*JOURNAL OF ATHLETIC PERFORMANCE AND SPORTS MEDICINE*
https://journalapsm.com
*e-ISSN 3062-4517* 2025, 2 (1), 16-24 *Original Article*

# Determination of the Attitudes of Triathlon Athletes Competing in Turkey in the 2023-2024 Season Towards Nutrition

**Seyhan Hasırcı[1ABCDE], Remzi Ekşi[2ABCD]**

*[1]Nişantaşı University, School of Physical Education and Sports, Istanbul, Turkey*
*[2]Nişantaşı University, School of Physical Education and Sports, Istanbul, Turkey*

***Authors' Contribution:*** *A: Study design, B: Data collection, C: Data analysis, D: Manuscript preparation, E: Discussion and conclusion*
*Corresponding author: R. Ekşi*
*Published: 31.08.2025*
DOI: 10.5281/zenodo.17012022

## ABSTRACT

This study aimed to examine the attitudes of triathlon athletes towards nutrition. Descriptive scanning model was used in the study. While the universe of this study consisted of participants who do sports under license from the Turkish Triathlon Federation, the sample group consisted of 173 participants, 44 of whom were female and 129 were male. The data were delivered to the participants via a link created through Google Forms, and participation in the study was based on volunteering. The first part of the study consisted of a personal information form, and the second part consisted of the Scale of Attitudes of Triathlon Athletes Towards Nutrition (TSBYTÖ) developed by Kaya and Gündüz (2022). Data analysis was done with SPSS 25.0 package program. Kolmogrov Smirnova analysis was used to evaluate whether the data were suitable for normal distribution, and non-parametric analyzes were found appropriate as a result of $p<0.05$. Frequency and percentage calculations were applied statistically. In the analysis of descriptive data, Mann Witney U test was applied for binary variables and Kruskal Wallis H test was applied for more than two groups. The internal consistency coefficients of the scale were calculated with Cronbach Alpha coefficients. The margin of error in the applied analysis was determined as 0.05. As a result of the research, a significant difference was found between the athletes' attitudes towards nutrition and the sports history variable, while no significant difference was found between the athletes' attitudes towards nutrition and the age and gender variables. As a result of the research, it was determined that the athletes' attitudes towards nutrition were high, while it was concluded that the participants with a high sports history had higher attitudes towards nutrition than the participants with a low sports history.
**Keywords**: Nutrition, Triathlon, Attitude

## INTRODUCTION

Throughout human history, sports have emerged as a significant phenomenon that contributes to both the physical and mental development of individuals. The beneficial effects of physical activity on individuals' health levels have been demonstrated through numerous scientific studies conducted from past to present. Sports, which have been defined in various ways, encompass inclusive activities that adhere to general rules, are practiced within a specific discipline, comply with legal regulations, and are carried out in an equitable manner with values of fairness, justice, and respect, ensuring dignified behavior (Pehlivan, 2004). Sports comprise a set of regular activities based on physical movement in which individuals participate to enhance their physical and mental health, engage in competition, seek entertainment, or interact socially. In addition to improving physical performance, sports contribute to an individual's social, emotional, and cognitive development (Caspersen et al., 1985). As stated by the World Health Organization (WHO, 2020), regular physical activity provides numerous physical benefits, such as improving cardiovascular health, strengthening muscle and bone structure, and preventing obesity, while also exerting positive effects on mental health. Findings regarding the significance of sports on both individual and societal levels have made it an indispensable part of daily life. The restorative power of sports has consistently been evident in research (Dereceli et al., 2023).

