney et al., 2011; Spronk et al., 2014; Trakman et al., 2016). The majority of earlier research have indicated that athletes can benefit from nutrition education as well; however, the absence of nutrition education resources on most college

campuses hinders the development of dietary habits (Kunkel, Bel & Luccia, 2001). The other nutritional benefits can facilitate and increase physical activity, athletic performance and recovery, and athletes need to develop healthy eating habits to maintain body weight and health while maximizing the impact of training (Andrews et al., 2016).

Nutrition knowledge has been debated in detail on individual sport event. Several studies reported the lack of adequate knowledge of nutrition among women athletes, including swimmers, and this lack of knowledge shows a need for education and instruction in this population regarding proper eating habits (Hoogenboom et al., 2009). According to a survey on the eating habits of top female runners, the majority of them fuel themselves with food, while others of the group simply pretend to eat and some still have hit-or-miss nutrition practises (Clark et al., 2017). In addition, individuals may get information about nutritional knowledge, but they only internalize what is important to them (Hoogenboom et al., 2009). A lack of nutritional knowledge and nutritional misconceptions will cause of inadequate dietary intake (Wolinsky, 1998).

To date, most of the previous study looking for nutrition knowledge on team sport athlete (Walsh et al., 2011; Manore et al., 2017; Alaunyte et al., 2015). By identifying knowledge gaps, example for team sport need more nutritional education, or towards specific dietary challenges such as inadequate carbohydrate consumption (Heikkilä et al., 2018). Hence, there is limited data on nutrition knowledge toward individual sports. In addition, to improve the professional nutritional, a good understanding of nutritional knowledge is very importance to individual sports athlete. Therefore, the purpose of the study is to determine the prevalence of nutritional knowledge in individual sports among UiTM Perlis athletes.

METHODOLOGY

Respondents and procedures

The Respondents were 129 UiTM Perlis athletes participate in individual sports. Based the sample size calculation, the respondents needed for this study, drawn from all athletes, is 97 responses (Krejcie & Morgan, 1970). However, the additional of 20% from the total respondents required was added considering drop out. The total respondents of this study were 117 athletes. Random sampling will be used to choose the athlete's selection in accordance with the inclusion and exclusion criteria. The questionnaire was distributed to the respondents via google form. A simple instruction was written together in the google form on how to answer all the questionnaire.

Instrumentation

Item for this questionnaire was divided in two sections. The first portion is Section A, which includes demographic questions about the respondent's gender, number of semesters, educational attainment, and major in sports. While for section B, the questionnaire used was Component of Nutritional Questionnaire. This questionnaire was adopted from Rosenbloom et al., (2002) that consist of 30 questions. The objective of section B is to evaluate the knowledge on the nutrition. They base their measurement on "true" or "false," respectively.

Statistical Analysis

Statistical Package for the Social Science (SPSS) versions 26.0 was used to analyse the data collected. The demographic information in section A was all reported as percentages values. All result for section B (nutrition knowledge) was presented as mean \pm standard deviation and percentage values. For the reliability of the questionnaire, the internal consistency coefficient "Kuder Richardson" was calculated, and the value was found to be 0.71. The independent sample t-test was used to assess the nutrition knowledge between genders to identify the variable that represents the university athletes' nutrition knowledge.

RESULTS

Table 1 demonstrated the demographic qualities of the respondents in this study. The 117 respondents were seen as a cross segment of the populace in this study. The data collected was analysed using descriptive analysis.

