

A Study on the Assessment of Nutritional Knowledge and Attitudes among Sports Persons

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Abstract

Introduction: For athletes a good and balanced diet is of great importance and a key to success. To meet athletes' energy requirements training, competition and recovery athletes must fuel their bodies with the appropriate nutritional foods. If these food diet requirements are not fulfilled, there is a high risk of very poor performance, outcome, and health problems. **Objective:** This investigation was just to compare the nutrition attitude and knowledge of sports persons in Jeddah city, which is very close to Holy city Makkah. **Materials and Methods:** This study was a cross-sectional survey was conducted over 12 weeks from February to April 2018 in Jeddah city, Kingdom of Saudi Arabia. Nutritional knowledge was assessed using the online electronic questioners were circulated to the athletes aged between 18 and 35 years and willingness to participate in the study in Jeddah, Saudi Arabia. **Results and Discussion:** A total of 248 athletes, including both male and females were participated in our study. The females are participate majority number in our study 72% ($n = 179$) and 28% ($n = 69$) males are participated. Our study shows that 38.5% ($n = 96$) 3–4 days a week, the participants engaged in the sports. Maximum respondents are currently free from health issues 54.9% ($n = 136$) and 28% ($n = 69$) are with obesity. **Conclusion:** This study revealed that the use of a nutritional supplement within established guidelines is safe, effective, and ethical. It is very important to educate the sportsmen regarding the dietary pattern. Failure to consume proper diet during competition due to false belief in markets and constant fear of eating prohibited foodstuff may hamper performance. Finally, the future of nutritional supplement looks very bright in regard to the areas of the transport mechanism, improved muscle retention as well as treatment of numerous clinical maladies through supplementations.

Key words: Athletes, Attitudes, Diet, Jeddah city, Kingdom of Saudi Arabia, Nutritional knowledge, Sports persons

INTRODUCTION

Diet that the nutritional meets all the daily body demands includes the micro and macronutrient needs for the body. There is no perfect diet for every person; it's unreasonable to say that a pregnant women who is – 26 years old and a cross-fit player – 35 years old and a diabetic patient all have the same nutrient requirements. The diet plan has to be based on individual factors, including person's weight, gender, the types of activities performed athletes, and specifically Health

statue "Diseases, Allergy." The importance of all is to improve person's quality of life.

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Nutrition of sport goes one step further. When the body is under strain during physical training the nutritional demand exceeds than the normal homeostasis. The term – Homeostasis: Refers to the tendency of an organism or a cell to regulate its internal conditions, usually by a system of feedback controls, so as to stabilize health and functioning, regardless of the outside changing conditions, (Balance). The heavy performance alters change the normal body homeostatic statue, because the body is under external stressors. As a result, an athlete’s body needs more water and fluids and electrolyte to remain the cellular hydration, and anti-oxidants to protect the cells, more energy to fuel exercise and training, and high nutrient concentrations to enhance muscles recovery “bcaa – protein.” The average of an athlete’s diet is – 2000 calories –diet, to have an optimal diet plan, an athlete’s diet must be developed specifically for his or her body needs.

Nutrition is important

Eating a balanced diet is important for good health. Food provides our body with energy, essential fats, proteins, minerals, and vitamins that we need to grow up and live properly .We need different types of foods to have the right nutrition for good health. Eating a healthy nutritious diet has shown affect to prevent a variety of types of diseases, including cancer. Good nutrition is important to have a good health, disease prevention, and essential for the growth and development of children and adolescents. For athletes, special things are more especially important; they always need to be more hydrated and always have a very good amount of protein for the muscles building.

Types of nutrition

There are seven major types of nutrition:

Carbohydrates, fats, fiber, minerals, protein, vitamins, and water.

Carbohydrates – The main source of energy.

Fats – first it is the source of energy and second its important for fat soluble vitamins.

Fibers – essential for digestive system.

