A Study of the Nutritional behavior of Basketball Players in Different Playing Centers of the Western Region Clubs in KSA

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Abstracts: Experts in sports nutrition know that diet significantly influences athletic performance and that all basketball players should adapt specific nutritional strategies before, during and after training and competition to maximize their mental and physical performance. Therefore, this study aimed to identify the nutritional behavior of basketball players in the western region clubs in the Kingdom of Saudi Arabia (KSA) in the premier league according to the different playing centers of the players. The researcher used the descriptive approach for its suitability to the nature of this study, where a random sample of (48) players was selected from clubs in the western region (Madina / Jeddah), and the study tool consisting of five axes was applied to the sample members during the 2020/2021 sports season. There is a discrepancy in the nutritional behavior of basketball players in the western region, as well as the existence of a correlation between the playing centers and some food behavior axes. There is an existence of a correlation relationship in some aspects of nutritional behavior and playing centers for basketball players in the western region of the KSA.

1. INTRODUCTION AND STUDY PROBLEM

There is no doubt that nutrition is one of the applied sciences that is relied upon in sports training, as nutrition has been linked to the competitive sports field during its multiple stages, whether in the training or competition stage. In training, nutrition plays an important role in the ability to sustain training during rapid recovery, and in nutrition planning it is also necessary to take into account the nutritional behavior of athletes, and athletes' diets are just as important as training programs, as sound nutritional programs at each stage of the sports season have a very important impact in improving the training process, as well as showing the importance of the nutritional programs of the athletes in the camps, before, during and after the competition, all must be done under the supervision and through the nutritionist so that technical training processes are translated into results and levels achieved by these athletes. From this point of view, the problem of the study appears, the researcher thought about studying the nutritional behavior of basketball players in the clubs of the western region in Saudi Arabia as one of the aspects of the training process and assistance in proper planning and development of nutritional programs during the sports season, which can enrich the training process and improve the general sports training status of basketball players in these clubs 1.

Stated that athletes' diet plays a fundamental role in athletic performance, regardless of the type of sporting activity practiced 24. However, both coaches and players have misunderstandings regarding nutritional information, concepts nutrition attitudes, and the relationship between nutrition and speed recovery from injury, nutrition and training, behaviors and nutritional habits. Therefore, nutritional programs for athletes are no less important than training programs, as the proper nutritional programs at a certain stage are more important than training programs, especially in team games, and also shows the importance of nutritional programs for athletes in the camps before, during and after the competition, all of this must be done under supervision and through nutritionist so that technical training processes are translated into results and levels achieved by these athletes11 16, 28.

Studies of 25, 9 and 22, have proven over the years since the beginning of the interest in sports nutrition that proper nutritional behavior is closely related to a high level of performance, whether performance in training or in competition because the proper nutritional programs lead to high level of athletic performance.

Indicates that due to the huge leap that occurred in the nature of technical performance in the current basketball game and the huge increase in training loads, whether in terms of intensity or size, the coach had to be aware of

the biological effects resulting from the training loads on the players. So, he can legalize those loads to ensure their positive effects on their players, taking into account the organization of proper healthy nutrition 3, 10. Since the coaches are the main source of the nutritional programs for the players, the lack of information in the field of nutrition for the coaches negatively affects the level of the players 5, 11.

Individuals can be guided on how to form balanced diets and introduce food alternatives by raising awareness and spreading the proper nutritional culture. Wrong nutritional behaviors are difficult to change unless over a long period of time 7. Despite the lack of special nutrition to raise the level of athletic performance,20, citing Harra, suggest that proper athlete nutrition is a foundation for reaching high sports levels. In addition, the wrong nutrition leads to early fatigue and public health disorders.

By measuring the degree of individual nutritional development by self-evaluation, where the individual knows how to do a quick intellectual assessment for each meal he eats and for each type of food he consumes to measure them with many important variables such as the nutritional value, it is possible to continue developing the nutritional behavior of athletes correctly and to measure the extent of the development of nutritional habits at the individual and collective levels 2, 17.

Indicates that basketball is one of the games that is characterized by a multiplicity of skillful and tactical performance, and that the basketball player must master playing in different positions, but here come the physical and skill elements and physical specifications that control the determination of the players' positions, as each player has skills that express his performance in achieving the tasks assigned to him on the field and in the center assigned to him 6.

One of the important foundations that the coach must take into account is the condition of the players and their capabilities when designing training programs, as the basketball game consists of five centers and five players inside the stadium 9.

