



# Dietary practices of college athletes as a result of nutrition studies

Sandeep Kumar Azad <sup>1\*</sup>, Dr. Ranjan Kumar Pandey <sup>2</sup>

1. Research Scholar, Sabarmati University, Ahmedabad, Gujarat, India  
parasrampur1974@gmail.com ,

2. Teacher, IEC College of Engineering & Technology, Greater Noida, Uttar Pradesh, India

**Abstract:** Sports medicine, sports science, food, cultural impact, and even the media are all included in the idea of sports nutrition. Making sure you consume enough energy to fulfill your needs and reach optimal energy availability (EA) is a crucial aspect of sports nutrition. A balanced diet may support growth and maintain a healthy body composition while participating in sports. It also has a direct impact on performance, competition results, and the accomplishments of the athlete. On the other hand, poor eating or nutritional misalignment can impair the body's ability to grow, develop, and move, and it can also lead to health issues including osteoporosis, diabetes, obesity, and sarcopenia. Therefore, everyone who is active, especially professional athletes, has to understand nutritional therapy and information in order to enjoy sports in a safe and enjoyable way. Sports nutrition is therefore a vital component that demands the ongoing improvement of its instructional program. It has been demonstrated that coaches' nutritional knowledge affects athletes' weight loss patterns, and previous research has shown that nutritional education interventions in team sports athletes improve eating behaviors, nutritional awareness, and body composition.

**Keywords:** Nutrition Awareness, Knowledge, Physical Athletes, Health, Well-being

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## INTRODUCTION

Studies on nutritional knowledge and how it affects performance are also ongoing, and they include evaluations of dietary habits, sports nutritional knowledge, and nutritional information sources. Nevertheless, prior research on nutritional education approaches, attitudes, and educational attainment has only included physicians, medical professionals, and healthcare workers. According to earlier study, there is now a dearth of information on the real state and perception of nutrition education among physical education majors and professionals, despite the high need and demand for it in the sports context. To our knowledge, there is also little research on nutrition education in nations like Korea that continue to invest heavily in sports and have established specialized elite sports systems centered on identifying young talent and providing rigorous training for international competitions. Despite intake not always being in accordance with recommendations, nutrition is acknowledged to have an impact on sports performance. It has been demonstrated that the majority of football players do not adhere to dietary guidelines. This can be problematic for young people, whose nutrition is also very important for healthy growth and development. It is also crucial to remember that these treatments can address a wide range of subjects related to nutritional science. These projects address a variety of issues, including hydration and micronutrients, but they most often focus on the functions of macronutrients and their dietary sources. Nonetheless, a few of the references were not published in peer-reviewed publications. Another hotly debated topic is the impact of nutrition education on eating patterns and food consumption.

Gaining more understanding about nutrition may help young swimmers eat more and grow, develop, and be healthier while maximizing their performance, recuperation, and injury prevention. Athletic organizations frequently provide nutrition education support. The effect of brief, organized educational interventions on changes in nutrition knowledge among young competitive swimmers has been investigated in earlier research. Sport nutrition knowledge among national and international adolescent swimmers in the UK increased by 8% after seven weeks of organized teaching, which included weekly 30-minute classroom sessions lead by an undergraduate student. Unfortunately, the translation to dietary behaviors is uncertain since the authors did not evaluate nutritional consumption before or after the intervention. National-level young swimmers' adherence to the Mediterranean diet recommendations improved for up to six weeks following the intervention, thanks to a half-day nutrition workshop led by dieticians and a doctor, as well as guided supermarket tours, guidance on reading food labels, and a two-hour session for parents.

## **Nutrition**

Food is the primary focus of the scientific field of nutrition. As the definitions that follow will demonstrate, nutrition also addresses a number of other relevant topics. Nutrition may be summed up as "the study of what happens to food once it enters the mouth and thereafter." "The science of foods, the nutrients and other substances therein; their action, interaction, and balance in relation to health and disease; the processes by which the organism ingests, digests, absorbs, transports, and utilizes nutrients and disposes of their end products" is a more thorough definition, though. The social, economic, cultural, and psychological effects of food and eating must also be taken into consideration in nutrition. Now, let's take a closer look at each element.

