Survey of Nutrition Knowledge Level and Consumption Patterns In Futsal Athletes

By Sasmarianto

Survey of Nutrition Knowledge Level and Consumption Patterns In Futsal Athletes

Sasmarianto[1*], Nadyta Harisca[1], Nagoor Meera bin Abdullah[3]

[1,2]Department of Physical Education, Health and Recration, Universitas Islam Riau.
Indonesia

[3]Department of Sport Science, Universiti Teknologi MARA, Shah Alam. Malaysia

*Corresponding Author: Sasmarianto., Sas., Email: sasmarianto@edu.uir.ac.id

Abstract

Study purpose. The purpose of this study is to find out the level of knowledge about nutrition and food consumption patterns of futsal athletes of SMA Negeri Olahraga, Riau Province.

Materials and methods. This study research is descriptive research that provides an overview of the object studied, the method used is a survey method using questionnaires as instruments. The population in this study was 15 futsal athletes of SMA Negeri Olahraga, Riau Province. The sample was taken as a whole from the study population or total sample.

Result. Results. The results of this study are about the picture of the level of knowledge of high nutrition, shown by those who fall into the very high category 1 (6.7%), high category 13 (86.7%), sufficient category 1 (6.7%), and low category. The food consumption pattern of futsal athletes of Riau Provincial Sports State High School seen from the frequency of food use shows that the consumption of staple foods is white rice consumed by more than one athlete a day, side dishes and vegetables are fish, chicken, tofu, tempeh finished more than three athletes per week, vegetables are spinach consumed.

Conclution. It can be concluded that futsal athletes' nutritional knowledge and consumption patterns need to be improved again because sports nutrition greatly affects the physical activity of athletes in achieving maximum performance.

Keywords: Knowledge Level, Nutrition, Consumption Patterns, Athletes, Futsal

Introduction

Futsal is a sport carried out by individuals who join a team, this also demands the ability of each individual so that they can win every game (Naser, Ali, Macadam, 2017). Currently, futsal is part of PSSI (Indonesian Football Association) futsal used to be under 3 auspices of BFN (National Futsal Agency), which is a body that has built and developed futsal in Indonesia. But in 2014, BFN did not become the body responsible for futsal in Indonesia, but a new

association was formed called the Indonesian Futsal Association (AFI). But AFI is still under PSSI. AFI has the same task as BFN, which is to build and develop futsal in Indonesia. AFI also continues the league that has been formed by BFN since 2006. The league which was originally named Indonesian Futsal League (IFL) has changed to Futsal Super League (FSL) and until now (2017) changed to Pro Futsal League (PFL) (Nada, Okki. & Farida, 2021).

In addition to holding professional leagues, AFI also holds amateur leagues in each region, student leagues, and student leagues, holding leagues with the intention of coaching futsal athletes who will be projected to a higher level. Many talent-based schools have sprung up and almost exist in all provinces in Indonesia, one of which is Riau Province. SMA Negeri Olahraga Riau Province is the only sports-based school in Riau Province. Established in 2012 by combining the concept of MBKM curriculum and expertise development in the field of sports. Riau Provincial Sports State High School has twelve sports majors, namely Aeromodelling, Athletics, Fencing, Volleyball, Rowing, Futsal, Judo, Pencak silat, Swimming, Soccer, Sepak Takraw and Table Tennis. All athletes occupy and live in dormitories with a total of 172 students.