Many sources and researchers, including 3, 19, 15, 21, 16, and 30, divide basketball's playing centers into five categories:

Center (1) Point Guard / Center (2) Shooting Guard / Center (3) Small Forward

Center (4) Power Forward / Center (5) Center

Each of these centers has its own set of skill, physical, and biological needs, which are dictated by the nature of the center.

1.1. Objectives of the Study

The research aims to study the nutritional behavior of basketball players in different playing centers in the western region of the Kingdom of Saudi Arabia through:

● Identifying the nutritional behavior of basketball players in different playing centers in the western region clubs of Saudi Arabia.

● Comparing the nutritional behavior of basketball players with different playing centers in the western region clubs in Saudi Arabia.

● Recognizing the relationship between nutritional behavior and the different playing centers in the western region clubs of Saudi Arabia.

1.2. Study Hypotheses

- There is a discrepancy in the nutritional behavior of different playing centers in the western region of the Kingdom of Saudi Arabia.

- There is a correlation between nutritional behavior and different playing centers in the western region of the Kingdom of Saudi Arabia.

1.3. Study Procedures: Study Approach

The researcher used the descriptive approach in order to suit the nature and objectives of the research.

1.4. Fields of Study

1.4.1. Spatial Domain

The study was applied to first-class clubs in the Western Region (Medina - Jeddah) in the Kingdom of Saudi Arabia.

1.5. Time Domain

The study was conducted from 2/10/2020 to 2/11/2020.

1.6. The Study Sample

The research sample was selected from basketball players from the participating teams in the Saudi League in the Western Region, Medina, Jeddah, which is as shown in the following table.

Table 1. Percentage of the Distribution of the Study Sample Members to the Targeted Clubs in the Study.

A	Club Name	Number of Players	Percentage
1	Al-Ansar	12	25%
2	Ohod	12	25%
3	Al-Ahli	9	18.75%
4	Al-Fateh	8	16.17%
5	Al-Nassr	7	14.58%
Total		48	100%

1.7. Data Collection Tools

The researcher used the questionnaire Appendix No. (1) as a main tool for collecting data and information through which it is possible to know nutritional behavior. The questionnaire included (5) axes as shown in Table (2) where Table (2) shows the total and actual total of the phrases, and the number of positive and negative phrases and omitted phrases in each of the nutritional behavior axes.

Table 2. Shows the Positive, Negative, Omitted, Total and Actual Phrases in Each Axis of Nutritional Behavior.

A	Axes	Number of phrases				
		Positive	Negative	Omitted	Total	Actual total
1	Meal planning behavior for athletes and recovery	15	2	3	20	17
2	Nutritional behavior of nutrients	6	2	2	11	8
3	Behavior of balanced diet and nutritional needs of athletes	11	0	2	13	11
4	Nutritional supplement behavior	9	0	3	12	9

5	Malnutrition, sports injury behavior and training environment	13	5	4	22	18
	Total	54	9	14	77	63

1.8. Scientific Transactions of the Questionnaire Form

The scientific coefficients of the questionnaire (validity - reliability) were calculated.

First: Validity: Validity was calculated by (content validity, internal consistency validity coefficient).

Content validity: The researcher has identified, studied and analyzed the sources of the related studies and informed them of the references related to the topic of the research, as well as access to the international information network (Internet) in the field of research. Despite the scarcity of studies closely related to the topic of the research, the researcher tried as much as possible to make the axes and phrases of the questionnaire closely related to the research in its ability to measure the topic of research.

1.9. Internal Consistency Validity Coefficient

The researcher extracted the validity of the internal consistency by calculating the correlation coefficient of the phrase with the total sum of the axis to which it belongs. The phrase that did not achieve a significant internal consistency coefficient that satisfies the researcher reaching (0.521), was omitted at the level of (0.05).

Table 3. Internal Consistency Coefficient is the Correlation Coefficient of the Phrases with the Total Sum of the Axes to Which they Belong after Deleting the Degrees of the Phrases for the Axes of the Study N = 48.

A	Axes	Internal Consistency Coefficient
1	Meal planning behavior for athletes and recovery	0.57
2	Nutritional behavior of nutrients	0.66
3	The behavior of balanced diet and nutritional needs of athletes	0.80
4	Nutritional supplement behavior	0.80
5	Malnutrition, sports injury behavior and training environment	0.65

Note: * Significant at the level of 0.05 = 0.521.