## **History of Nutrition**

Man has been conditioned to select particular foods since the beginning of time, such as a variety of cereals, natural goods, vegetables, nuts, oilseeds, and animals with feathers and those that are most suited to promoting overall health. The discovery of nourishment has been made via exploration and subsequent use. The current understanding of sustenance is based on the observations and analyses of a small number of pioneers during the course of the nineteenth and nineteenth centuries. The following headings are used to investigate the early history of nourishment:

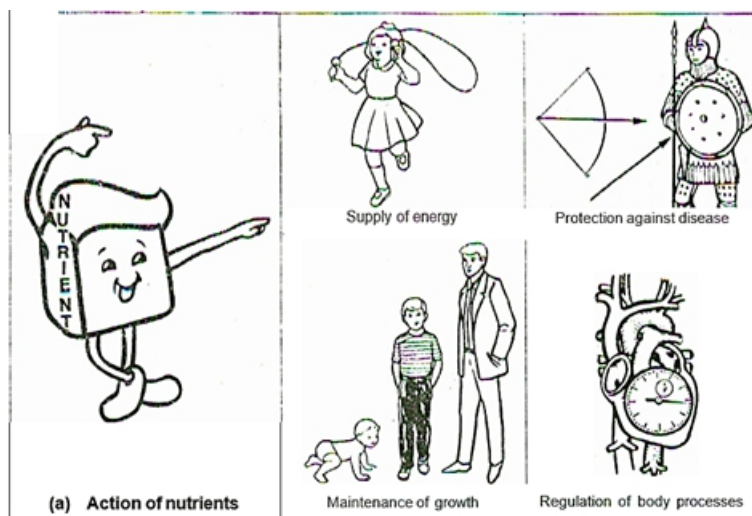
1. Chemical nature of plant sustenance's and creature tissues.
2. Observation on breath and vitality yield in creature and human subjects.
3. Early studies on protein sustenance.
4. Feeding analyses with creatures on immaculate food eating regimens prompting the disclosure of vitamins.
5. Observation on treatment of specific maladies in individuals by evolving eating regimen.

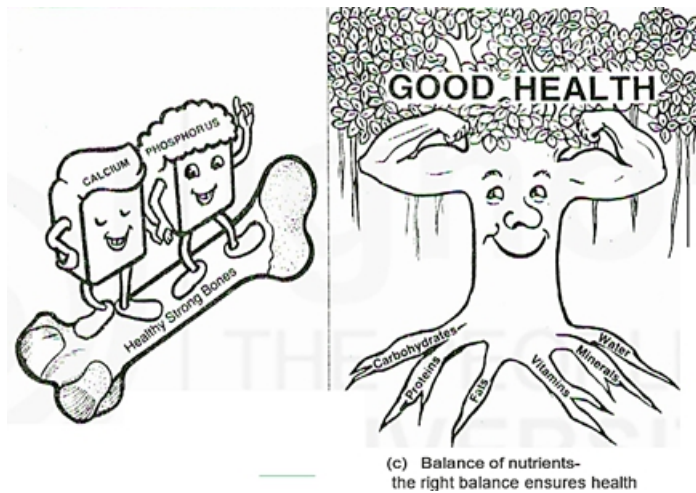
As of right now, nutrition is recognized as another science that is related to the earth. It controls every aspect of the relationship between living things and substances and aids in the development and self-sufficiency of living things. Due to its health, social, and economic implications, human sustenance has

drawn attention from a variety of authorities and has recently expanded significantly with a range of consequences.

### Nutrients: Action, Interaction and Balance

As you are well aware, food contains both nutrients and non-nutrients. Every vitamin has a certain amount that the body requires. The macronutrients are required in comparatively greater quantities, whereas the micronutrients are required in comparatively lesser amounts. However, they are all equally vital to our well-being. Every vitamin has a vital function in the body. For instance, the mineral calcium aids in the development of healthy teeth and bones. This is how calcium works. As seen in Figure 1(a), additional nutrients serve distinct purposes as well. To return to the earlier example, bones and teeth also contain another mineral, phosphorus. For bone and teeth to grow normally, the body needs to get calcium and phosphorus in the proper amounts and proportions. This indicates that these two nutrients must interact for bones and teeth to grow normally and for their structure and function to be maintained. (Figure 1(b)) Using calcium and phosphorus as an example, the idea of balance may also be conveyed. The body cannot absorb adequate calcium if there is an excess of phosphorus in the diet. This damages the bones and teeth by causing an imbalance between calcium and phosphorus. By eating meals that provide the two nutrients in the right amounts, this imbalance may be resolved. The phrase "balance" refers to the proper quantity and proportion of nutrients that the body needs in a broader sense. Naturally, this will guarantee good health, as shown in Figure 1(c).