Triathlon is an individual sport that requires extraordinary effort, pushing athletes to their maximum potential, and is accessible to various age groups (Öztürk, 2019). It is considered a relatively new discipline in the world of sports and has gained significant popularity within a short period. Combining three different endurance sports—cycling, running, and swimming—triathlon became widely recognized in the second half of the 20th century and achieved international status after being included in the Sydney Olympic Games in 2000 (International Triathlon Union, 2021). In triathlon, each athlete aims to complete the swimming, cycling, and running segments, along with the transitions between them, in the shortest time possible. In these individual competitions, external assistance is prohibited, encompassing aid such as nutritional support and mechanical assistance. However, at

designated points, volunteers may provide food and beverages to athletes. During the cycling stage of triathlon races, a tactic known as "drafting" may be employed, wherein an athlete positions themselves behind another to reduce wind resistance and thus complete the course more efficiently. In Olympic-distance races and World Cup events organized by the International Triathlon Union (ITU), professional triathletes are permitted to use this technique. However, in most amateur-level competitions, this tactic is prohibited (Hausswirth et al., 1999; cited in Öztürk, 2019).

Proper and regular nutrition is of vital importance in supporting individuals' growth and development processes, maximizing their performance, ensuring a healthy lifestyle, and maintaining essential bodily functions (Güneş, 1998). Nutrition is one of the fundamental pillars of physical performance. It enables the conversion of consumed food into energy and facilitates the utilization of this energy in biological processes (Hornstrom et al., 2011). Nutrition involves the regular consumption of essential micro and macronutrients, various food groups, and bioactive compounds necessary for sustaining life, improving and maintaining health, and supporting growth and development. Beyond merely meeting the body's energy requirements, this process is crucial for maintaining metabolic functions, strengthening the immune system, and ensuring cellular regeneration, which are fundamental for sustaining vital life processes (Baysal, 2006).

There is a direct relationship between sports and nutrition in terms of performance and health. The energy needs of physically active individuals increase, making the development of appropriate nutrition strategies essential. Adequate and balanced nutrition enhances athletic performance, accelerates recovery, and reduces the risk of injury (Thomas et al., 2016). Although adequate and balanced nutrition is a critical factor in supporting athletic performance, it is not the sole determinant of success in sports. However, it plays a crucial role in preventing potential negative effects caused by insufficient and unbalanced nutrition. An athlete who maintains a well-balanced diet gains certain advantages over those who do not prioritize their nutrition. These advantages include improved performance, higher training efficiency, increased concentration and focus, reduced risk of injury, lower susceptibility to illness due to a strong immune system, optimal body composition, and proper growth and development rates (Ersoy & Hasbay, 2008; cited in Güngör, 2024). In endurance sports like triathlon, where multidimensional stamina is required, proper and balanced nutrition is one of the key factors directly influencing both physical and mental performance. Due to the high energy demands of triathlon training, careful attention must be given to the balance of carbohydrates, proteins, fats, and vitamins. Improper dietary habits can lead to significant short- and long-term performance declines (Burke, 2020).

One of the significant factors affecting triathletes' nutritional habits is their attitude toward nutrition. Attitude is defined as the reflection of internal or external factors that influence an individual's response to various people, objects, or situations. It is a concept that shapes an individual's behavior toward their environment and reflects a specific inclination (Başer, 2009). According to Ajzen's (1991) Theory of Planned Behavior, individuals' intentions to perform a behavior are determined by their attitudes toward that behavior, their normative beliefs, and their perceived control. In this context, triathletes' attitudes toward nutrition play a crucial role in shaping their dietary habits and, consequently, their performance. A positive attitude toward nutrition supports the development of healthy eating habits, while negative attitudes can lead to nutritional deficiencies and performance deterioration.

Carbohydrates serve as the primary energy source for athletes, whereas proteins are essential for muscle repair and growth. Fats provide long-term energy. Maintaining a balanced intake of these macronutrients is critical in an athlete's diet (Rodriguez et al., 2009). Vitamins and minerals are necessary for energy metabolism, immune function, and overall health. Specifically, deficiencies in micronutrients such as iron, calcium, and vitamin D can adversely affect athletic performance. Dehydration during exercise can lead to a decline in performance and, in severe cases, health complications. Therefore, adequate fluid intake during training and competition is of vital importance (Nash, 2024). The interaction between sports and nutrition varies depending on the type of sport, training intensity, and individual requirements. A well-designed nutrition plan supports both short-term performance and long-term health.