It is clear from the phrases of the five axes that the coefficient of internal consistency has reached between (0.53, 0.85), and the researcher has agreed to accept the phrases in which the coefficient of internal consistency has reached (0.521), which are the phrases that achieve significance at the level of (0.05). Whereas, all the phrases that were less than this value were omitted in all axes, which did not reach their significance at the level (0.05).

1.10. Secondly, Reliability

Reliability was calculated using Cronbach's alpha coefficient.

The researcher calculated the stability of the questionnaire by calculating Cronbach's alpha coefficient for phrases related to the nutritional behavior axes.

Table 4. Cronbach's Alpha Coefficient for Nutritional Behavior Axes N = 48.

A	Axes	Cronbach Alpha Coefficient
1	Meal planning behavior for athletes and recovery	77.15
2	Nutritional behavior of nutrients	91.60
3	Behavior of balanced diet and nutritional needs of athletes	85.27
4	Nutritional supplement behavior	90.19
5	Malnutrition, sports injury behavior and training environment	74.21

As it is clear from Table No. (4) regarding the Cronbach's alpha coefficient of the questionnaire axes (nutritional behavior), that the Cronbach's alpha coefficient reached between (74.21, 91.60), this value is considered high for

the Cronbach's alpha coefficient, which confirms that the phrases of the nutritional behavior axes are homogeneous among each other, and that the axes phrases complete the construction of the axes themselves, and that any deletion or addition of any phrase in the axes could negatively affect the formation of the axes themselves.

1.11. Variables Distribution Moderation (Data)

To ensure that the sample is free from the defects of the distributions moderation the researcher calculated the arithmetic mean, standard deviation, skewness and kurtosis coefficient of the research sample in the basic variables, and the food behavior axes under study, which are as follows:

Table 5. Statistical Significance of the Basic Variables of the Research Sample N = 48.

Statistical Significance Basic variable		Measuring Unit	less Value	Greatest Value	Arithmetic Mean	Standard Deviation	Skewness Coefficient	Kurtosis Coefficient
Basic variables	Age	Year	18	34	25	4.74	0.25	-0.98
	Height	cm	168	202	186.08	8.79	0.21	-0.12
	Weight	kg	64	100	79.81	10.43	0.58	-0.80
	BMI	kg/m2	20.99	27.47	23.79	1.44	0.55	0.31

It is clear from Table (5) that the basic data of the total research sample is moderate, not scattered, and is characterized by a normal distribution of the sample, where the skewness coefficient ranged between (0.21 to 0.58). These values are close to zero, which confirms the moderation of the data for the basic variables.

Table 6. Arithmetic Mean, Standard Deviation, Skewness and Kurtosis Coefficient of the Research Sample in Nutritional Behavior Axes.

A	Statistical Significance Axes	Less Value	Greatest Value	Arithmetic Mean	Standard Deviation	Skewness Coefficient	Kurtosis Coefficient
1	Meal planning behavior for athletes and recovery	22	32	27.46	2.79	-0.15	-0.88
2	Nutritional behavior of nutrients	8	16	13	1.95	-0.74	0.36
3	Behavior of balanced diet and nutritional needs of athletes	15	22	19.33	1.83	-0.63	-0.31
4	Nutritional supplement behavior	10	18	14.45	2.16	-0.67	-0.41
5	Malnutrition, sports injury behavior and training environment	25	34	30.40	2.23	0.47-	-0.46

It is clear from Table (6) that the nutritional behavior axes of the research sample members follow a normal frequency distribution (the normal curve), where the skewness coefficient ranges between -0.63, -0.15), meaning that it does not exceed ±3, this gives a direct indication that the sample represents a moderate population, this indicates that the sample is free of defects from non-normal distributions.

The following steps were followed when applying the study:

● The researcher distributed a questionnaire on nutritional behavior to the players of each team, with an explanation of the way in which the phrases in each of the questionnaire's axes will be answered.

● The researcher filtered all the questionnaires and performed statistical treatments to extract the results.

1.12. Statistical Treatments

The researcher used statistical treatments to achieve the objectives and hypotheses of the research, which are as follows:

Arithmetic mean / Standard deviation / Skewness modulus / Kurtosis coefficient / Cronbach's alpha coefficient / Variance analysis / Pearson's simple correlation coefficient.

Table 7. Frequency, Percentage, and Chi-Square Value of Axis 1 Phrase, of the Athletes' Meal Planning Behavior and Quick Recovery.