Minerals – those inorganic elements occurring in the body and which are critical to its normal functions.

Proteins – essential for muscles growth and body cells.

Vitamins – water and fat soluble vitamins play important roles in the body.

Water – essential to normal body function – as a vehicle for carrying other nutrients and because 70% of the human body is water.

These classes can be classified into: Macronutrients and Micronutrients.

Macronutrients: Which the body needs it in large amount, which are carbohydrates, fats, fiber, proteins, and water.

Micronutrients: Which the body need it in small amount is minerals and vitamins.

Water is one of the most important nutrients in your diet. It helps eliminate waste products in your body, regulates body temperature during activity, and helps in the digestion of food.

Relationship between nutrition and sport.

Nutrition can help enhance athletic performance. An active lifestyle and exercise routine, along with eating well, is the best way to stay healthy.

Any diet plan or nutrition schedule depends on:

- The type of sport.
- The amount of training or activity you do.
- The time you spend doing the activity or exercise.
- People tend to overestimate the amount of calories they burn per workout, so it is important to avoid taking in more energy than you expend exercising.
- To help you perform better, avoid exercising on an empty stomach.

Carbohydrates

Carbohydrates are stored in the body in a form of glycogen, which can be used during physical activity (PA). Carbohydrate is necessary to meet the demands of energy needed during exercise, to maintain blood glucose level and replenish muscle glycogen store. During sub-maximal exercise, carbohydrates in the body are the major source of fuel.^[1] Athletes need the carbs for energy during the workout, and the carbohydrates are mainly stored in the liver and muscles. Complex carbohydrates are found in foods such as pasta, whole grain breads, and rice. Simple sugars, such as soft drinks, jams and jellies, and candy provide a lot of calories, but they do not provide vitamins, minerals.

What matters most is the total amount of carbohydrates you eat each day. A little more than half of your calories should come from carbohydrates.

The carbohydrates should be eaten before the exercise to give you energy. And after exercise, you need to eat carbohydrates to rebuild the stores of energy in your muscles if you are working out heavily.

Protein

Protein is important for muscle growth and to repair body tissues. Protein can also be used by the body for energy.

Moreover, it may be considered as the most important type of nutrition the athletes should eat in a good amount.

The proteins have different types a natural which is found in: Egg, fish, meat, etc.

And they are artificial types which are always used by the athletes for faster result and because it has a huge amount of protein, some artificial proteins like the one who has steroids are not recommended, and some types like the “bcaa” protein is good to use because it helps in muscle recovery after the exercise “it helps in recover the muscle after the catabolism” and it helps reducing the pain after the heavy exercise.

Recently mixture of soy protein and dairy protein has surfaced in commercial sports nutrition products such as powdered beverages, nutrition bars, and ready-to-drink beverages. These industries spotted a growing market.^[2]

Water and other fluids

Water is the most essential nutrient for athletes. Water and fluids are very important to keep the body hydrated and at the right temperature. Your body can lose many liters of sweat in an hour after hectic strenuous exercise. Clear urine is a very good sign that you have completely rehydrated.

Nutrition is important for everyone but particularly to sports people because it gives the tremendous energy needed to perform their sports activity. Not only the food is important but also the time, we eat can impact both their performance and health. The most important meals are before and after exercise.

For optimal performance, athletes must follow a diet that includes a balance of combination of carbohydrates, proteins, and fats. Carbohydrates are the main source of energy, such as fruits, vegetables, oatmeal, brown rice, and whole-grain pasta (Athletes in heavy training should have an intake of 6–10 g/kg body weight to prevent daily glycogen and carbohydrate depletion (ADA, 2000)). Proteins are required to aid muscle growth and repair (The average adult needs 0.8 g/kg). After exercising they need to replace the lost carbohydrates and they need to make sure proper muscle recovery by including protein in their post-training meal, healthy lean protein sources include eggs, fish, lean beef, chicken breast, and low-fat dairy products.

