PERCEIVED IMPACT OF NUTRITIONAL PRACTICES ON SPORTS PERFORMANCE OF ATHLETES IN KWARA STATE UNIVERSITY, MALETE

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Abstract

This study investigated the perceived impact of nutritional practices on sports performance of athletes in Kwara State University, Malate. This study sought to know the impact of meal timing, hydration status and dietary quality on athletic performance among university athletes in Kwara State, Malete. The research design adopted for this study was a descriptive survey research design. The population of this study includes all the athletes of Kwara State University, totaling 131. Research instrument is a researcher-constructed questionnaire. The instrument was validated and tested for reliability using split half method. The reliability co-efficient of the instrument was 0.79. Method of Data Analysis, data gathered was analysed using percentage and frequency count, the research questions were analyse using mean and standard deviation. The null hypotheses were analysed using simple t-test and tested at 0.05 level of significance.

Keywords: Nutrition, Practices, Sports, Performance, Athletes.

Introduction

Nutrition has been perceived as an integral component of sport performance since the time people began to participate in sports competition. The progress in understanding of human metabolism and exercise physiology made clear in the last few decades that manipulation of nutrient intake had the potential to positively influence sport performance, resulting in and explosion of products with specific applications to exercising individuals.

Burke (2015), strategies to optimize sports performance can be achieved by addressing various factors related to nutrition that can cause fatigue and deterioration in the outputs of performance (power, strength, agility, skill, and concentration) throughout or towards the end of the sporting event. These factors include, but are not limited to, dehydration, electrolyte imbalances, glycogen depletion, hypoglycemia, gastrointestinal discomfort/upset, and disturbances to acid–base balance. Fluids or supplements consumed before, during, or in the recovery between sessions can reduce or delay the onset of these factors. Strategies include increasing or re-placing key exercise fuels and providing substrates

to return the body to homeostasis or further adapt to the stress incurred during a previous exercise session. In some cases, pre-event nutrition may need to redress the effects of other activities undertaken by the athlete during event preparation such as dehydration or restrictive eating associated with "making weight'' in weight category sports. A secondary goal is to achieve comfort throughout the event, avoiding feelings of hunger or discomfort and gastrointestinal upsets that may directly reduce the enjoyment and performance of exercise and interfere with ongoing nutritional support.

Nutrition goals and requirements are not static. Athletes undertake a periodized program in which preparation for peak performance in targeted events is achieved by integrating different types of workouts in the various cycles of the training calendar (Deakin, Kerr & Boushey, 2015). Nutrition support also needs to be periodized, taking into account the needs of daily training sessions (which can range from minor in the case of ''easy'' workouts to substantial in the case of high-quality sessions (high intensity, strenuous, or highly skilled workouts) and overall nutritional goals.

Nutrition plans need to be personalized to the individual athlete to take into account the specificity and uniqueness of the event, performance goals, practical challenges, food preferences, and responses to various strategies. A key goal of training is to adapt the body to develop metabolic efficiency and flexibility while competition nutrition strategies focus on providing adequate substrate stores to meet the fuel demands of the event and support cognitive function. Energy availability, which considers energy intake in relation to the energy cost of exercise, sets an important foundation for health and the success of sports nutrition strategies. The achievement of the body composition associated with optimal performance is now recognized as an important but challenging goal that needs to be individualized and periodized. Care should be taken to preserve health and long-term performance by avoiding practices that create unacceptably low energy availability and psychological stress.

Athlete sport performance is influenced by athlete sports foods and supplements which claim to enhance sports performance (https://doi.org/10.1016/j.cophys.2019).

Sports supplements can be grouped, sports foods which provide a practical form of nutrients to meet sports nutrition goals; medical supplements which may be needed to prevent or correct nutrient deficiencies that occur in athletes, and the larger category of performance

supplements which claim either to directly enhance sports capacity or to support activities that allow the athlete to train hard, recover, achieve physique goals or reduce the risk of illness and injury. While controlled scientific trials and meta-analyses help to provide information about the general use of performance supplements, most high-performance athletes are more interested in real-life issues that are hard to encapsulate (detecting benefits that are meaningful to the outcomes of sporting competition, accounting for the use of several supplements in combination or the use of same supplement over successive events).