Attitudes toward nutrition are a key indicator of the extent to which athletes adopt their dietary programs, their level of nutritional knowledge, and how well they integrate healthy eating habits into their daily lives. In endurance sports such as triathlon, nutrition strategies before, during, and after a race are of critical importance. Pre-race carbohydrate loading, maintaining adequate fluid intake during the race, and ensuring rapid post-race recovery through protein consumption are essential for sustaining

triathletes' performance (Burke, 2020). However, the effectiveness of these strategies depends on athletes' attitudes toward nutrition.

The aim of this study is to examine the nutritional attitudes of triathletes competing in Turkey during the 2023–2024 season and to evaluate the impact of these attitudes on their performance. Factors influencing athletes' dietary habits and the effects of these habits on performance hold significant importance in sports science literature. The findings obtained from this study are expected to contribute to the field of sports nutrition. Since research on the nutritional attitudes of triathletes in Turkey is limited, this study aims to fill this gap. The study will comprehensively analyze the relationship between athletes' nutritional attitudes, performance, and health status.

In conclusion, nutrition is an integral component of triathletes' training and competition processes. Understanding athletes' attitudes toward nutrition is essential for optimizing their performance and maintaining a healthy lifestyle. By evaluating triathletes' nutritional attitudes, this study aims to shed light on further research in this field.

## METHOD

*Research Model*

In this study, the general survey method, which is one of the descriptive survey methods, was employed. Survey methods are commonly used in research to understand an existing situation or to obtain a general impression of a particular population. In this method, researchers examine a group or sample and attempt to make generalizations based on the collected data. The survey model is a technique that aims solely to observe without direct intervention in the research subject. In this model, the researcher does not influence objects or individuals but rather examines the existing situation and its characteristics to draw conclusions (Karasar, 1991).

*Population and Sample*

The population of this study consists of licensed athletes affiliated with the Turkish Triathlon Federation, while the sample group includes a total of 173 participants, comprising 44 women and 129 men. The data were collected through a Google Forms link, and participation in the study was based on voluntary consent.

*Data Collection Instruments*

In this study, a Personal Information Form was used in the first section, while the Triathletes' Attitudes Toward Nutrition Scale (TATNS), developed by Gündüz et al. (2022), was applied in the second section.

*Personal Information Form*

The "Personal Information Form," prepared by the researchers, consists of three questions aimed at gathering data on age, gender, and sports background.

*Triathletes' Attitudes Toward Nutrition Scale*

The Triathletes' Attitudes Toward Nutrition Scale (TATNS), developed by Gündüz et al. (2022), consists of 17 items and three sub-dimensions. The scale's dimensions are named as follows: Physical Impact Dimension (7 items), Nutritional Snack Intake Dimension (5 items), and Preference Dimension (5 items). The minimum possible score on the scale is 17, while the maximum is 85. During the scale development process, the Cronbach's alpha reliability coefficient was determined as .81, whereas in this study, it was found to be .91.

*Data Analysis*

The collected data in this study were analyzed using the SPSS 25.0 statistical software package. The normality of data distribution was assessed using the Kolmogorov-Smirnov test, and since the results indicated $p<0.05$, non-parametric analyses were deemed appropriate. Statistically, frequency and percentage calculations were applied. In the analysis of descriptive data, the Mann-Whitney U test was used for binary variables, while the Kruskal-Wallis H test was applied for groups with more than two variables. The internal consistency coefficients of the scale were calculated using Cronbach's alpha coefficients. The margin of error for the analysis was set at 0.05.