**Figure 1: Definition of nutrition**

Every food ingredient that the body is unable to assimilate is spewed out in the face. The body creates some additional chemicals or byproducts as a result of digesting and managing ingested nutrients. Some of them should be eliminated from the body because they are hazardous. This is accomplished by moving them from the blood to the urine, which is then expelled from the body. In the following unit, digestion and absorption will be covered in greater detail.

### **Social, psychological and Economic Aspects of Nutrition**

The acceptability of a specific dietary pattern and the items contained are determined by social and psychological variables. We may recommend a healthy diet to someone, but for sociocultural reasons, for instance, he may not accept it. This is why it's important to take into account a person's social background and how they respond to certain foods. Furthermore, the availability and affordability of meals are determined by economic factors. Now let's take a closer look at each of these factors. Social and cultural aspects of eating: As you are aware, food has a unique significance in social and cultural contexts. Food is emphasized as the source of life in our ancient Vedic heritage. It also gives some meals particular properties. For instance, sattvic meals are supposed to boost vitality, creativity, and intellectual ability. Milk and milk products are considered to be the most popular sattvic foods.

Fish, eggs, and meat are considered rajasic foods (foods that arouse desire), but pig and beef are classified as tamasic foods (stale, warmed, tasteless, and unclean meals). When we compare this perspective on food and eating to our current one, we no longer think that certain foods or food groups (when included in a regular diet) may significantly affect our behavior. Customers usually consume reheated food, which has the lowest rank in the Vedic tradition, at restaurants and hotels. Despite being vegetarians, many people have no problem sharing food with friends who are not vegetarians. Naturally, the former would not eat meat or meat products, but they may still enjoy vegetarian meals made in kitchens that also cook meat. This is a trend that is desired. A positive indicator of development is the ability to tolerate and adjust to different dietary patterns.

You must now understand why nutrition is concerned with both food acceptance and how the body processes nutrients and other dietary ingredients. Just because a meal is high in nutrition doesn't mean that

people in that community would embrace it right once. Any meal must be viewed from their perspective. Does their culture disapprove of this cuisine? Is it regarded in that community as a "prestige" food? Naturally, we are referring to meals that are valued highly because they are costly or because they are consumed by individuals with better social standing. Is it permissible for all members of that community to eat the food item, or is it prohibited for pregnant women and infants? This demonstrates how crucial it is to consider an individual's sociocultural background in discussing how to improve or change food-related habits.

### **Nutrition Influencing Factors**

In order to understand how student-athletes feed their bodies, where they get their nutritional knowledge, and how they see themselves as college students, it is important to examine how they really make food choices and the factors that affect them. Diet and weight control are sometimes mistaken with healthy eating. This link between weight control and healthy eating is problematic for the general public and is related to the risk factors for disordered eating in athletes. According to estimates, people make 220 dietary decisions per day. Numerous internal and environmental variables, particularly physiological ones like hunger, food and taste preferences, and gastrointestinal pain, influence these decisions. Athletes are now more affected than ever by new nutrition research and gluten-related trends. Although the precise effects of a gluten-free diet on performance are unknown, an increasing number of endurance athletes are opting to follow this path according to personal choice. Based on self-report data and the potential for respondents to follow a gluten-free diet due to several other causes, the research presented in this study is likely biased. Nonetheless, it's intriguing to think about the latest developments and trends in sports nutrition.

There isn't much study on sports dietetics in higher education. A summary of a comparative evaluation on the self-efficacy of NCAA athletes revealed that athletes at schools with a sports dietician were more likely to look for nutritional information, showed more nutrition knowledge, and felt more confident when making decisions even though the full article could not be found. Sports dietetics is becoming more and more popular, and there is a clear demand for it as the evidence-based study field of dietary influence on performance expands. It is evident that student-athletes benefit more from getting knowledge from professionals than from peers, the internet, or social media, much as in the medical area. There is a huge knowledge gap about nutrition for athletes since information is still delivered from a range of sources.

### **LITREATURE REVIEW**

**El Helou, Nour. (2024)** The purpose of this study is to evaluate how a nutrition education program affects the eating patterns, nutritional knowledge, and performance results of Lebanese athletes. Two groups were created from a selection of 200 athletes: a control group (CG; N = 47, age:  $31.9 \pm 5.8$  years; height:  $174.4 \pm 7.8$  cm) and an intervention group (IG; N = 151, age:  $30.1 \pm 5.7$  years; height:  $179.4 \pm 8.2$  cm). Three nutritional education lectures and one-on-one meetings with athletes were part of the 4-month nutritional counseling program that the intervention group underwent. Ten months later, the IG received the same dietary intervention. A meal frequency questionnaire, a knowledge evaluation questionnaire, and dietary recalls were used to analyze the athletes' eating patterns, nutrition knowledge, body composition, and performance at the start and finish of the protocol.

