THE EFFECT OF NUTRITION EDUCATION USING ROTARY WHEEL MEDIA ON KNOWLEDGE OF EATING ARRANGEMENTS IN SSB ATHLETES

Puteri Dwi Andita[1], Linda Riski Sefrina[2], Milliyantri Elvandari[3]

[1]Universitas Singaperbangsa Karawang, Nutrient, Karawang, Indonesia
[2]Universitas Singaperbangsa Karawang, Nutrient, Karawang, Indonesia
[3]Universitas Singaperbangsa Karawang, Nutrient, Karawang, Indonesia

∗Coressponding Author. Email: 2210631220039@student.unsika.ac.id
*Email Author: 2210631220039@student.unsika.ac.id, linda.riski@fkes.unsika.ac.id, milly.elvandari@gmail.com

Abstract
Football is a type of sport that is popular among various ages and levels of society. It is very important to pay attention to food management for football athletes, so it is necessary to plan and pay attention to the timing of administration according to the stages of the period, both before, during, and after the match. Knowledge about nutrition is not only crucial for nutritionists but is also important for the wider community, including athletes. This research aims to determine the effect of providing education on athletes' knowledge regarding eating arrangements before competing. The research design used was a quasi-experimental one-group pre and post-test. The population of this study was football athletes at SSB Kancil Mas Karawang, and the total sample was 23 people who were selected using purposive sampling techniques. The research instruments used consisted of a questionnaire, a rotating wheel, a stature meter, and scales. Data analysis used univariate and bivariate analysis with the Wilcoxon statistical test type. The research results show that there is a significant influence of nutrition education on knowledge regarding eating arrangements for SSB Kancilmas Karawang athletes ($p < 0.05$).
Keywords: Athletes, nutrition education, eating management, knowledge

INTRODUCTION

Football is one of the most popular sports among other team sports because of its easy-to-understand way of playing and every year always gets the highest rating on television broadcasts (Wijaya et al., 2021). Football is a type of sport that is widely loved by various age groups and levels of society. Every soccer player is required to have the ability to master the techniques needed in the game, such as ball-kicking techniques, dribbling techniques, and other techniques (Fakhri & Welis, 2021). Athlete coaching can be provided from the provincial level to the city or district level from a young age. One of the efforts to develop the ability to play football for Indonesian children can be done by participating in Football Schools (SSB) (Tasyafa et al., 2024). The existence of football clubs and matches with different age groups is believed to be able to help athletes to show better performance (Ismikhadijah et al., 2024).

The performance of athletes in matches is determined based on four components, namely physical, tactical, technical, and psychological (Efendi, 2017). Athletes are often found to experience excessive anxiety when competing, which disrupts the condition of the athlete's digestive system, such as loss of appetite. Meanwhile, an athlete needs adequate nutritional intake as a performance booster when competing. Efforts to improve athletes' performance start from the selection of the right nutrition so that they can meet their needs during the competition (Efendi, 2017). In general, the food needs for athletes are certainly different from people in general, although there is no special food for athletes to improve their achievements, but the daily food for athletes will be more than those who do not exercise (Fakhri & Welis, 2021). Football players do intensive physical activity, so the energy required by athletes is about 4,500 Kcal or 1.5 times that of the average normal adult (Tasyafa et al., 2024)

Eating arrangements for football athletes are very important to consider, so it is necessary to design and pay attention to the timing of the administration according to the stages of the period both before, during, and after the match (Akshan et al., 2022). The main benefit of consuming food before a match is to prevent hunger for athletes during competitions. Some dietary guidelines that athletes need to pay attention to before competing are that it is recommended to consume snacks, foods that are high in carbohydrates and protein and low in fat. The selection of athlete nutrition is supported by knowledge about the quality and quantity of the types of nutrients of each individual according to their sport (Sari et al., 2020). The amount and type of food intake are direct factors that can affect nutritional status. Nutritional status is usually defined as a state that results from a balance between the intake of nutrients obtained from food and a number of nutrient needs needed by the body for metabolic processes (Nur et al., 2023).

A problem that is not uncommon is the nutritional intake of athletes which is still not optimal overall. This is due to the lack of insight and understanding of athletes in terms of food selection and eating arrangements. Knowledge about nutrition is not only crucial for nutritionists but also important to be mastered by the wider community, including athletes. Providing education is one of the effective methods of delivering information to improve a person's knowledge, behavior, and attitude (Puspaningtyas, 2018). Karawang is one of the districts that already has a quality Football School (SSB). SSB Kancil Mas is one of the Football Schools with great potential to produce talented and professional athletes. In the form of efforts to increase athletes' knowledge and insight about nutrition science, education and counseling activities can be the first step in improving the nutrition of athletes so that the achievements achieved will be even better. Based on this description, the researcher is interested in conducting research related to the effect of providing education on knowledge of meal management before competing.

METHODOLOGY

This study uses a quasi-experimental pre and post test without control group research design.This research was conducted from September to October 2024 at the Karawang Moksen Field. The population of this study is all football athletes at SSB Kancilmas Karawang totaling 108 athletes. The research sample was 23 athletes who were selected using the purposive sampling technique with inclusion criteria, namely athletes with a birth year of 2012 (U-12), willing to be respondents, and committed to participating in all activities until completion by filling out an informed consent sheet. Meanwhile, the exclusion criteria are athletes who are not present at research activities.