## FINDINGS

Table 1. Distribution of Scores Related to the Scales

| Dimensions | n | Mean | SD |
|---|---|---|---|
| Physical Impact | 173 | 29,12 | 6,07 |
| Nutritional Snack Intake | 173 | 19,42 | 4,03 |
| Preference | 173 | 16,42 | 3,61 |
| TATNS | 173 | 64,97 | 11,96 |

*TATNS = Triathletes' Attitudes Toward Nutrition Scale*

An examination of participants' nutrition-related scores reveals that the physical impact dimension scores were at a moderate level ($\overline{X}$ = 29.12), the nutritional snack intake scores were at a high level ($\overline{X}$ = 19.42), the preference dimension scores were at a high level ($\overline{X}$ = 16.42), and the total scale scores were at a high level ($\overline{X}$ = 64.97). Cronbach's alpha analysis indicated that while the reliability of the preference dimension was at an acceptable level, all other variables demonstrated high reliability.

Table 2. Normality Analysis Results for the Scales

| | Kolmogorov-Smirnov | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| Physical Impact | ,218 | 173 | ,000 | ,773 | 173 | ,000 |
| Nutritional Snack Intake | ,189 | 173 | ,000 | ,844 | 173 | ,000 |
| Preference | ,119 | 173 | ,000 | ,968 | 173 | ,000 |
| TATNS | ,171 | 173 | ,000 | ,805 | 173 | ,000 |

As shown in Table 2, the Kolmogorov-Smirnov test results indicated that the significance level was less than $p<0.05$, leading to the use of non-parametric tests in data analysis.

Table 3. Kruskal-Wallis H Test Results for Triathletes' Attitudes Toward Nutrition by Age Variable

| Scale and Sub-Dimensions | Age | N | Rank Mean | Chi-Square | df | p |
|---|---|---|---|---|---|---|
| Physical Impact | 18-24 | 34 | 90,68 | 1.242 | 3 | ,743 |
| | 25-29 | 40 | 90,49 | | | |
| | 30-34 | 86 | 82,87 | | | |
| | 35 and above | 13 | 94,00 | | | |
| Nutritional Snack Intake | 18-24 | 34 | 88,22 | 1,807 | 3 | ,613 |
| | 25-29 | 40 | 87,50 | | | |
| | 30-34 | 86 | 83,80 | | | |
| | 35 and above | 13 | 103,46 | | | |
| Preference | 18-24 | 34 | 85,04 | ,785 | 3 | ,853 |
| | 25-29 | 40 | 91,49 | | | |
| | 30-34 | 86 | 87,02 | | | |
| | 35 and above | 13 | 78,19 | | | |
| TATNS | 18-24 | 34 | 92,79 | 1,247 | 3 | ,742 |
| | 25-29 | 40 | 88,49 | | | |
| | 30-34 | 86 | 83,04 | | | |
| | 35 and above | 13 | 93,46 | | | |

*$p<0.05$

As shown in Table 3, the Kruskal-Wallis H Test results indicated no statistically significant differences in total scale scores or any sub-dimensions based on age ($p>0.05$).

Table 4. Mann-Whitney U Test Results for Triathletes' Attitudes Toward Nutrition by Gender Variable

| Scale and Sub-Dimensions | Gender | N | Rank Mean | Rank Sum | U | z | p |
|---|---|---|---|---|---|---|---|
| Physical Impact | Female | 44 | 85,84 | 3777,00 | 2787,000 | -,180 | ,857 |
| | Male | 129 | 87,40 | 11274,00 | | | |
| Nutritional Snack Intake | Female | 44 | 91,94 | 4045,50 | 2620,500 | -,764 | ,445 |
| | Male | 129 | 85,31 | 11005,50 | | | |
| Preference | Female | 44 | 93,15 | 4098,50 | 2567,500 | -,949 | ,343 |
| | Male | 129 | 84,90 | 10952,50 | | | |
| TATNS | Female | 44 | 89,72 | 3947,50 | 2718,500 | -,417 | ,677 |
| | Male | 129 | 86,07 | 11103,50 | | | |

As seen in Table 4, the Mann-Whitney U Test results indicated no statistically significant differences in total scale scores or any sub-dimensions based on gender ($p>0.05$).