A	Phrases	Yes		No		Chi-square	Arithmetic Mean
		Frequency	%	Frequency	%		
1	I make sure to take my need of table salt at least three hours before the competition to maintain the water balance and the acid-base balance of the blood	34	70.8	14	29.2	8.333	1.71
2	I make sure not to have protein in the pre-match meal	41	85.4	7	14.6	24.08	1.85
3	I take high-carb meals for several days before competitions	36	75	12	25	12.00	1.75
4	I eat 2-3 hours before training and competition	38	79.2	10	20.8	16.33	1.79
5	I make sure that the meal in the match day is as easy to digest and free from animal fats as possible	26	54.2	22	45.8	0.333	1.54
6	I make sure that the post-match meal contains most of the nutrients	29	60.4	19	39.6	2.083	1.60
7	I make sure to increase the number of meals while reducing their size during the competition period	39	81.2	9	18.8	18.75	1.81
8	I make sure to eat more carbohydrates while reducing the intensity of exercise in the days before matches	41	85.4	7	14.6	24.08	1.85
9	I don't drink water and fluids before the match	37	77.1	11	22.9	14.08	1.77
10	I make sure to avoid eating sugars and carbohydrates before exercising	41	85.4	7	14.6	24.08	1.85
11	I make sure to eat a meal after the competition as quickly as possible	33	68.8	15	31.2	6.750	1.69
12	I make sure to replace carbohydrates and fluids and avoid fatty meals after the competition ends	29	60.4	19	39.6	2.083	1.60
13	In the event that the duration of (training or competition) is more than an hour, I drink carbohydrate-rich drinks	37	77.1	11	22.9	14.08	1.77
14	I make sure to have carbohydrates instead of proteins and fats, especially during the competition period	34	70.8	14	29.2	8.333	1.71
15	I make sure to drink water and drinks that contain carbohydrates and minerals after completing the training or the match	27	56.3	21	46.7	0.750	1.56
16	After training or competition, i make sure to take salt and potassium tablets to replace the salts lost during performance	27	56.3	21	46.7	0.750	1.56
17	After training, i replace water with orange juice and eat bananas in order to restore the potassium lost with sweat	33	68.31	15	43.7	6.750	1.69

Note: * Significant chi-square at the level of $0.05 = 5.99$.

Table 8. Frequency, Percentage, and Chi-Square Value of the Second Axis Phrases: Nutrients Behavior.

A	Phrases	Yes		No		Chi-square	SMA
		Frequency	%	Frequency	%		
1	I make sure to take adequate amounts of proteins because they are important in building body tissues	27	56.3	21	46.7	0.75	1.56
2	I make sure to take adequate amounts of vitamin B to treat cases of fatigue and stress	36	75	12	25	12.00	1.75
3	I make sure to eat more vegetable fats than animal fats	25	52.1	23	47.9	0.08	1.52
4	I make sure I get my portion of complete and incomplete protein from animal sources	32	66.7	16	33.3	5.33	1.67
5	I make sure to have more meals containing vitamin D	33	68.31	15	43.7	6.75	1.69
6	I make sure to have more carbohydrates because of its important role in the nutrition of the athlete	30	62.5	18	37.5	3.00	1.63
7	I use more vegetable fats instead of animal fats	28	85.3	20	41.7	1.33	1.58
8	I make sure to provide my body with water or fluids before, during and after exercising	30	62.5	18	37.5	3.00	1.63

Note: * Significant chi-square at the level of 0.05 = 5.99.

Table 9. Frequency, percentage, and chi-square value of Axis 3 phrases: the behavior of balanced food and nutritional needs of players.

A	Phrases	Yes		No		Chi-square	SMA
		Frequency	%	Frequency	%		
1	I make sure to eat the required amount of the nutritional needs of the nutrients that must be taken in my daily meal	43	89.6	5	10.4	30.083	1.90
2	I make sure to eat large quantities of proteins to compensate for the damaged tissues	40	83.3	8	16.7	21.33	1.83
3	I make sure the meal is balanced in nutrients	36	75	12	25	12.00	1.75
4	I make sure that 50-60% of the total calories per day is carbohydrates and 20-30% fats.	32	66.7	16	33.3	5.33	1.67
5	I make sure to eat vegetables and fruits between meals	39	81.3	9	18.7	18.75	1.81
6	I make sure to take the mineral elements (iron, zinc, calcium and iodine) in big quantities	30	62.5	18	37.5	3.00	1.63
7	I keep my eating times as regular as possible	35	72.9	13	27.1	10.08	1.73
8	I maintain a nutritional balance between carbohydrates, proteins and fats in the meal	36	75	12	25	12.00	1.75
9	I make sure to eat dairy and its products so that the body gets the right amounts of calcium	31	64.6	17	35.4	4.08	1.65
10	Balanced nutrition helps me quickly return to the normal state after performing physical exertion	36	75	12	25	12.00	1.75
11	I make sure to have a balanced diet to prevent sports injuries	40	83.3	8	16.7	21.33	1.83