Fat is the final component of a healthy diet but should be eaten in moderation. Stick to healthy sources low in saturated fat, such as nuts, almond butter, and olive oil. The proportions of protein and carbohydrates and fat that they require will vary depending on both the intensity and type of sport to achieve the balance needed. Their need for calories is greater than

the average person, ranging from 2000 to 5000 calories per day; it depends on an individual’s age, gender, body type, and sport. Inadequate calorie intake may cause athletes to feel weak, sluggish, and negatively affect concentration and coordination.

On the other hand, one of the basic tenets of a good nutrition program and general health is hydration, fluid helps to regulate body temperature, blood pressure, and the movement and transport of essential energy nutrients. The majority of the athletes do not take enough fluids during events, so restoring balance post-game is essential. Vitamins play an important role in metabolic pathways-protein and bone synthesis, hemoglobin synthesis, and immune function.

It has been assumed that if increased energy needs are met, vitamin, and mineral requirement would also be met. Poor nutritional status – athletes report poor nutritional status due to training and poor work schedules, rely on snacking resulting in nutrient deficiencies. Vitamin such as iron is required for red blood cell production and a healthy immune system, as well as calcium to prevent osteoporosis mainly in females. Furthermore, increased energy metabolism creates a need for more Vitamin B. Finally, Vitamins A, E, and C, β -carotene which are a well-known antioxidant nutrients, protects cell membrane from oxidative damage, and endurance exercise increases oxygen utilization in heart and muscles.

Most of it is used for oxidative phosphorylation and some of it results in the release of free radicals. These vitamins neutralize free radicals. These nutrients may have a role in enhancing recovery from exercise, but there is no evidence that they improve performance. Working with a registered dietician can help them to identify any unhealthy food behaviors and create an eating plan that addresses their unique needs.

There is a very strong proof that proper choice of nutrients, proper supplement choice, and timing of intake are associated with optimal health and exercise performance.^[3]

Regular PA can alter the requirements for some micronutrients.^[4] This makes it important to choose foods carefully, taking into account the quality and quantity of macronutrient intakes, since requirements can vary depending on the type of exercise performed.^[5] For athletes, a smart sports diet and a sound training program session should be in place before looking in for supplements for a boost.^[6]

Apart, electrolyte consumption was very rare among the selected sports person. Electrolyte supplementations stimulate thirst response, improve taste, and minimize dehydration.^[7]

A study conducted by Wescott suggested that standard resistance exercise is very effective in reducing fat, reversing muscle loss, recharging resting metabolic rate, and to alleviate

PA, improving blood glucose levels, increasing bone mineral density, enhancing mental health, better cardiovascular health, and reversing specific aging factors.^[8,9] The main purpose of this investigation was to compare attitudes and nutrition knowledge of sports persons in Jeddah city.

MATERIALS AND METHODS

This work was a cross-sectional survey which was conducted over 12 weeks from February to April 2018 in Jeddah city, Makkah region, Saudi Arabia. Nutritional knowledge was assessed using the online electronic questionnaires which were circulated to the athletes aged between 18 and 35 years and willingness to participate in the study in Jeddah, Saudi Arabia.

This investigation examined knowledge of sources of nutrients, healthy food choices, current dietary recommendations, and the relationship between disease and diet processes was assessed. Nutrition knowledge and nutrition attitudes questionnaire was used to assess the nutritional knowledge. The questionnaire included four sections covering experts recommendations regarding increasing and decreasing intake of different food groups, nutrient knowledge, food choices (which ask people to choose between different options, e.g., to pick a healthy snack which is low in fat and high in fiber), and the relationships between diet and disease. The demographic questions measured consisted of sport, age, ethnic origin, and education. Questions were asked about the athlete's frequency of working out, previous nutrition classes, height, weight, and supplement use. The participants of the study are 248 sports persons aged between 18 and 35 years selected through the purposive random sampling method. The sports person was selected based on their willingness to participate in the study.