**Lee, Kyu-Lim et.al. (2025)** In order to give information that may be used in university curricula and other external institutions for sports nutrition education, this study sought to examine the existing state and perspectives of nutrition education among Korean sports majors and workers. Korean individuals over 19 who majored in physical education at a university were included in this study. The General Nutrition Knowledge Questionnaire (GNKQ, 88 questions), demographic variables (10 questions), and nutritional awareness (20 questions) made up the questionnaire. Simple random sampling was used to conduct this poll totally online, and the final data analysis comprised 706 responses.

**Jaliph, Jasdeep et.al. (2023)** Sports nutrition is very important. It significantly affects athletic performance as well. For sportsmen and sportspeople, understanding nutrition is crucial. A sportsperson's performance during competition can be influenced by a variety of elements that may be connected to several areas. Sportspeople's inability to ingest enough total dietary energy is the most common nutritional issue they face. A balanced diet and healthy eating habits lower the risk of disease and injury while enabling athletes to exercise hard, recover rapidly, and adapt more effectively. To get the greatest outcomes, athletes should follow the right dietary plans both before and after competition.

**Boidin, Aimee et.al. (2020)** Athletes' nutrition education programs seek to increase their understanding of nutrition and, more crucially, encourage dietary changes that will improve their performance, health, and general well-being. This comprehensive analysis evaluated how nutrition education programs affected athletes' food consumption. Studies that assessed the quantitative food intake of athletes of all skill levels, aged 12 to 65, in response to a nutrition education program were found through a search. For every dietary parameter, standardized differences (effect sizes) were computed wherever feasible. Out of the 6285 publications that were found through the search, 22 studies with 974 participants (71.9% female) were deemed appropriate for inclusion.

**Veloso, Macarena et.al. (2025)** According to studies, female athletes frequently have little nutritional understanding and consume insufficient amounts of food to satisfy their nutritional requirements. The purpose of this study was to assess how a nutritional education intervention affected the body composition, food intake, and nutrition knowledge of 45 female handball players (aged  $17.6 \pm 2.1$  years). Six in-person sessions supervised by a licensed dietitian comprised the 3-week educational program that was part of a quasi-experimental intervention design. Anthropometric and body composition measures, nutritional consumption, nutrition knowledge, and Mediterranean diet adherence were evaluated.

**Vicente, Filipa et.al. (2025)** For young athletes, proper nutrition is essential to both their performance and overall health. Many, nevertheless, fall short of dietary guidelines. Programs for nutrition education are promising and affordable ways to improve eating habits. Nonetheless, there are still unanswered questions and significant differences amongst the intervention programs aimed at young athletes. This study sought to determine how well-informed Portuguese child athletes were about nutrition and whether a nutrition education program had a positive impact on football players' comprehension of a healthy diet.

## **RESEARCH METHODOLOGY**

This study sought to ascertain if a nutrition education program designed especially for teenage athletes will enhance their perceptions of their athletic performance, body composition, fruit and vegetable

consumption, and nutritional understanding. Teens in secondary school participated in an eight-week nutrition instruction program. Prior to and during the nutrition intervention, measurements were made of body composition, perceived athletic performance, food quality, and nutrition knowledge.

## RESULT

### Nutritional knowledge of athletes

The nutritional knowledge score was created to assess athletes' nutritional knowledge with the use of the NKSQ (Table 1). Athletes are rated as good if their scores fall between 100 and 75, as moderate if their scores fall between 74 and 49, and as low if their scores fall between 48 and 23.