Sports achievement is an accumulation of physical performance, techniques, tactics and the psychological maturity that the athlete can display as a whole in a match or race (Nada, Okki. Farida, 2021). Efforts that can be made to improve physical quality are by increasing the efficiency of muscle fitness work and fitness energy (Amansyah Daulay, 2019) (Sasmarianto, Henjilito, Zulrafli, Kamarudin, Nazirun, 2021). The energy needed for physical performance can also be obtained through the results of food metabolism, which is consumed every day, an athlete's diet must contain nutrients in accordance with those needed for daily physical activity and sports (Penggalih et al., 2019). The selection of proper and balanced nutrition in athletes can help even be needed in their efforts to pursue maximum sports achievements in futsal. The role of nutrients for athletes is no doubt because appropriate nutrition not only affects the body's functionality at rest time but also make a very meaningful contribution to efficiency during sports activities (Sasmarianto, Rahayu, Rumini, Rustiadi, 2020). In general, a futsal player who requires energy fulfillment as needed with carbohydrate content of 55-60% of total energy, fat 20-30% of total energy needs, and protein 15-20% of total energy needs. Futsal players, the energy expended when exercising must be balanced with the energy that comes in from food. Optimal food consumption can produce energy, so that physical ability and recovery time become better, balanced nutritional intake can also be used to improve and maintain nutritional status, build muscle, achieve optimal height, maintain body condition, and maintain physical freshness (Thapa et al., 2023).

Food distribution is carried out by food processors then athletes take according to predetermined portions, The food provided by the dormitory has no distinction for all athletes from six sports and sometimes the menu served is not in accordance with the master menu. During the meals of athletes of Riau Provincial Sports State High School, there is also no supervision from coaches or nutritionists, so the possibility of a mismatch in the nutritional needs of athletes is very large. Judging from the taste of food, the athletes of Riau Provincial Sports State High School also have different tastes in the food menu served. For athletes who are not appetized with the food menu provided they choose to buy food outside the dormitory food ration, this will certainly result in their nutritional needs not being met which are needed by the body in activities. Likewise, the provision of adequate food and balanced nutrition for an athlete will greatly support excellent physical condition. Provision of fluid intake in the form of electrolyte fluids and other mineral intake that is not routinely given to athletes during training, competing or even after matches or training. Based on this, one of the efforts that will be made is to conduct research to determine the provision of nutritional intake in futsal athletes of Riau Provincial Sports State High School.

Materials and methods

Study participants.

Population is the overall subject of research (Arikunto, 2014). The population in this study was Riau Province State Sports High School Futsal Athletes totaling 15 athletes. Given that the population is less than 100, in this study the sample was taken as a whole from the study population. Distribution of research samples based on the Total Sampling technique (Nanda Hanief, Yulingga; Wasis, 2017), thus the number of samples in this study was 15 athletes.

Study organization.

This type of research is descriptive research that provides an overview of the object under study, the method used is a survey method using questionnaires as an instrument (Sugiyono, 2017). The treatment design used in the study consisted of survey methods, questionnaire distribution, and data processing. Given the many factors related to the level of nutritional knowledge of athletes and consumption patterns, it is necessary to limit the problem to increase the focus on the problem. Due to limited knowledge, skills, and time, this research only focused on problems directly related to nutritional knowledge and consumption patterns.

Statistical analysis.

In this research, data processing was carried out through several stages including editing, coding, entry, and cleaning (Ridwan, 2002). The data obtained will then be tabulated into a table according to the type of questionnaire that has been filled out. Knowledge measurement uses an instrument in the form of a questionnaire consisting of questions that are given a value of zero if the respondent answers incorrectly and a value of one if answering the question correctly. Because the research used is descriptive, the statistical data analysis test where the results of data processing are only in the form of proportion tests.

Furthermore, the results of this knowledge measurement will be divided into three categories, namely good, sufficient, and lacking. The good category is able to answer correctly > 75% of questions, enough if the questions are answered correctly as much as 61-75%, less if answering questions ≤ 60% (Arikunto, 2006). The method used in this study is the food frequency questionnaire (FFQ) form method given to athletes to find out the food menu consumed.

After the data is processed, the data will be analyzed. The data is analyzed to see the frequency distribution by percentage or proportion size. Then the data is tested to determine the level of nutritional knowledge and consumption patterns.