Table 5. Kruskal-Wallis H Test Results for Triathletes' Attitudes Toward Nutrition by Sports Background Variable

| Scale and Sub-Dimensions | Sports Background | N | Rank Mean | Chi-Square | df | p | Difference |
|---|---|---|---|---|---|---|---|
| Physical Impact | 1-5 years | 61 | 75,25 | 6,786 | 2 | ,034 | 3>1 |
| | 6-10 years | 86 | 90,24 | | | | |
| | 11+ years | 26 | 103,83 | | | | |
| Nutritional Snack Intake | 1-5 years | 61 | 77,97 | 5,552 | 2 | ,062 | - |
| | 6-10 years | 86 | 87,88 | | | | |
| | 11+ years | 26 | 105,27 | | | | |
| Preference | 1-5 years | 61 | 84,75 | ,775 | 2 | ,679 | - |
| | 6-10 years | 86 | 90,20 | | | | |
| | 11+ years | 26 | 81,69 | | | | |
| TATNS | 1-5 years | 61 | 74,11 | 6,689 | 2 | ,035 | 3>1 |
| | 6-10 years | 86 | 92,32 | | | | |
| | 11+ years | 26 | 99,65 | | | | |

As presented in Table 5, the Kruskal-Wallis H Test results revealed no statistically significant differences in the physical impact sub-dimension and total scale scores based on sports background ($p>0.05$). The comparative analysis conducted to identify differences between groups revealed that participants with over 11 years of sports experience had higher attitude levels compared to those with 1–5 years of sports experience.

## DISCUSSION

In this study, the attitudes of triathletes competing in the 2023-2024 season in Turkey toward nutrition were examined, and the findings were evaluated by comparing them with the relevant literature. As a result of the study, it was determined that sports background is a variable that significantly affects attitudes toward nutrition, whereas demographic variables such as age and gender do not have a significant impact on attitudes toward nutrition.

When examining the attitudes of triathletes toward nutrition according to the age variable, no statistically significant difference was found between different age groups in terms of physical impact, nutritional snack intake, preference, and total scale scores. Comparisons between age groups revealed that the nutrition-related attitudes of triathletes across different age categories were at similar levels. For instance, in the physical impact dimension, the mean rank of athletes aged 18-24 was 90.68, while the mean rank for those aged 35 and above was 94.00. Despite this numerical difference, statistical analyses did not indicate a significant difference. Similarly, no significant differences were found across other sub-dimensions, suggesting that age is not a determinant factor in triathletes' attitudes toward nutrition. This finding is consistent with some studies in the literature. For example, in the study conducted by

Çolak (2021) on the nutritional knowledge and habits of gym-goers, no significant differences were found in general nutrition attitudes or attitudes toward processed nutrition across different age groups. This suggests that individuals of different age groups have similar attitudes toward nutrition. Likewise, in the study conducted by Çakır and Karaağaç (2021) on gym-goers, no significant relationship was found between age and attitudes toward healthy eating. Similarly, research conducted by Bilgiç et al. (2011) on professional wrestlers demonstrated that nutritional knowledge levels remained consistent as long as the duration of sports participation persisted. This finding indicates that age alone does not account for differences in nutritional knowledge. Jacobson et al. (2001) emphasized that deficiencies in athletes' nutritional knowledge could be attributed not only to age but also to factors such as education and awareness. Additionally, Ercen (2016) highlighted that athletes tend to be more mindful of diet and ergogenic aids as they age. However, different results have also been reported in the literature (Karaçil Ermumcu & Saçlı, 2023; Lennernas et al., 1997; Sargın & Güleşçe, 2022). The finding that triathletes' attitudes toward nutrition do not significantly vary with age is largely consistent with the literature. However, despite the similarity in attitudes across age groups, the necessity of education in areas such as the use of specific dietary supplements, including protein powder, remains evident.