Statement of the Problem

Despite the recognized importance of proper nutrition for optimal sports performance, there is a lack of understanding of how athletes in Kwara State University, Malete, perceive the impact of specific nutritional practices on their performance. This gap in knowledge limits the effectiveness of interventions aimed at improving athlete nutrition and, consequently, their athletic outcomes.

This study aims to address this gap by investigating the perceived impact of three key nutritional practices - meal timing, hydration status, and dietary quality - on the sports performance of athletes in Kwara State University. By understanding how athletes perceive the influence of these practices on their performance, we can develop targeted interventions that are more likely to be adopted and lead to improved athletic outcomes. The study will contribute to the existing knowledge on sports nutrition and provide recommendations for improving the nutritional practices of athletes in Kwara State University.

Purpose of the Study

The main purpose of this study is to examine the perceived impact of nutritional practices on sports performance of athletes in Kwara State University. Specifically, the study sought to examine:

1. Perceived impact of meal timing on sports performance among university athletes in Kwara State.
2. Perceived Impact of hydration status on sports performance among university athletes in Kwara State.
3. Perceived impact of dietary quality on sport performance among university athletes in Kwara State.

Research Questions

The following research questions were raised to guide the study.

1. What is the perceived impact of meal timing on sports performance among university athletes in Kwara State?

2. How does hydration status influence sports performance among university athletes in Kwara State?
3. What is the impact of dietary quality on sports performance among university athletes in Kwara State?

Research Hypotheses

The following null hypotheses were tested at 0.05 level of significance.

1. There is no significant perceived impact of meal timing on sports performance among university athletes in Kwara State based on earlier and late.
2. There is no significant perceived impact of hydration status on sports performance among university athletes in Kwara State based on high and lower.
3. There is no significant percieved impact of dietary quality on sports performance among university athletes in Kwara State based on fruits/vegetables and processed foods.

Methodology

A descriptive research design of survey type was used. The population of the study consists of all the athlete of Kwara State University, totaling 131. Based on the small size of the respondents of the study the entire population was selected. A self-structured questionnaire that was validated and tested for reliability was used for data collection. The questionnaire was divided into two (2) sections. Section A contained question items that are constructed to provide information on the research questions and section B contained hypotheses. The respondents were expected to respond to the items using Always, Often, Sometimes, and Never, rated 4,3,2 and 1 respectively.

The instrument was validated by three experts in the department of Human Kinetics and expert in test and measurement for face and content validity. To determine the reliability of the instrument (questionnaire) a trial test was done using twenty (20) students drawn from three departments in University of Ilorin. Split-half method of reliability was used to determine the reliability coefficient of the instrument which was 0.79.

Quantitative data gathered through a questionnaire allowed for quantitative analysis. The demographic data was analysed using percentage and frequency count, the research questions was analysed using mean and standard deviation. The null hypotheses were analysed using on sample t-test at 0.05 level of significance.

Answering of the Research Questions

Research Question 1: What is the perceived impact of meal timing on sports performance among university athletes in Kwara State?

Table 1: Mean and standard deviation of responses on the impact of meal timing on sports performance.

S/N	Item Statements	$\overline{X}$	SD
1.	I eat breakfast before my morning training sessions	3.39	0.58
2.	I avoid eating large meals within two hours before my training sessions or competitions	2.63	0.75
3.	I eat a balanced meal that contains carbohydrates, protein and fat before my training sessions or competitions	3.48	0.64
4.	I consume carbohydrates and protein during prolonged (>60 minutes) or high intensity training sessions or competitions.	2.90	0.75
5.	I plan my meals and snacks ahead of time to ensure optimal nutrition and performance.	3.08	0.52

p>0.05

Data in table 1 shows the mean and standard deviation of responses on the impact of meal timing on sports performance among university athletes. The table revealed that the respondents indicated sometimes and always for the constructs with mean ranging from 2.63 to 3.39. All the 5 constructs have standard deviation ranging from 0.52 to 0.75. This means that the responses of the respondents are not widespread as they are close to the mean. Table 4 has a ground calculated weighted average mean and standard deviation of 3.07 and 0.68 respectively. This implied that meal timing can improve athletes' sports performance (mean = 3.07, SD = 0.68).