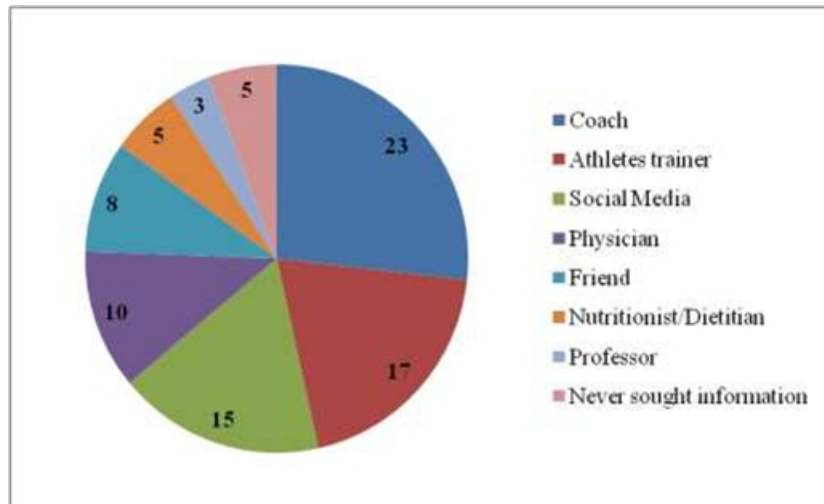
**Table 1: Nutritional knowledge level of athletes**

Knowledge Level	Male (n=50)	Male (%)	Female (n=50)	Female (%)
Good	27	54%	18	36%
Moderate	13	26%	23	46%
Poor	10	20%	9	18%
Total	50	100%	50	100%

The distribution of respondents by gender and level of expertise is displayed in the table. Fifty-four percent of the fifty male respondents had high knowledge, one hundred percent had moderate knowledge, and sixteen percent had low knowledge. Of the 50 female responders, 36 percent showed good knowledge, 46 percent showed moderate knowledge, and 18 percent showed low knowledge. The results show that while a larger number of females were classified as having a moderate level of knowledge, a bigger percentage of males had good knowledge.

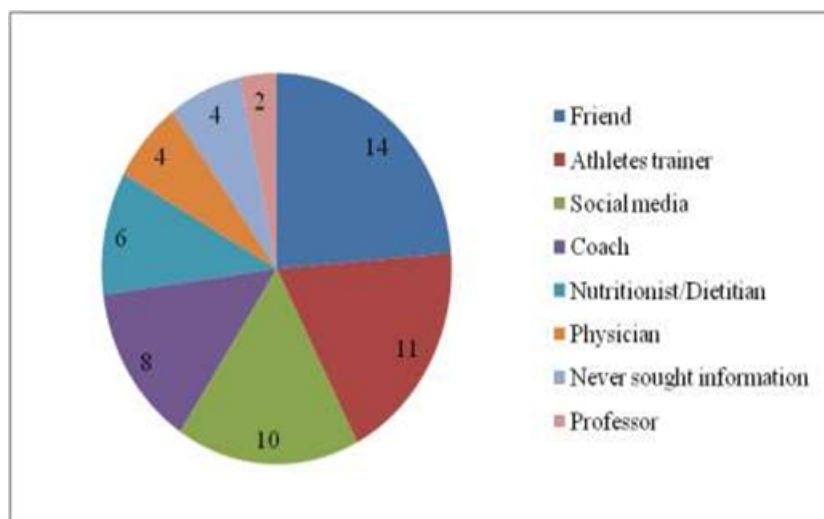
### Source of nutrition information

The data is displayed in figures 1 and 2. The athletes were asked to rank the top three places they go for dietary advice and information.



**Figure 2: Source of information among male athletes**

The top three sources of dietary advice they turn to are their coach, their trainers, and social media, according to figure 2. Few people ask doctors, dietitians, and professors for expert dietary advice and information.

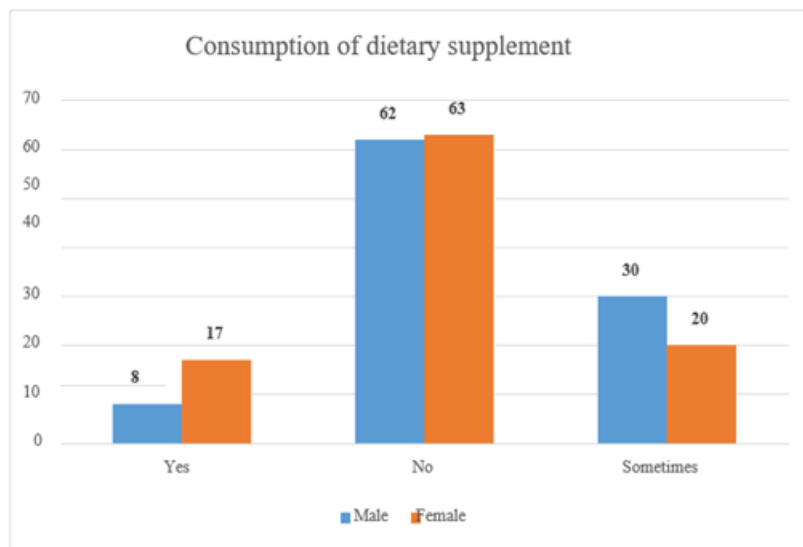


**Figure 3: Source of information among female athletes**

According to Figure 3, female athletes most frequently turn to their friends, sports trainers, and social media platforms for dietary advice. Their coach seldom provided them with expert dietary advice. Few people see the doctor or receive any dietary advice from the professor and nutritionist. Some people of both sexes have also mentioned that they are self-taught and rarely ask for assistance from others.