Based on these provisions, the identification of the tendency category can then be made as follows:

Table 1. Identification of the tendency category of the Nutrition knowledge variable

No	Kriteria penilaian	Kategori	F	Prosentase
1.	$X > 18,5$	Very High	1	6,7%
2.	$12,5 < X \leq 18,1$	High	13	86,7 %
3.	$6,35 < X \leq 12,5$	Fair	1	6,7 %
4.	$X \leq 6,35$	Low	0	0 %
	Jumlah		15	100%

Based on the results of the research data as a whole, it shows that respondents who have a very high score are 1 athlete or 6.7% respondents who have a high score are 13 athletes or 86.7%, and respondents who have a fair score is 1 respondent or 6.7%. From this data, the researcher can conclude that the nutritional knowledge of Riau Province Sports State High

School futsal athletes. 13 people are included in the high category, this can be seen from the frequency of 86.7% of the total respondents.

Furthermore, the athletes' food consumption patterns will be known as follows:

Table 2: Identification of staple foods

Name of Food	Every day (2-3x)	7x/ week	5-6x/ week	3-4x/ week	1-2x/ week	Never	Quantity
	Frequency of Consumption						**Quantity**
Rice	13	2					15
Bread	3	7		1		6	15
Noodle				1	12	1	15

Based on Table 2, 13 athletes consumed rice more than 1 time every day. 2 athletes consumed rice every day. Bread was consumed by 3 athletes more than 1 time every day. 7 athletes consumed bread every day for one week, and 1 athlete consumed bread 3-4 times a week. 6 respondents never consumed bread. Noodles were consumed by 1 athlete 3-4 times a week. 12 athletes consumed noodles 1-2 times a week. 1 athlete never consumed noodles.

Based on the data, it can be seen that rice is the most commonly consumed staple food. Rice is consumed as a staple food with a frequency of use by more than one futsal athlete of SMA Negeri Olahraga Riau Province a day or consumed by every futsal athlete of SMA Negeri Olahraga Riau Province. Furthermore, other staple foods that are often consumed in a row from the highest score to the lowest score are white rice, bread, and noodles.

Table 3. Frequency of Side Dishes

Name of food	Every day (2-3x)	7x/ week	5-6x/ week	3-4x/ week	1-2x/ week	Never	Quantity
	Frequency of Consumption						**Quantity**
Chicken	8		5	2			15
Beef	1		1	1	5	6	15
Fish	6		5	2	2		15
Eggs	4	4	1	3	3		15
Tempe	3		2	4	2	4	15
Tofu	3	1	1	5	4	1	15

Based on table 3, there were 8 athletes who consumed chicken every day (2-3 times), 5 athletes consumed chicken 5-6 times, and 2 athletes consume chicken 3-4 times a week. Beef, there was 1 athlete who consumed every day, 1 athlete consumed 5-6 times a week, 1 athlete consumed 3-4 times a week, 5 athletes consumed 1-2 times a week and 6 athletes never consumed beef. Fish was consumed by 6 athletes every day, 5 athletes consumed 5-6 times a week, 2 athletes consumed 3-4 times a week, 2 athletes consumed 1-2 times a week, Eggs were consumed by 4 athletes every day, 4 athletes consumed 7 times a week, 1 athlete consumed 5-6 times a week, 3 athletes consumed 3-4 times a week, 3 athletes consumed 1-2 times a week, Tempeh was consumed by 3 athletes every day, 2 athletes consumed 5-6 times a week, 4 athletes consumed 3-4 times a week, 2 athletes consumed 1-2 times a week and 4 athletes never consumed tempeh. Tofu was consumed by 3 athletes every day, 1 athlete consumed 7 times a

week, 1 athlete consumed 5-6 times a week, 5 athletes consumed 3-4 times a week, 4 athletes consumed 1-2 times a week and 1 athlete never consumed tempeh.