Research Question 2: How does hydration status influence sports performance among university athletes in Kwara State?

Table 2: Mean and standard deviation of responses on how hydration status influence sports performance.

S/N	Item Statements	$\overline{X}$	SD
1.	I drink water before, during and after my training sessions or competitions.	3.40	0.59
2.	I drink fluids that contain electrolytes (such as sports drinks) when I sweat a lot or exercise in hot or humid conditions.	3.07	0.47
3.	I monitor the color and volume of my urine to assess my hydration status.	3.08	0.52
4.	I avoid drinking alcohol, caffeine or other diuretics that can dehydrate me.	3.11	0.64
5.	I drink water even when I am not thirsty.	3.05	0.55

Source: Field Survey, 2023

Data in table 2 shows the mean and standard deviation of responses on how hydration status influence athletes' performance in sports. The table revealed that the respondents indicated always for all the constructs with mean ranging from 3.05 to 3.40. All the 5 constructs have standard deviation ranging from 0.47 to 0.64. This means that the responses of the respondents are not widespread as they are close to the mean. Table 5 has a ground calculated weighted average mean and standard deviation of 3.21 and 0.59 respectively. This implied that hydration status could influence athletes' performance in sports (mean = 3.21, SD = 0.59).

Research Question 3: What is the impact of dietary quality on sports performance among university athletes in Kwara State?

Table 3: Mean and standard deviation of responses on the impact of dietary quality on sports performance.

S/N	Items	$\bar{X}$	SD
1	I eat a variety of foods from different food groups every day.	3.26	0.60
2	I eat more fruits and vegetables than processed foods or sweets	3.27	0.53
3	I eat healthy fats instead of trans fats or saturated fats.	3.57	0.61
4	I limit my intake of added sugars, salt and alcohol.	3.44	0.71
5	I choose foods that are fresh, natural and minimally processed.	3.11	0.75

Source: Field survey, 2023

Table 3 shows the mean and standard deviation of responses on the impact of dietary quality on sports performance. The table revealed that the respondents indicated always, sometimes and often to the constructs with mean ranging from 3.11 to 3.57. All the 5 constructs have standard deviation ranging from 0.53 to 0.75. This means that the responses of the respondents are not widespread as they are close to the mean. Table 7 has a ground calculated weighted average mean and standard deviation of 3.33 and 0.64 respectively. This implied that dietary quality has impact on sports performance (mean = 3.33, SD = 0.64).

Test of Hypotheses

The null hypotheses of the study were tested using independent sample t-test at 0.05 level of significance. The summary of the test of hypotheses are presented in table 6 to 8 as follows:

H_{O1}: There is no significant impact of meal timing on sports performance among university athletes in Kwara State**.**

Table 4: Summary of t-test of the difference between the mean ratings of meal timing and athletes' sports performance.

Time	N	Mean	SD	t-cal	df	p-value	Decision
Earlier	81	3.21	0.82				
				0.406	129	0.685	Not Rejected
Late	50	3.18	0.65				

p>0.05

Table 4 showed that there are 81 earlier mealtime respondents and 50 late mealtime respondents. The earlier mealtime respondents had mean and standard deviation of 3.21 and 0.82 respectively while late mealtime respondents had mean and standard deviation of 3.18 and 0.65, respectively. The calculated value of t was 0.406 (t_{390}= 0.406). The observed p-value was 0.685 which is greater than the fixed p-value of 0.05 (p>0.05). Therefore, the null hypothesis, was not rejected. This implied that there is no significant impact of meal timing on sports performance among university athletes in Kwara State based on earlier and late.

H_{O2}: There is no significant impact of hydration status on sports performance among university athletes in Kwara State.

Table 5: Summary of t-test of the difference between the mean ratings of hydration status and athlete sports performance.