Participants

After obtaining approval from the institution's, human ethics committee approval participants were asked to fill the survey form each of the athletic departments, including football, basketball, cross-country/track, field, soccer, soft ball, gymnastics, volleyball, golf, tennis, and swimming. Overall 248 participants aged 18–35 years were surveyed.

Sports person with needed to be between the age group of 18–35 years old was the main entry criterion for participants.

Inclusion criteria

Sports persons aged between 18 and 35 years and willingness to participate were included in the study.

Exclusion criteria

Below 18 years and above 35 years and also not willingness to participate were excluded from the study.

RESULTS AND DISCUSSION

In our study, 51.3% participants are from the age group of 18 to 20 years, 38.5% ($n = 95$) are between the age group of 21 and 25 years, and 10.3% are age group of 26–35 years old. The females are participate majority number in our study 72% ($n = 179$) and 28% ($n = 69$) males are participated, as shown in Table 1.

The majority of the respondents in this study are Saudi citizens (82.1%; $n = 204$). Maximum people 48.7% are do daily gym, 28.2% participants prefer swimming and 17.9% participants like to play football daily among this some participants answered that they were doing two are more type of exercise/sports, as shown in Table 2.

The majority participants around 59% participants prefer vitamins as sports nutrition and 43.6% are used protein products, some participants responds they were taking two or more types of sports nutrition product, as illustrated in Table 3.

The body weight of the participants is between 40 kg and 50 kg 15% ($n = 37$), 27% ($n = 67$) are weight between 51 kg and 60 kg, 32% ($n = 79$) body weights are between 61 and

Table 1: Demographic characteristics

Age	Number of respondents
18–20 years	51.3% (127)
21–25 years	38.5% (95)
26–35 years	10.3% (26)
Gender	
Males	28% (69)
Females	72% (179)
Language preferred	
English	14.5% (36)
Arabic	85.5% (212)

Table 2: Type of sport(s)/exercise do respondents participate

S. No	Types of sports/exercise	Percentage of participants
1	Football	17.9
2	Tennis	2.6
3	Cycling	10.3
4	Swimming	28.2
5	Rowing	5.1
6	Running	43.6
7	Boxing	10.3
8	Gym	48.7
9	Squash	12.8

70 kg, 23% ($n = 57$) participants body weights are between 71 kg and 80 kg, 2% ($n = 5$) respondents body weights are between 81 kg and 90 kg, and 1% ($n = 2$) body weights are between 91 kg and 100 kg Figure 1.

The majority of participants heights are between 151 cm and 160 cm 39% ($n = 100$) and others are shown in Figure 2.

Maximum participants are college educated 94.1% ($n = 233$) and 5.9% (15) are completed their education till high school. About 74.4% ($n = 185$) participants are middle class people, 23.1% (57) are rich class economically, and 2.6% (7) participants stated as less economic status. About 36% of participants answered they eat fruits and vegetables when they fell hungry and also the same percentage of the participants prefer to eat sweets but the 21% participants shown interest

in having cakes and pastries. About 61.5% participants answered as they prefer to take grilled non-vegetarian items, 23.1% like to take boiled items and 10.3% said they like to have fried non-vegetarian items. About 30.8% respondents said that they skip their meals especially in breakfast.

About 50% of the respondents are stated that they take dates before going to gym, also 50% of the respondents are stated that they take banana before going to gym, 28.1% replied that they take coffee before going gym, and 3.1% said that they prefer rice, cakes, and peanut butter before going to gym in this some participants opted two answers as they take banana and dates both.

This study shows that 38.5% ($n = 96$) 3–4 days a week the participants engaged in the sports, as shown in Figure 3.

Maximum respondents are currently free from health issues 54.9% ($n = 136$) and 28% ($n = 69$) are with obesity. About 56.4% ($n = 140$) people responded that they have their basic meals on schedule time [Figure 4]. About 51.3% ($n = 127$) people respond that they take meals 3 time a day.