As a result of the analyses conducted to determine whether triathletes' attitudes toward nutrition differ by gender, no statistically significant differences were found between male and female athletes in terms of total scores and sub-dimensions. This result suggests that gender is not a determining factor in triathletes' attitudes toward nutrition. This finding is consistent with the literature. For instance, Rosenblom et al. (2002) found no significant differences in nutritional knowledge levels between male and female athletes. In another study investigating social appearance anxiety and its impact on attitudes toward healthy eating, it was reported that attitudes toward healthy nutrition did not differ by gender. However, it was also noted that individuals participating in individual sports had significantly higher attitudes toward healthy nutrition compared to female athletes (Tekkurşun Demir, 2021). Similarly, in a study examining belief levels regarding dietary supplements among individuals engaged in bodybuilding, it was reported that dietary supplement beliefs did not significantly differ by gender (Yıldız, 2024). However, in a study on dietary supplement practices among Singaporean athletes, it was observed that male athletes were more inclined to use dietary supplements than female athletes (Slater, 2003). The findings of this study are in agreement with several previous studies (Corley et al., 1990; Çongar & Özdemir, 2004; Süel et al., 2006), supporting the conclusion that gender is not a significant factor in triathletes' attitudes toward nutrition.

As a result of the analysis conducted on triathletes' attitudes toward nutrition based on their sports background, significant findings were obtained. No significant differences were found in the nutritional snack intake and preference sub-dimensions based on sports background, whereas a significant difference was identified in the physical impact sub-dimension. In particular, participants with 11 or more years of sports experience had significantly higher attitude scores compared to those with 1-5 years of experience. This finding suggests that individuals with a longer sports background may develop more positive attitudes toward nutrition. However, no significant differences were detected in the nutritional snack intake and preference sub-dimensions, indicating that meal frequency and dietary preferences remain consistent across different sports backgrounds. Thus, while a meaningful difference was observed in the physical impact sub-dimension, no significant relationships were identified between sports background and other attitude dimensions. Studies examining the relationship between sports experience and triathletes' nutrition-related attitudes indicate that prolonged sports participation may positively influence nutrition-related attitudes. For instance, a study conducted by Çevik et al. (2023) found statistically significant differences in knowledge and emotional aspects of nutrition among athletes with varying sports experience. This finding suggests that long-term sports experience may positively affect individuals' nutritional habits and attitudes. On the other hand, different studies have reported significant differences between sports experience and nutritional attitudes (Mor et al., 2018; Yılmaz et al., 2022). Mor et al. (2018) found that while individuals with different sports backgrounds exhibited similar overall nutrition attitudes, variations could be observed in specific sub-dimensions. This suggests that while sports experience may influence nutrition-related attitudes, its effect may not be uniformly pronounced across all dimensions.

As a result, in this study, the relationship between triathletes' attitudes toward nutrition and demographic variables, as well as their sports background, was examined, and significant findings were obtained.

## CONCLUSION

In this study, the attitudes of triathletes competing in Turkey during the 2023-2024 season toward nutrition were examined, and the findings obtained were compared with other studies in the literature. The results of the study revealed that triathletes' attitudes toward nutrition were associated with their sports background; however, demographic factors such as age and gender were found to have no significant effect on these attitudes. Significant differences were found between sports background and nutritional attitudes, particularly indicating that participants with 11 or more years of sports experience had higher attitude levels compared to those with 1-5 years of experience. This finding suggests that athletes with a long-term sports background place greater importance on nutrition, which may positively reflect on their athletic performance. However, the lack of a significant effect of age and gender on nutritional attitudes indicates that athletes' dietary habits are shaped more by experience and individual differences.