Based on this data, it can be seen that chicken and fish are the most frequently consumed food ingredients. Chicken and fish are consumed as food with a frequency of use of more than one futsal athlete a day or consumed every time futsal athletes eat.

Table 4. Frequency of Vegetable Consumption

Name of food	Frequency of Consumption						Quantity
	Everyday (2-3x)	7x/ week	5-6x/ week	3-4x/ week	1-2x/ week	Never	
Spinach	6	1	5	4	3	1	15
Water Spinach	5	2	1	4	3	1	15
Casava Leaves	2	1	2	1	3	6	15
Chinese Cabbage	3	2	1	1	7	1	15
Green mustard	1	2	1	1	7	3	15
Long been	1	2	4	1	6	1	15
Eggplant	2	1		2	4	6	15
Carrot	4	3	1		5	2	15
Chickpeas	2	2	1	1	5	3	15
Squash		2		1	7	5	15
Others		1		1	1	12	15

Based on Table 4, there were 6 athletes who consumed spinach every day (2-3 times), 1 athlete consumed 7 times a week, 5 athletes consumed chicken 5-6 times, 4 athletes consumed 3-4 times a week, 3 athletes consumed 1-2 times a week and 1 athlete does not consumed spinach. There were 5 athletes who consumed water spinach every day, 2 athletes consume 7 times a week, 1 athlete consumed 5-6 times a week, 4 athletes consumed 3-4 times a week, 3 athletes consumed 1-2 times a week and 1 athlete never consumed water spinach. Cassava leaves there were 2 athletes who consumed every day, 1 athlete consumed 7 times a week, 2 athletes consumed 5-6 times a week, 1 athlete consumed 3-4 times a week, 3 athletes consumed 1-2 times a week and 6 athletes never consumed cassava leaves. Chinese cabbage, there are 3 athletes who consumed it every day, 2 athletes consumed it 7 times a week, 1 athlete consumed it 5-6 times a week, 1 athlete consumed 3-4 times a week, 7 athletes consumed 1-2 times a week and 1 athlete never consumed Chinese cabbage. Green mustard, there was 1 athlete who consumed every day, 2 athletes consume 7 times a week, 1 athlete consumes 5-6 times a week, 1 athlete consumed 3-4 times a week, 7 athletes consumed 1-2 times a week and 3 athletes never consumed green mustard.

Long beans, there was 1 athlete who consumed every day, 2 athletes consumed 7 times a week, 4 athletes consumed 5-6 times a week, 1 athlete consumed 3-4 times a week, 6 athletes consumed 1-2 times a week and 1 athlete never consumed long beans. Eggplant there were 2 athletes who consumed every day, 1 athlete consumes 7 times a week, 2 athletes consume 3-4 times a week, 4 athletes consumed 1-2 times a week and 6 athletes never consumed eggplant. Carrots, there were 4 athletes who consumed every day, 3 athletes consumed 7 times a week, 1 athlete consumed 5-6 times a week, 5 athletes consumed 1-2 times a week and 2 athletes never consumed carrots. Chickpeas, there were 2 athletes who consumed every day, 2 athletes consumed 7 times a week, 1 athlete consumed 5-6 times a week, 1 athlete consumed 3-4 times a week, 5 athletes consumed 1-2 times a week and 3 athletes never consumed chickpeas. There were 2 athletes consuming chayote 7 times a week, 1 athlete consuming 3-4 times a week, 7

athletes consuming 1-2 times a week and 5 athletes never consuming Chinese cabbage. Others there were 2 athletes consuming 7 times a week, 1 athlete consuming 3-4 times a week, 7 athletes consuming 1-2 times a week and 5 athletes never consuming others.

Based on the data, it can be seen that the most frequently consumed vegetable is spinach. Vegetables that are often consumed in a row are spinach, kale, carrots, chicory, cassava leaves, eggplant, mustard greens, beans, long beans, and chayote.