About 51.3% ($n = 127$) participants mentioned that their meal always contain essential nutrients and about 38.5% ($n = 96$) said sometimes it contain essential nutrients, as shown in Figure 5.

About 38.5% ($n = 96$) participants stated that they take 3–5 glasses of water per day and the same number of 38.5% ($n = 96$) participants stated that they take 6–8 glasses of water per day. About 64.1% ($n = 159$) of the participants replied that they take mostly portentous food, as illustrated in Figure 6.

Table 3: Types of sports nutrition product used by participants

S. No	Sports nutrition product	Percentage of participants
1	Protein	43.6
2	Fat burner	7.7
3	Endurance	17.9
4	Vitamins	59
5	Weight gainer	5.1
6	Energy boost	10.3
7	Nutritional	2.6

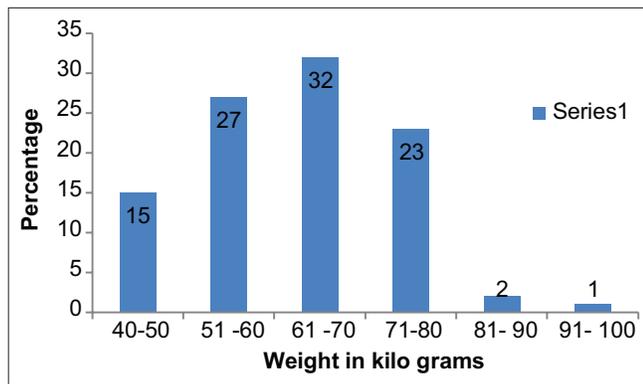


Figure 1: Body weight of participants

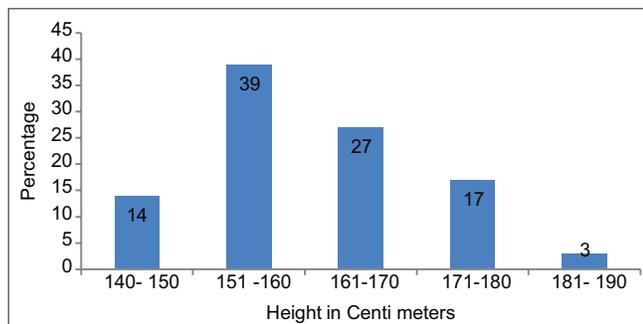


Figure 2: Height of the participants

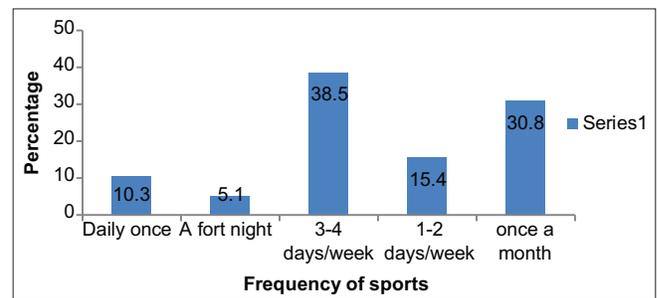


Figure 3: Frequency of participate in sport/exercise

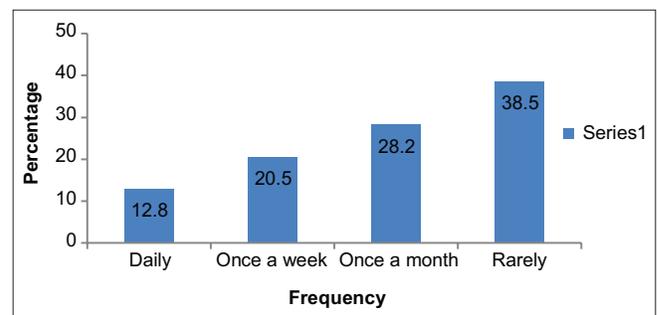


Figure 4: How many times do you weigh your weight

About 51.3% participants said often do they eat fast food, as shown in Figure 7.