Table 1: Demographic data of participants

	Percentage (%)
Gender	
Male	50.4
Female	49.6
Sports	
Golf	6.0
Badminton	12.8
Track and Field	19.7
Tenpin Bowling	8.5
Kayaking	4.3
Martial Arts	17.9
Tennis	8.5
Archery	2.6
Mountain Bike	5.1
Petanque	3.4

Table 2: Statistics of Nutritional Knowledge in Male Athletes

	Mean	Std. Deviation
Protein is the main energy source for the muscle.	0.25	0.439
Fats have important roles in the body.	0.92	0.281
Iron-deficiency anaemia results in a decrease in the amount of oxygen that can be carried in the blood.	0.85	0.363
Iron in meat is absorbed at the same rate as iron in a plant food.	0.59	0.459
The body can synthesize vitamin D upon exposure to the sun.	0.73	0.448
Vitamin supplementation is recommended for all physically active people.	0.05	0.222
During the activity, feeling thirsty is an enough indicator of the need for liquid.	0.05	0.222
Skipping meals is justifiable if you need to lose weight quickly.	0.88	0.326
The food like chocolate, biscuits, chips are the most appropriate foods to be consumed soon after the training.	0.76	0.429
Vitamins are good sources of energy.	0.51	0.504
Alcohol consumption can affect absorption and utilization of nutrients.	0.97	0.183
Saturated and unsaturated oils both have the equal effect on the health.	0.75	0.439
Eating carbohydrates makes you fat.	0.61	0.492
Dehydration decreases performance.	0.97	0.183
The last meal before a competition should be consumed 3-4 hours before the competition.	0.73	0.448
Males and females at the same age group spend equivalent amount of calorie during the same exercise.	0.80	0.406
Bananas are good sources of potassium.	0.88	0.326
Salt is an essential part of a healthy diet.	0.39	0.492
Milk and milk products are the best sources of calcium.	0.86	0.345

Basic sugars like cube sugar, jam, honey are the most suitable energy sources for sportsmen.	0.32	0.471
Glycogen muscles store carbohydrate.	0.69	0.464
Equivalent weights of carbohydrate and protein have approximately the same caloric value.	0.37	0.488
A slice of bread is an example of one serving from the bread and cereals food group.	0.83	0.378
Protein is not stored in the body therefore, it needs to be consumed every day.	0.53	0.504
No more than 15% of calories in the diet should be provided by fat.	0.27	0.448
Caffeine has been shown to improve endurance performance	0.93	0.254
Fibre in the diet may help to decrease constipation, decrease blood cholesterol levels, and prevent cancers.	0.93	0.254
When trying to lose weight, acidic food such as grapefruit is of special value because it burns fat.	0.36	0.483
Carotenoids help to prevent the formation of free radicals.	0.58	0.498
Sports drinks are better than water.	0.42	0.498

Table 2 show the statistics of nutritional knowledge in male athletes. The highest mean in statistic of nutritional knowledge of male athletes is “Alcohol consumption can affect absorption and utilization of nutrients” (M=0.97) and “Dehydration decreases performance” (M=0.97). Furthermore, the less mean in this question is “Vitamin supplementation is recommended for all physically active people” (M=0.05) and “During the activity, feeling thirsty is an enough indicator of the need for liquid” (M=0.05).

Table 3: Statistics of nutritional knowledge in female athletes

	Mean	Std. Deviation
Protein is the main energy source for the muscle.	0.31	0.467
Fats have important roles in the body.	0.83	0.381
Iron-deficiency anemia results in a decrease in the amount of oxygen that can be carried in the blood.	0.90	0.307
Iron in meat is absorbed at the same rate as iron in a plant food.	0.90	0.307
The body can synthesize vitamin D upon exposure to the sun.	0.69	0.467
Vitamin supplementation is recommended for all physically active people.	0.12	0.329
During the activity, feeling thirsty is an enough indicator of the need for liquid.	0.10	0.360
Skipping meals is justifiable if you need to lose weight quickly.	0.95	0.223
The food like chocolate, biscuits, chips are the most appropriate foods to be consumed soon after the training.	0.79	0.409
Vitamins are good sources of energy.	0.55	0.502
Alcohol consumption can affect absorption and utilization of nutrients.	0.93	0.256
Saturated and unsaturated oils both have the equal effect on the health.	0.67	0.473
Eating carbohydrates makes you fat.	0.43	0.500
Dehydration decreases performance.	0.93	0.256
The last meal before a competition should be consumed 3-4 hours before the competition.	0.66	0.479
Males and females at the same age group spend equivalent amount of calorie during the same exercise.	0.74	0.442
Bananas are good sources of potassium.	0.78	0.421
Salt is an essential part of a healthy diet.	0.57	0.500
Milk and milk products are the best sources of calcium.	0.83	0.381
Basic sugars like cube sugar, jam, honey are the most suitable energy sources for sportsmen.	0.43	0.500