Note: * Significant chi-square at the level of 0.05 = 5.99.

Table 10. Frequency, Percentage, and Chi-Square Value of Axis 4 Phrases, Nutritional Supplements Behavior.

A	Phrases	Yes		No		Chi-square	SMA
		Frequency	%	Frequency	%		
1	I make sure to take nutritional supplements	27	56.3	21	43.8	7.50	1.56
2	I make sure to drink liquid carbohydrate sports drinks	34	70.8	14	29.2	8.33	1.71
3	I take amino acids in supplement form	34	70.8	14	29.2	8.33	1.71
4	I make sure to have Creatine in a controlled manner to increase muscle size and this reflects positively on athletic achievement	27	56.3	21	43.8	0.750	1.56
5	I make sure to take nutritional supplements in a regular way to improve the body's immune strength	28	58.3	20	41.7	1.33	1.58
6	I take vitamins and minerals to improve athletic performance	29	60.4	19	39.6	2.08	1.60
7	I take protein in the form of powders or liquids to	23	47.9	25	52.1	0.083	1.48

	supplement the diet					
8	If the food is not integrated or balanced, I take vitamin and mineral supplements	32	66.7	16	33.3	5.33	1.67
9	I take nutritional supplements as an alternative to banned sports stimulants	28	85.3	20	41.7	1.33	1.58

Note: * Significant chi-square at the level of 0.05 = 5.99.

Table 11. Frequency, Percentage, and Chi-Square Value of Axis 5 Phrases, in Malnutrition Diseases, Sports Injuries, and Training Environment.

A	Phrases	Yes		No		Chi-square	SMA
		Frequency	%	Frequency	%		
1	I suffer from health problems as a result of wrong eating habits	15	31.3	33	68.8	6.75	1.31
2	I eat a lot of food at one meal	8	16.7	40	83.3	21.33	1.17
3	I suffer from frequent bones injuries	24	50.0	24	50.0	0.00	1.50
4	I make sure to take vitamin D	22	45.8	26	54.2	0.33	1.46
5	I suffer from metabolic disorders due to hypothyroidism	26	54.2	22	45.8	0.33	1.54
6	I drink red tea immediately after a meal	38	79.2	10	28.8	16.33	1.79
7	I consume foods rich in iron	41	85.4	7	14.6	24.08	1.85
8	I make sure to take folic acid because of its importance in the production of red blood cells	43	89.6	5	10.4	30.08	1.90
9	I do not suffer from a lack of hemoglobin in the blood	44	91.7	4	8.3	33.33	1.92
10	I do not have an increase in body fat percentage	38	79.2	10	28.8	16.33	1.79
11	I suffer from digestive disorders and loss of appetite	36	75	12	25	12.00	1.75
12	I make sure to have more protein in diets to aid in the injury recovery process	29	60.4	19	39.6	2.08	1.60
13	I reduce fat and salt in food in case of arthritis	35	72.9	13	27.1	10.08	1.73
14	I make sure to have appropriate amounts of mineral salts to avoid muscle fatigue, which leads to injuries	42	87.5	6	12.5	27.00	1.88
15	I take appropriate amounts of water and fluids, especially during training, and during high physical exertion and hot weather, to maintain the body's water balance.	37	77.1	11	22.9	14.08	1.77
16	I drink high-calorie sports drinks in cold weather	38	79.2	10	28.8	16.33	1.79
17	I take more fat during low air temperature	42	87.5	6	12.5	27.00	1.88
18	In the case of training in places above sea level, i take big amount of carbohydrates in the nutritional content of the meal	37	77.1	11	22.9	14.08	1.77

Note: * Significant chi-square at the level of 0.05 = 5.99.