Status	N	Mean	SD	t-cal	Df	p-value	Decision
Higher	81	2.77	0.81				
				1.300	129	0.195	Not Rejected
Lower	50	2.66	0.61				

Source: Field survey, 2023 ***p>0.05***

Table 5 showed that there are 81 respondents with higher hydration status and 50 respondents with lower hydration status. The higher status respondents had mean and standard deviation of 2.77 and 0.81 respectively while lower status respondents had mean and standard deviation of 2.66 and 0.61, respectively. The calculated value of t was 1.30 (t_{390}= 1.30). The observed p-value was 0.195 which is greater than the fixed p-value of 0.05 (p>0.05). Therefore, the null hypothesis, was not rejected. This implied that there is no significant impact of hydration status on sports performance among university athletes in Kwara State based on higher and lower.

H_{O3}: There is no significant impact of dietary quality on sports performance among university athletes in Kwara State.

Table 6: Summary of t-test of the difference between the mean ratings of dietary quality and athlete sports performance

Quality	N	Mean	SD	t-cal	Df	p-value	Decision
fruits and vegetables	81	2.79	0.35	0.508	129	0.613	Not Rejected
processed foods	50	2.76	0.38				

Source: Field survey, 2023 ***p>0.05***

The data in Table 6 showed that there are 81 respondents on fruits and vegetables and 50 respondents on processed foods. The fruits and vegetables respondents had mean and standard deviation of 2.79 and 0.35 respectively while processed foods respondents had mean and standard deviation of 2.76 and 0.38, respectively. The calculated value of t was 0.58 (t_{390}= 0.58). The observed p-value was 0.613 which is greater than the fixed p-value of 0.05 (p>0.05). Therefore, the null hypothesis, was not rejected. This implied that there is no significant impact of dietary quality on sports performance among university athletes in Kwara State based on fruits and vegetables and processed foods

Discussion of Findings

The study was conducted to examine the perceived impact of nutritional practices on sports performance of athletes in kwara State University. The discussion is based on three research questions and three hypotheses. The first finding of the study revealed that the responses of the respondents are not widespread as they are close to the mean. This implied that meal timing can improve athletes' sports performance. The first finding of the study is in line with Burke (2015) who stated that, strategies to optimize sports performance can be achieved by addressing various factors related to nutrition that can cause fatigue and deterioration in the outputs of performance. The null hypothesis tested for this further implied that there is no significant impact of meal timing on sports performance (t_{390}= 0.406).

The second finding of the study revealed that the responses of the respondents are not widespread as they are close to the mean as it calculated weighted average mean and standard deviation of 3.21 and 0.59 respectively. This implied that hydration status could influence athletes' performance in sports. The finding of the study corroborates with that of (Burke & Hoffman et al., 2018) who stated that, there is ample evidence of the benefits of hydration, carbohydrate fueling, and electrolyte replacements during sports events, without water, athlete can survive only for days. The null

hypothesis tested for this further revealed that there is no significant impact of hydration status on sports performance. The calculated value of t was 1.30 (t_{390}= 1.30).

The third finding in table 8 revealed that the respondents indicated always, sometimes and often for all the constructs with mean ranging from 3.57 to 3.11, this means that the responses of the respondents are not widespread as they are close to the mean and has a calculated weighted average mean and standard deviation of 3.33 and 0.64 respectively. This implied that dietary quality has impact on sports performance. The finding of the study corroborates with that of Thomas, Erdman and Burke (2016), who stated that dietary quality is considered nutritional ergogenic aids, and the ones intended for the improvement of an athletic performance and faster recovery are known as sports supplements. The null hypothesis tested for this further revealed that there is no significant impact of dietary quality on sports performance. The calculated value of t was 0.58 (t_{390}= 0.58).

Conclusion

1. There is no significant impact of meal timing on sports performance among university athletes in Kwara State based on earlier and late.
2. There is no significant impact of hydration status on sports performance among university athletes in Kwara State based on higher and lower.
3. There is no significant impact of dietary quality on sports performance among university athletes in Kwara State based on fruits and vegetables and processed foods.

Recommendations

1. Sports Administrators should organize seminars or workshop to educate athletes on meal timing, underscoring the significance of consuming meals at optimal times to enhance sports performance.
2. Coaches should give guidance on fluid intake during training and competition to ensure that athletes are well-informed about hydration practices to enhance sports performance.
3. Sport Nutritionist should organize programs that will broaden athletes' understanding on dietary choices, particularly emphasizing the benefits of a balanced diet rich in fruits, vegetables, and nutrient-dense foods to enhance sports performance.

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