Table 5. Frequency of Fruits Consumption

Name of food	Frequency of Consumption						Quantity
	Everyday (2-3x)	7x/ week	5-6x/ week	3-4x/ week	1-2x/ week	Never	
Apple	2	1			6	6	15
Papaya	4	1	2	2	4	2	15
Orange	3	1		1	7	3	15
Watermelon	3	1		1	7	3	15
Banana	5	2	2	1	3	1	15
Mango	2	1	1	2	2	7	15
Rambutan	2	2			3	8	15
Grape	2	1		1	3	8	15

Based on table 5, there were 2 athletes who consumed apples every day, 1 athlete consumed 7 times a week, 6 athletes consumed 1-2 times a week and 6 athletes never consumed apples. Papaya there were 4 athletes who consumed every day, 1 athlete consumed 7 times a week, 2 athletes consumed 5-6 times a week, 2 athletes consumed 3-4 times a week, 4 athletes consumed 1-2 times a week and 2 athletes never consumed papaya. Oranges there are 3 athletes who consumed every day, 1 athlete consumed 7 times a week, 1 athlete consumed 3-4 times a week, 7 athletes consumed 1-2 times a week and 3 athletes never consumed oranges. Watermelon there were 3 athletes who consume every day, 1 athlete consumed 7 times a week, 1 athlete consumed 3-4 times a week, 7 athletes consumed 1-2 times a week and 3 athletes never consumed watermelon.

Bananas there were 5 athletes who consumed every day, 2 athletes consumed 7 times a week, 2 athletes consumed 5-6 times a week, 1 athlete consumed 3-4 times a week, 3 athletes consumed 1-2 times a week and 1 athlete never consumed bananas. Mango there were 2 athletes who consumed every day, 1 athlete consumed 7 times a week, 1 athlete consumed 5-6 times a week, 2 athletes consumed 3-4 times a week, 2 athletes consumed 1-2 times a week and 7 athletes never consumed mangoes. Rambutan, there were 2 athletes who consumed every day, 2 athletes consumed 7 times a week, 3 athletes consumed 1-2 times a week and 8 athletes never consumed rambutan. There were 2 athletes who consumed grapes every day, 1 athlete consumed 7 times a week, 1 athlete consumed 3-4 times a week, 3 athletes consumed 1-2 times a week and 8 athletes never consumed grapes.

Based on this data, it can be seen that the most commonly consumed fruit is banana. Bananas are consumed as food with a frequency of use of more than three Riau Province Sports State High School futsal athletes a day or consumed every time Riau Province Sports State High School futsal athletes eat. Fruits that are often consumed in a row are papaya, orange, and watermelon.

Discussion

The results of the study were calculated with the Excel program obtained data on the nutritional knowledge of 15 respondents who were futsal athletes of SMA Negeri Olahraga Riau Province, in the very high category 2 (13.33%), high category 10 (66.67%), moderate category 1 (6.67%), and low category 1 (6.67%). The data shows that the tendency of the data is centered in the high category. Thus it can be concluded that nutritional knowledge is included in the high category. Obtained these data results due to obtaining nutritional science subjects, thus there is no doubt that the nutritional knowledge of Riau Province Sports State High School futsal athletes is high. The nutritional knowledge variable consists of 4 indicators, namely the concept of athletes, the concept of athlete nutrition, athlete nutritional needs, a variety of menus and dishes. For indicators of nutritional knowledge, the results obtained show that nutritional knowledge is at a very high level. This is due to understanding the importance of the athlete concept. These results are evidenced by the results of the highest number of scores at a very high level, namely 13.33%. Indicators of the concept of athlete nutrition show that the tendency has sufficient ability. However, there are 38.46% who are in the very high category. This is because there are still those who have not been able to master the concept of athlete nutrition.