The implementation of this research was carried out offline, starting with asking athletes to fill out a questionnaire on meal arrangements before competing which contains 8 questions to see the level of knowledge of athletes. Furthermore, the implementation of education and counseling sessions was carried out by way of *group discussion* with *leaflet* aids and spin *wheel media* for 30 minutes. After participating in a series of educational activities, athletes were asked to fill out a questionnaire again.

The instruments needed in this study are questionnaires and rotary wheels. The research questionnaire is the result of a modification of the research (Kurnia, 2020). The level of nutrition knowledge is categorized as good if the yield value $\geq 75\%$, sufficient if it is 56-74% and less if the value is $\leq 55\%$ (Indradewi, 2020). The calculation of nutritional status is categorized based on z-score results (BMI/U) with category divisions including Malnutrition with z-score results ($<-3SD$), Undernutrition ($-3SD$ to $<-2SD$), Normal ($-2SD$ to $+1SD$), Overnutrition ($+1SD$ to $+2SD$), and Obesity ($>+2SD$) (Ministry of Health of the Republic of Indonesia, 2020). The data that has been collected is analyzed using variate and bivariate uni-analysis. Univariate analysts use frequency distribution tests while bivariate analyses use Wilcoxon tests to find out whether or not knowledge increases before and after education.

RESULTS

Age and nutritional status are the characteristics of the respondents used in this study.

Table 1. Respondent Characteristics

Characteristics	n	%
Age		
11 years old	20	87
12 years	3	13

Nutritional Status		
Malnutrition	0	0
Malnutrition	0	0
Good nutrition	17	73,9
More nutrition	5	17,4
Obesity	1	4,3

Based on table 1, it can be described that of the 23 respondents who were used as a sample of this study, most of the respondents were 11 years old (87%). Meanwhile, based on the characteristics of nutritional status, the category of good nutrition is the nutritional status that has the most respondents, namely 17 respondents (73.9%).

Table 2. Characteristics of Respondents' Knowledge Before and After Being Given Media

Variabel	Pre-test		Post-test	
	n	%	n	%
Knowledge				
Less	6	26,1	3	13
Enough	7	30,4	4	17,4
Good	10	43,5	16	69,6
Total	23	100	23	100

Table 2 shows the results of a comparison of the categories of knowledge level of the athlete before and after being given education on meal arrangements before the competition. The number of athletes with a good level of knowledge increased from 10 respondents (43.5%) to 16 respondents (69.6%) after education.

Table 3. The Effect of Nutrition Counseling on Knowledge of Eating Arrangements Before Competing Athletes

Pengetahuan	n	Min	Max	Mean±SD	p-value
Pre-test	23	50	87,5	67,9±15,4	0,044
Post-test	23	37,5	100	77,2±17,5	

The results of the Wilcoxon test are presented in table 3, which shows that the average pre-test result is 67.9 and the average post-test result is 77.2 with a p-value < 0.05.

So it can be interpreted that there is an influence of nutrition education on athletes' knowledge about eating arrangements before competing.

DISCUSSION

Based on the research that has been conducted, it can be found that the majority of respondents' nutritional status is good nutrition status (87%), but there are still respondents with the categories of overnutrition status (17.4%) and obesity (4.3%). Nutritional status is one of the factors that is directly influenced by a person's food intake (Akshan et al., 2022). The level of adequacy of nutritional intake can be seen from the amount of nutritional intake consumed by the body according to the level of its needs. According to (Masodah & Afifah, 2022), a well-adequate nutritional intake is the main requirement in obtaining the best physical condition of athletes and in order to achieve maximum achievement.

Based on the results of the Wilcoxon test in table 3, there was a significant influence between the provision of nutrition education using rotary wheel media on the knowledge of SSB Kancil Mas Karawang athletes regarding athletes' eating arrangements (p-value<0.05). This is in line with the research of Puspaningtyas et al (2019), which showed a significant increase in the knowledge of SSB Real Madrid athletes after nutritional education was carried out. Nutrition education is an educational approach as an effort to increase knowledge about nutrition, the formation of healthy attitudes and behaviors (Safitri & Fitranti, 2016). Education can be done using the provision of educational media and various methods.

This research uses the innovative media of the rotary wheel as an additional medium when providing education. During educational activities, most of the respondents were quite active to ask and answer questions in spinning wheel games. The use of educational media has a positive influence on increasing knowledge in the target group (Dewi et al., 2022). The additional use of innovative media or educational games in providing interesting education tends to make the target group interested in participating in educational activities. Interventions in the form of games can have a significant impact on improving knowledge in groups of children (Amelia et al., 2019). Based on research conducted (Hidayah, 2021), it is shown that interventions using spinning wheel games in children can improve balanced nutrition knowledge compared to leaflet media.

Rotary wheel media as an educational tool has been proven to be able to attract the attention of participants, facilitate the understanding of the material, and increase the memory of the information conveyed. This is in line with constructivist learning theory which states that learning will be more effective if students are actively involved in the learning process, both cognitively and emotionally. With a communicative and gamifiable approach, athletes are more motivated to

understand the importance of setting the right diet before competing.

Knowledge of pre-match eating arrangements is very important for athletes, as it can affect energy, concentration, and performance during matches. This increased understanding will have a positive impact on healthier and more structured eating habits, as well as support the achievement of optimal performance when competing.

CONCLUSION

Based on the results of the study, it can be concluded that the provision of nutrition education using rotary wheel media has a significant influence on increasing knowledge about eating arrangements before competition in SSB Kancilmas Karawang athletes. In the future, it is recommended to develop and utilize educational media that is interesting, communicative, and in accordance with the characteristics of early childhood students. Media such as rotary wheels have been proven to increase the attractiveness and effectiveness of material delivery.

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