Maximum number of the participants replied that they read the label of food packing before they purchase it is shown in Figure 8.

About 23.1% ($n = 57$) of participants were responded that they watch television while taking food. About 64.1%

participants said that they always think about the food and it will be always in your mind. About 48.7% participants said they enjoy for eating any meals, as shown in Figure 9.

Only 30.8% participants said they always resist eating more food, as shown in Figure 10.

The majority of the respondents 51% reply that they watch TV after having meals. About 28.2% respondents are said

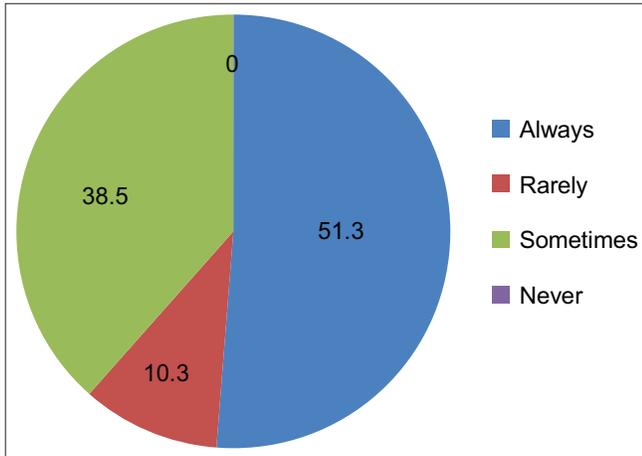


Figure 5: Does your meal contain essential nutrients

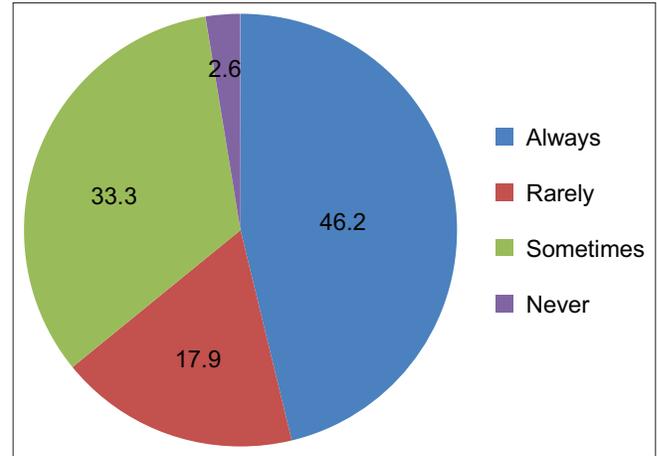


Figure 8: Do you read the food ingredients before you buy it

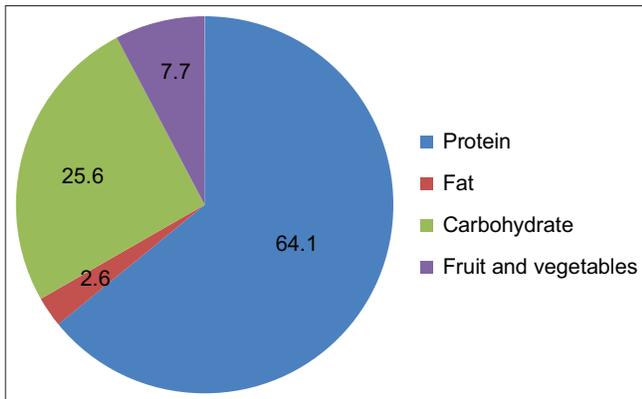


Figure 6: Your food mostly contain

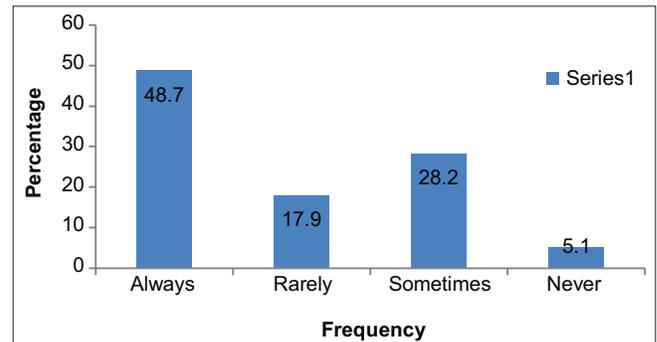


Figure 9: How often do you feel happy or do you enjoy yourself for eating any meal

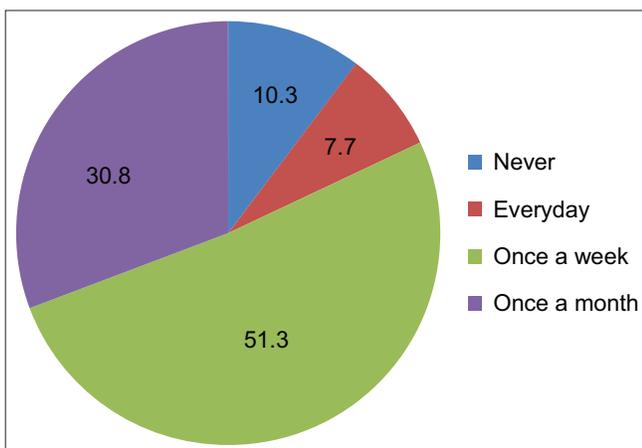


Figure 7: How often do you eat fast food

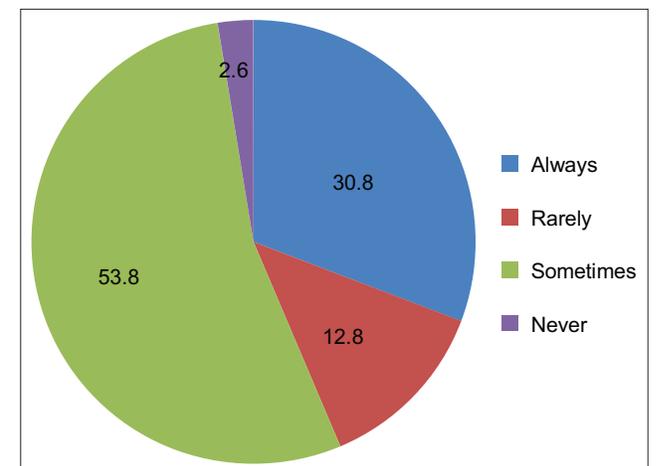


Figure 10: How often can you resist your desire of eating more food or a desire to eat a lot of food