2. PRESENTATION AND DISCUSSION OF THE FINDINGS

The findings of tables (7-11) related to frequency, percentage and chi-square value in the nutritional behavior axes phrases, where (significant differences) were found, to treat most of the nutritional behavior axes phrases. The value of the chi-square varied between the phrases within the nutritional behavior axes, where the value of the chi-square ranged between (0.33 - 24.08) in Table No. (7) related to planning meals for players and restoring recovery, in the phrases (I make sure that the meal in the match day is as easy to digest and free from animal fats as possible), (I'm careful not to have protein in the meal preceding the match), and the value of the chi-square ranged between (0.8-12) in Table No. (8) regarding the nutritional behavior of nutrients, in the phrases (I make sure to take adequate amounts of vitamin B to treat cases of fatigue and stress), (I eat more vegetable fats instead of animal fats).

The value of the chi-square also ranged between (3-30.08) in Table No. (9) Regarding the axis of balanced food and the nutritional needs of players, in the phrases (I make sure to eat the required amount of the nutritional needs of the nutrients that must be taken in my daily meal), (I make sure to take the mineral elements (iron, zinc, calcium and iodine, in big quantities). The value of the chi-square ranged between (0.08 - 8.33) in Table No. (10) Regarding

the nutritional supplement axis, in my phrase (I make sure to drink liquid carbohydrate sports drinks / I take amino acids in the form of a food supplement) (I take protein in the form of powders or liquids to supplement the diet).

While the value of the chi-square ranged between (0-33.3) in Table No. (11) Related to the axis of malnutrition diseases, sports injuries and the training environment, through the two phrases (I suffer from frequent bones injuries), (I do not suffer from a lack of hemoglobin in the blood).

The researcher explains this difference between players in nutritional behavior as a result of the fact that sports nutrition is affected by the nutritional culture of coaches and players, which can serve as a guide and an essential incentive in changing the nutritional behavior of players. Where these findings agree with what was demonstrated by the studies of 1, 25, 10 and 22, which also show the interest in nutritional behavior that is closely related to high performance, whether this performance is in training or competition because healthy nutritional programs lead to a higher level of athletic performance.

The researcher also highlights an essential point: coaches are the primary provider of nutritional behavior for players. The lack of nutritional knowledge for coaches has a negative impact on the level of the players, according to the conclusions of the 11, 13, studies.

Table 12. One-Way Variance Analysis Between Different Playing Centers Under Study in Measurements of the Nutritional Behavior of Basketball Players in the Western Region of KSA.

A	Statistical Treatments / Measurements of Nutritional Behavior Axes	Variance Source	Freedom Degrees	Sum of Squares	Mean of squares	(f) Value	Significance Level
1	Meal planning behavior for athletes and recovery	Between Centers	2	149.84	74.92	15.6	0
		Inside Centers	45	216.08	4.8		
		Total	47	365.92			
2	Nutritional behavior of nutrients	Between Centers	2	94.44	47.22	25.43	0
		Inside Centers	45	83.57	1.86		
		Total	47	178			
3	Behavior of balanced diet and nutritional needs of athletes	Between Centers	2	20.35	10.17	3.36	0.04
		Inside Centers	45	136.32	3.03		
		Total	47	156.67			
4	Nutritional supplement behavior	Between Centers	2	111.38	55.69	23.14	0
		Inside Centers	45	108.28	2.41		
		Total	47	219.67			
5	Malnutrition, sports injury behavior and training environment	Between Centers	2	80.91	40.46	11.63	0
		Inside Centers	45	156.57	3.48		
		Total	47	237.48			

Note: * Significant chi-square at the level of 0.05 = 5.99.

Table 13. Significance of Differences between Different Playing Centers Under Study in the Measurements of the Nutritional Behavior Axes of Basketball Players in the Western Region of the KSA Using the Tukey HSD Test.

A	Measurements of nutritional behavior axes	Centers	SMA	Difference in Means Center 1	Center 2	Center 3
1	Meal planning behavior for athletes and recovery	Center 1	27.13		- 2.28772-*	1.99048*
		Center 2	29.42			*4.27820
		Center 3	25.14			
2	Nutritional behavior of nutrients	Center 1	13.07		-1.35439-*-*	2.06667*
		Center 2	14.42			*3.42105
		Center 3	11			
3	Behavior of balanced diet and nutritional needs of athletes	Center 1	18.6		1.50526*	0.47
		Center 2	20.11			1.03
		Center 3	19.07			