Glycogen muscles store carbohydrate.	0.57	0.500
Equivalent weights of carbohydrate and protein have approximately the same caloric value.	0.36	0.485
A slice of bread is an example of one serving from the bread and cereals food group.	0.76	0.432
Protein is not stored in the body therefore, it needs to be consumed every day.	0.75	0.451
No more than 15% of calories in the diet should be provided by fat.	0.52	0.504
Caffeine has been shown to improve endurance performance.	0.81	0.395
Fibre in the diet may help to decrease constipation, decrease blood cholesterol levels, and prevent cancers.	0.90	0.307
When trying to lose weight, acidic food such as grapefruit is of special value because it burns fat.	0.34	0.479
Carotenoids help to prevent the formation of free radicals.	0.52	0.504
Sports drinks are better than water.	0.38	0.489

Table 3 indicate the statistics of nutritional knowledge in female athletes. The highest mean in statistic of nutritional knowledge of female athletes is “Skipping meals is justifiable if you need to lose weight quickly” (M=0.95). Furthermore, the less mean in this question is “During the activity, feeling thirsty is an enough indicator of the need for liquid” (M=0.10).

Table 4: Nutritional Knowledge Score by Difference Gender

Variables	n	Mean	SD	df	t	p
Gender						
Male	59	18.78	2.27	115	-0.447	0.656
Female	58	18.98	2.64	111.852	-0.446	

The hypothesis for this study was tested using independent sample t-test. The result of independent sample t-test for the nutritional knowledge score by difference gender was not significant, $p = 0.656 > 0.05$. Hence, the hypothesis for this study was not accepted.

DISCUSSION

The purpose of this study was to compare the prevalence of nutritional awareness among male and female athletes. In the current study, it was found that the mean nutritional knowledge score of female athletes (18.98 ± 2.64) slightly higher compared to male (18.78 ± 2.27) athletes, there was no distinction between male and female athletes. According to the results, both genders scored their nutritional awareness at a moderate level.

Similar to earlier studies, this one showed that there were no discernible gender differences in nutrition knowledge (Rosenbloom 2002; Ozdogan & Ozcelik 2011; Andrews et al., 2016). This discrepancy may be caused by the fact that the majority of athletes are students at the Faculty of Sports Science and Recreation, where they have access to nutrition-related coursework that gives them an advantage in applying their understanding of nutrition to their daily lives as athletes. Additionally, the fact that both male and female athletes receive the same nutrition-related information from their coaches contributes to the lack of discernible gender variations in athletes' nutritional understanding. Nascimento et al. (2016) stated that exposure provided by trainers and coaches contributes to the players' improvement of nutrition understanding. These claims are consistent with a recent study by Turner et al. (2021), which found that professional squash players' awareness of nutrition might be improved by the use of a nutritional education course intervention.

CONCLUSION

According to the results of the current study, there is no discernible difference between male and female athletes' understanding of nutrition, but both genders' knowledge is regarded as modest among athletes who participate in individual sports at UiTM Perlis. In conclusion, the athletes are knowledgeable enough about nutrition to foster an environment that can successfully lead to enhanced performance and excellent health. The novel nutrition education models for athletes should be developed in order to improve their nutrition knowledge and dietary behaviour. It is advised that coaches find financing to hire a suitably competent dietitian or nutritionist to give the athletes nutrition advice in an effort to increase their understanding of nutrition.

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CONFLICT OF INTEREST

We certify that the article is the Authors' and Co-Authors' original work. The article has not received prior publication and is not under consideration for publication elsewhere. This manuscript has not been submitted for publication nor has it been published in whole or in part elsewhere. We testify to the fact that all Authors have contributed significantly to the work, validity and legitimacy of the data and its interpretation for submission to Esteem Journal.

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