### Consumption of dietary supplements

The athletes were questioned about whether they regularly take any dietary supplements to improve their performance (figure 4).



**Figure 4: Consumption of dietary supplement**

Based on the survey, it was found that the majority of athletes do not utilize any kind of supplement, including nutritional supplements. Although there isn't many research on athletes' use of protein and other dietary supplements.

#### The Nutritional Awareness and Food Preferences Among Different Games Athletes

The purpose of this study was to look at the dietary choices and nutritional knowledge of various athletes participating in sports. This chapter of "results and analyses" is necessary to complete the current study. The outputs pertaining to comparative statistics, such as the t test, ANOVA, and descriptive statistics, were included in the comparative part. SPSS 20.0 was used to tabulate the collected data.

**Table 2: Mean description of athletes regarding nutritional awareness**

S. No	Variable	Group	N	Mean	SD	SEM	Df	T-Value
1	NUTRITIONAL AWARENESS	MALE ATHLETES	100	210.16	13.50	1.10	298	1.25**
2		FEMALE ATHLETES	100	208.25	12.85	1.04		

\*\*Not significant (1.97) at 0.05 level.

It is evident from Table 2 that both male and female athletes' mean scores are below the 0.05 threshold. Although there is no statistical difference, the male athletes' mean and SD value (210.16±13.50) is greater

than the female athletes' ( $208.25 \pm 12.85$ ). We discover that, statistically speaking, there is no discernible difference in nutritional understanding between male and female athletes.

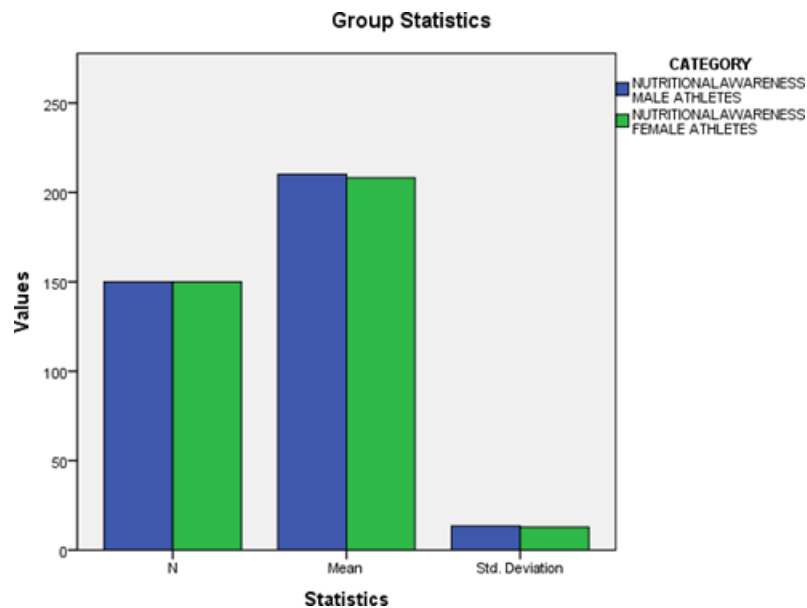


Figure 5: Mean difference between athletes regarding nutritional awareness

## CONCLUSION

This study sought to ascertain if a nutrition education program designed especially for teenage athletes will enhance their perceptions of their athletic performance, body composition, fruit and vegetable consumption, and nutrition knowledge. Fruit and vegetable consumption as well as nutrition awareness were evaluated in the study both before and after the educational intervention. Body composition was not precisely measured in every research participant and was thus left out due to faulty data from the Bod Pod. Finding out high school athletes' baseline nutrition knowledge was the study's primary goal. It was predicted that there would be little prior understanding about nutrition. This study's second goal was to ascertain if a nutrition intervention among high school athletes enhanced their perceptions of their athletic performance, nutritional intake, or nutrition knowledge.

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