4	Nutritional supplement behavior	Center 1	15.07		0.56	*2.99524
		Center 2	15.63			**3.56015
		Center 3	12.07			
5	Malnutrition, sports injury behavior and training environment	Center 1	30.8		0.73	*2.37143
		Center 2	31.53			*3.09774
		Center 3	28.43			

The findings of Table No. (12) (13) regarding the statistical significance of the nutritional behavior axes between the different playing centers showed that there were statistically significant differences at the level (0.05) in most of the nutritional behavior axes in favor of the players of the center (2), where the calculated (f) value ranged between (3.36 to 15.60), all of which are greater than the tabulated value of (t) at level (0.05) = (1.99) with a significance level less than (0.05) in favor of center (2) players in all nutritional behavior axes, and the value of the lowest difference was (2.47 - 3.56) in the axes of behavior related to balanced food and nutritional needs of athletes, as well as the axis of special behavior of nutritional supplements.

The researcher attributed that this superiority of high-level players is due to the nature of the players of Center (2), where this center is characterized by the possession of its players physical and kinetic characteristics that distinguish it from other centers, which means that the players in this center are interested in information and nutritional behaviors because they have a vital and significant role in influencing the kinetic capabilities of players in center (2), as well as influencing the training side, believing in the important role of nutrition as an integral aspect of the training process, which in turn can lead to the advancement of any team's level and also achieve the required level of athletic achievement and this is in line with the findings of the study.

Where Murphy [23] explain the importance of estimating the nutritional needs of players, as any deficiency in nutritional needs and failure to follow the correct diet in proportion to nutritional behavior and every sporting activity, negatively affects their health and achieving high athletic levels. Balanced nutrition is also an important component of the sports training program. Training and nutrition are two very essential elements, nutrition for the athlete can be viewed from the two angles of nutrition for competition and nutrition for training.

This is what was proven by [10], [4] since the beginning of the interest in sports nutrition that proper nutritional behavior is closely related to a high level of performance, whether performance in training or in competition, because the proper nutritional programs, including the intake of vitamins and minerals, provide the best performance for the internal functions of the body, which is reflected on athletic performance. [8], quoting from BOIGEY, points out that the excess of the athletes' need for food is wrong because it leads to some problems, digestive and health disorders, leads to obesity and negatively affects the level of their performance in the training and competition stages [2].

Burke & Montqomery also mentions that the sports program, whatever its type, must always take into account the health condition, the type and quantity of food the player eats, and its nutritional value that can contribute to the development of his physical fitness, motor and planning skills [14], [3].

Thus, the first hypothesis of the research is achieved, which is a discrepancy in the nutritional behavior between different playing centers of basketball players in the Kingdom of Saudi Arabia.

Table 14. Correlation Matrix between Nutritional Behavior Axes and Playing Centers for Basketball Players in the Western Region of the Kingdom of Saudi Arabia (KSA).

Playing centers	Axes	Nutritional behavior of nutrients	Meal planning behavior for athletes	Behavior of balanced diet and nutritional needs of athletes	Nutritional supplement behavior	Nutritional behavior for recovery after physical exertion
Center 1	Nutritional behavior of nutrients	1	*0.509	-0.094	0.253	0.598**
	Meal planning behavior for athletes		1	0.136	0.321	**0.683

	Behavior of balanced diet and nutritional needs of athletes			1		**0.633	-0.261
	Nutritional supplement behavior					1	0.107
	Nutritional behavior for recovery after physical exertion						1
Center 2	Nutritional behavior of nutrients	1		-0.304	0.407-*	0.408*
	Meal planning behavior for athletes			-0.041	0.060-	-0.01
	Behavior of balanced diet and nutritional needs of athletes			1	0.357-	-0.112
	Nutritional supplement behavior				1	0.055
	Nutritional behavior for recovery after physical exertion					1
Center 3	Nutritional behavior of nutrients	1		0.427	0.603-*	0.27
	Meal planning behavior for athletes		1	0.057	0.304	*0.565
	Behavior of balanced diet and nutritional needs of athletes			1	0.101-	-0.008
	Nutritional supplement behavior				1	0.14
	Nutritional behavior for recovery after physical exertion					1

Note: * Significant at the 0.05 level = (0.205).