The study highlights that triathletes' nutritional habits can positively impact their overall health and performance, emphasizing the importance of nutrition education and awareness for athletes. Future research can contribute to the body of knowledge in this field by conducting more in-depth examinations of the nutritional attitudes of different athletes with larger samples. In conclusion, it has been observed that triathletes' attitudes toward nutrition can directly affect their health and performance and that individuals with a long-term sports background may exhibit a more positive attitude toward nutrition. These findings once again underscore the importance of various educational and counseling programs aimed at improving athletes' nutritional habits for coaches and nutrition experts.

## RECOMMENDATIONS

This study focused solely on triathlon athletes' attitudes toward nutrition. In the future, similar research can be conducted in different disciplines, such as endurance and team sports. Such studies could reveal branch-specific differences in athletes' nutritional habits. The research was limited to a single-period data collection process. Conducting long-term follow-up studies would allow for more robust and comprehensive results by showing how changes and developments in athletes' attitudes toward nutrition evolve over time. Differences in the effects of demographic variables such as age, gender, and sports background on nutritional attitudes were observed. In this context, future studies conducted with a larger and more diverse sample could benefit from a more detailed comparison of age and gender. In this study, the relationship between athletes' attitudes toward nutrition and performance was limited. Future research should examine in greater detail the short-term and long-term effects of dietary habits on athletes' performance. In sports that require high endurance, such as triathlon, athletes' nutritional habits can directly impact their performance. Coaches and nutrition experts should organize regular education and awareness programs for athletes to promote healthy eating habits. Nutrition is a process that should be personalized according to each individual's physical needs. Tailoring athletes' dietary plans to their training periods and competition schedules can enhance their performance and protect their health.

The study identified a certain level of use of dietary supplements among athletes. However, the unconscious use of nutritional supplements may lead to health issues. Practitioners should educate athletes on the correct use of these products and ensure they are used only when necessary.

Coaches should regularly monitor athletes' nutritional habits and provide feedback when needed to ensure that their dietary strategies align with their needs. This continuous feedback mechanism could help athletes improve their attitudes toward nutrition. Attitudes toward nutrition are influenced not only by physical factors but also by psychological factors. Coaches can implement psychosocial support programs that enhance athletes' motivation and help them make more informed nutritional decisions.

## REFERENCES

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211.

Başer, S.A. (2009). *Öğretmen Niteliklerinin Beden Eğitimi Dersi Alan Öğrencilerin Bu Derse Karşı Olan Tutumlarına Etkisi.* Yayımlanmamış Yüksek Lisans Tezi. Abant İzzet Baysal Üniversitesi Sosyal Bilimler Enstitüsü, Bolu

Baysal, A. (2006). *Genel Beslenme, Obezite,* Hatipoğlu Yayınları, Ankara

Bilgiç, P. (2009). *Amino Asit Suplemanlarının Vücut Bileşimine, Biyokimyasal Parametrelere ve Kas Geliştirmeye Etkisi.* Hacettepe Üniversitesi Sağlık Bilimleri Enstitüsü, Doktora tezi, Ankara.

Burke, L.M. (2020). Nutrition for the endurance athlete: an overview of nutritional strategies to optimize performance. *Sports Science Exchange, 1*(1), 1-8.

Caspersen, C.J., Powell, K.E., & Christenson, G.M. (1985). Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. *Public health reports*, *100*(2), 126.

Çakır, E. ve Karaağaç, G. (2021). "Spor Salonlarına Giden Bireylerin Sağlıklı Beslenme Tutumları ve Sosyal Görünüş Kaygı Düzeylerinin Belirlenmesi". *Atatürk Üniversitesi Beden Eğitimi ve Spor Bilimleri Dergisi,* 23 (3), 1-10.

Çevik, A., Dokuzoğlu, G., & Zorba, E. (2023). Fitness Egzersizi Yapan Bireylerin Beslenmeye Yönelik Tutumlarının Belirlenmesi. *Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi,* 12(3), 1375-1383.