The nutritional needs indicator shows that the tendency has a high ability. In terms of nutritional needs, it is 44.87%. However, there are 21.79% who have a sufficient category and 6.42% in the low category for indicators showing satisfactory results. In this case, it is because some do not understand their own nutritional needs. Menu, variety, and dishes are in a very high category because 52.56% are in the very high category and 35.89% are high. In this case, they really understand what the menu, variety, and dishes are, but they can't apply them. Overview of the level of consumption patterns of Riau Province Sports State High School futsal athletes Food consumption patterns of Riau Province Sports State High School futsal athletes seen from the frequency of use of food ingredients. Shows that rice is consumed every day (2-3 times) by futsal athletes of SMA Negeri Olahraga Riau Province, noodles are consumed by futsal athletes of SMA Negeri Olahraga Riau Province 2 times a week. Riau Province Sports State High School futsal athletes use white rice as a staple food. Other staple foods still consumed are bread and noodles.

Sports nutrition is needed by athletes in various sports, such as research (Agustin, Indra, & Afriani, 2018; Cahya Nadira, 2023) The combination of intensive training and proper nutritional intake can shape athletes' body morphology for the better. Athletes with an anthropometric structure or somatotype and body composition that is suitable for their sport tend to show better sports performance. Proper diet management can improve athlete performance. Adequate protein intake can support athlete performance. Based on the results of research on the frequency of use of side dishes, it is known that chicken is consumed 2 times every day by futsal athletes of SMA Negeri Olahraga Riau Province, beef is consumed by futsal athletes of SMA Negeri Olahraga Riau Province 1 time a week, fish is consumed by futsal athletes of SMA Negeri Olahraga Riau Province 6 times a week, eggs are consumed by futsal athletes of SMA Negeri Olahraga Riau Province 4 times a week, tempeh is consumed by futsal athletes of SMA Negeri Olahraga Riau Province 3 times every day, tofu is consumed by futsal athletes of SMA Negeri Olahraga Riau Province 3 times every day, food ingredients consumed. Side dishes are rarely consumed by SMA Negeri Olahraga Riau Province futsal athletes, but side dishes are often consumed such as fish and chicken.

Conclusion

Based on the results of research and data analysis, the researcher can draw the following conclusions; 1) The description of the level of nutritional knowledge is high. This is indicated by those in the very high category 1 (6.7%), high category 13 (86.7%), sufficient category is 1 (6.7%), and low category 0. 2) The food consumption pattern of futsal athletes of SMA Negeri

Olahraga Riau Province seen from the frequency of use of food ingredients shows that from the results of the study it can be concluded that the staple food consumption pattern of futsal athletes of SMA Negeri Olahraga Riau Province is white rice. The consumption pattern of rice substitutes is bread; side dishes are fish and chicken; vegetables are spinach and kale; fruits are; papaya, banana, and watermelon. Futsal athletes of SMA Negeri Olahraga Riau Province should apply the nutritional knowledge gained from the school so that consumption patterns are even better.

This study is limited to a survey of nutritional knowledge and consumption patterns of Riau Province Sports State High School futsal athletes only and cannot be generalized to other branch athletes and other schools so this study still has other gaps or research gaps. Future research can focus on athlete nutrition, night sleep time, training load and achievement in their respective branches.

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Conflict of interests
There is no conflict of interest

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Information about the authors:

Dr. Sasmarianto., M.Pd., S.M: sasmarianto@edu.uir.ac.id, https://orcid.org/0000-0003-0570-881X, Department of Physical Education, Health and Recration, Universitas Islam Riau. Indonesia

Nadyta Harisca., N.H: nadytaharisca@student.uir.ac.id, https://orcid.org/0009-0006-1803-0736, Department of Physical Education, Health and Recration, Universitas Islam Riau. Indonesia

Nagoor Meera bin Abdullah., N.M.A: nameera_ab2@yahoo.com.my, https://orcid.org/0000-0002-4073-4450, Department of Sport Science, Universiti Teknologi MARA, Shah Alam. Malaysia

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