     ** Significant at the level of 0.01 = (0.267).

Looking at Table No. (14), which shows the correlation coefficient between the axes of nutritional behavior and the playing centers of basketball players in the Kingdom of Saudi Arabia, where it is clear that there is a correlation in some axes of the nutritional behavior of players and some playing centers of basketball players in the Kingdom of Saudi Arabia at a level of significance (0.05), (0.01) and that as follows:

Where there is a positive correlation at a significant level of 0.05 between the axes of behavior related to nutrients and the behavior of planning meals for athletes for the players in center (1), and the behavior related to nutrition to restore recovery after physical exertion, where the value of the correlation coefficient reached (0.509 - 0.598), and a correlation was found between the behavior of balanced diet, nutritional needs of athletes, and behavior of nutritional supplements, where the value of the correlation coefficient was (0.633).

It was also found that there is a correlation between the axes of the behavior of nutrients and the behavior of nutrition and recovery after the physical exertion of a player in center (2), where the value of the correlation coefficient is (0.408).

It was also found that there is a correlation between the axes of the behavior related to nutrients and the behavior of nutritional supplements for the player of center (3), where the value of the correlation coefficient is (0.603), as it was found that there is a correlation between the axes of the behavior of meal planning for athletes and the behavior of nutrition to restore recovery after physical exertion for the player of center (3), where the value of the correlation coefficient is (0.565).

The researcher attributes the existence of a correlation between some axes of nutritional behavior and the playing centers of basketball players in the Kingdom of Saudi Arabia to that the nutritional behavior of athletes can

be similar according to the nature and type of the playing center, as there is some similarity in the motor roles of the playing centers, which in turn leads to interest in nutrition and nutritional behavior, as many scientific opinions explain the importance of the nutritional behavior of athletes in general and play centers in particular.

The study of Susan, et, explains that the goal of nutritional education for athletes is to enhance nutritional knowledge and improve nutritional behavior for athletes, and all of this can only come through nutritional education programs, and there is a positive relationship between nutritional knowledge, nutritional behavior and the food intake of athletes 29.

Also, the wrong nutrition is the important factor that limits the player's ability and prevents him from reaching his maximum capabilities, and unfortunately many players do not reach the maximum level of their physical, motor and sports abilities, due to their lack of sufficient awareness or their lack of awareness of the relationship between sports performance and food, and this is consistent with a study of 1, 5, 27, .

These results are also consistent with the study of Davar 16, that athletes who lack nutritional knowledge and proper nutritional behavior, and not to choose healthy food and also lack of knowledge of balanced food, and the negative effects resulting from eating unhealthy food, all affect the level of physical performance of athletes. This study recommended conducting training sessions or educational materials to encourage the acquisition of more nutritional knowledge and health trends among athletes.

Indicate that coaches are the main source of nutritional programs for most players, which indicates that the lack of information in the field of nutrition for coaches negatively affects the level of players, and that the most important knowledge that the coach must have in the sports field, especially sports training, is how to choose the type of food and the extent to which it provides nutritional value and the best times in which the athlete can eat food, and this also relates to the physical load during training and competitions 10, 14.

This studies explains that the human being is an integrated structural unit in which each aspect affects and is affected by the rest of the aspects, as knowledge and information related to food is considered one of the important matters that must be included in the knowledge formation of the human being, as it gives the right idea of his health 1, 18 & 6.

Thus, the second hypothesis of the research is achieved, as there is a correlation between the nutritional behavior and the playing centers of basketball players in the Kingdom of Saudi Arabia.

3. CONCLUSIONS

From the reality of the findings reached by the researcher and within the framework of the statistical treatments used within the limits of the research sample, the following conclusions were reached:

-The existence of a correlation relationship in some axes of nutritional behavior and playing centers for basketball players in the western region of the Kingdom of Saudi Arabia.

4. RECOMMENDATIONS

Based on the conclusions of the research and in light of the actions taken, the researcher recommends the following:

1. Organizing courses and lectures for players and coaches and introducing them to how to plan and design nutritional programs for players by evaluating the nutritional behavior of players during each stage of sports training (during the sports season).

2. Develop nutritional education programs for basketball players and coaches in light of the results obtained.

3. Awareness of players about the importance and role of nutrition and following proper nutritional behavior as an important and influencing factor in the success of the training process.

4. The need to urge coaches to see what is new in the field of nutrition for athletes during the training season, to provide players with nutritional information, and to develop and modify the nutritional behavior of players in line with the development in the training process and nutrition for athletes.

5. Establishing periodic tests for players to assess the nutritional behavior of players during the stages of the sports season.

6. Conducting more scientific studies related to the nutritional behavior and nutrition of athletes in other sports activities and during different age stages for players and coaches.

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