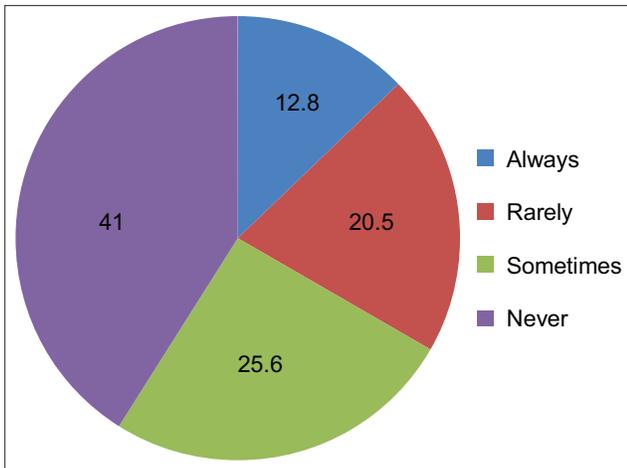


Figure 11: How often do you calculate the calories in your meals

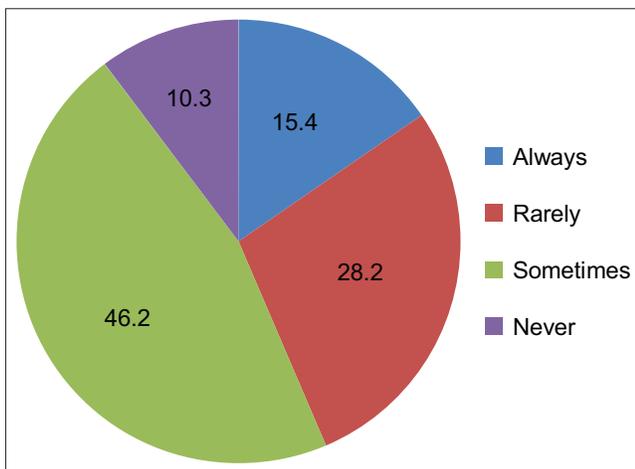


Figure 12: How often do you eat fast food between the main meals

they do weigh their weight once a month, as shown in Figure 4.

Only 12.8% participants said they calculate their weight always, as shown in Figure 11.

About 15.4% respondents reply that they always eat fast food and 46.2% says sometimes they eat fast food between the meals, as shown in Figure 12.

About 46.2% ($n = 115$) said that they preferred to take fresh juices, as shown in Figure 13.

This study was mainly focused on athlete’s knowledge and attitude on diet. Athletes have lacking in the knowledge in nutrition that was reported in the earlier studies.^[10,11] In this study, we observed that half of the participants were answered as they aware of the eating quantity of the food. This study shown that the participants having magnificent knowledge regarding fat content in the food, but they are ignorance of type of fat. It was observed that the athletes

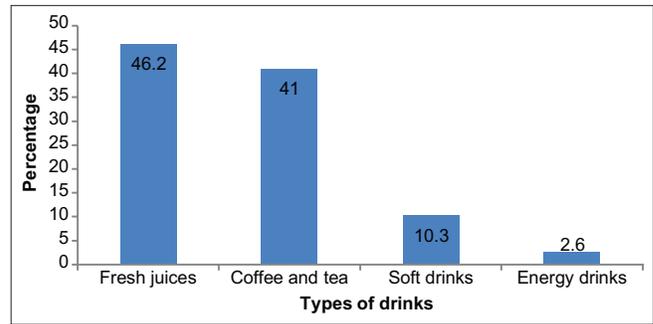


Figure 13: Which of the drinks do you prefer

were having difficulty in interpreting their knowledge while choosing the food, 60% of questions regarding food options were answered wrong. Promotions of nutritional products are one of the major element confusion in athletes while selecting healthy verses unhealthy food. Our study found that the participants were answered positive attitude for eating, whereas negative response reported in gymnastics.

The promotion and evaluation of workout have advantageous to accomplish the desired benefit in different people. The previous studies recommend that exercise and PA have better impact on life and health outcome.^[12,13]

The use of anabolic steroids cause hormonal dysfunctions, liver abnormalities, metabolic syndrome, and mood swing was reported in the previous studies.^[14,15] The majority of the sports organizations prohibits the use of anabolic steroids except it is prescribed by physician for certain illness.^[15-19]

CONCLUSION

Nutrition food is the foremost thing in athletes to perform better in sports and to keep good health. Pertinent food is essential in athletes to fulfill the energy requirement for training, recovery, and better performance. The defective performance in sports may results in athletes due to lack of nutritional diet. It is safe and effective when the nutritional supplements used as per the standard guidelines and also there is a need to educate the sports persons about the nutritional pattern. The wrong perception in the markets may results failure to consume accurate diet results decrease in performance during competition. Ultimately in the future nutritional supplements play an important role in improving the muscle retention and also help in treating various disorders. Future studies are required to find out the knowledge and attitude about the diet in the individual category of the sports persons.

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CONTRIBUTION OF AUTHORS

All authors have made substantial contribution to the work and approved it for publication.

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