Çolak, A. (2021). *Spor salonlarına devam eden bireylerin beslenme bilgi ve alışkanlıklarının değerlendirilmesi ve incelenmesi* (Master's thesis, Sosyal Bilimler Enstitüsü).

Çongar, O., & Özdemir, L. (2004). Sivas il merkezinde beden eğitimi öğretmenlerinin genel beslenme ve sporcu beslenmesi ile ilgili bilgi düzeyleri. C.Ü. *Tıp Fakültesi Dergisi,* 26, 118-123.

Dereceli, Ç., Dereceli, E., & Yıldız, T. (2023). Spor Yapan ve Spor Yapmayan Spor Bilimleri Fakültesi Öğrencilerinin Kişisel Uyum Düzeyleri ile Liderlik Yönelimlerinin Karşılaştırılması. *Uluslararası Dağcılık ve Tırmanış Dergisi*, *6*(2), 38-51.

Ercen, Ş. (2016). *KKTC'deki fitnes ve vücut geliştirme sporu ile ilgilenen 18-40 yaş grubu sağlıklı erkek sporcuların beslenme alışkanlıklarının belirlenmesi, besinsel ergojenik destek ürünleri hakkındaki tutumlarının ve kullanım oranlarının saptanması* (Yayınlanmış Yüksek Lisans Tezi). Doğu Akdeniz Üniversitesi, Sosyal Bilimler Enstitüsü, Kıbrıs.

Ersoy, G., Hasbay A. (2008). *Sporcu beslenmesi.* Sağlık Bakanlığı Yayın No: 726, Klasmat Matbaacılık, Ankara, 2008.

Gündüz, Y.C., Kayapınar Çelik, F., Ve Yürekli, G. (2022). Triatlon Sporcularının Beslenmeye Yönelik Tutumları Ölçeği (Tsbytö): Geçerlik ve Güvenirlik Çalışması. İzmir Demokrasi Üniversitesi Sağlık Bilimleri Enstitüsü. (2022). *1. Ulusal İzmir Demokrasi Üniversitesi Sağlık Bilimleri Enstitüsü Öğrenci Kongresi (IDU-SAGOK 2022) Tam Metin Kitabı*, 8-9 Haziran 2022. İzmir Demokrasi Üniversitesi.

Güneş, Z. (1998). *Spor ve Beslenme, Antrenör ve Sporcu El Kitabı.* Ankara, Bağırgan Yayınevi.

Güngör, Ö. (2024). *Spor kulübünde beslenme durumu ile beslenme tutum ve davranışlarının karşılaştırılması: 9-13 yaş erkek futbolcular örneği.* (Yüksek Lisans Tezi). Haliç Üniversitesi / Lisansüstü Eğitim Enstitüsü,Beslenme ve Diyetetik Ana Bilim Dalı, Beslenme ve Diyetetik Bilim Dalı.

Hausswirth, C., Lehenaff, D., Dreano, P., Savonen, K. (1999). Effects of cycling alone or in sheltered position on subsequent running performance during a triathlon. *Medicine and Science in Sports and Exercise,* 31(4):599-604.

Hornstrom, G.R., Friesen, C.A., Ellery, J.E., & Pike, K. (2011). Nutrition knowledge, practices, attitudes, and information sources of Mid-American conference college softball players. *Food and Nutrition Sciences,* 2(2), 109–117.

International Triathlon Union. (2021). *History of triathlon*. Retrieved from https://www.triathlon.org

Jacobson, B. H., Sobonya, C., & Ransone, J. (2001). Nutrition practices and knowledge of college varsity athletes: a follow-up. *The Journal of Strength & Conditioning Research*, *15*(1), 63-68.

Karasar, N. (1991). Bilimsel araştırma teknikleri. Ankara: Sanem Matbaacılık, 4.

Lennernäs, M., Fjellström, C., Becker, W., Giachetti, I., Schmitt, A., De Winter, A. M. & Kearney, M. (1997). Influences on Food Choice Perceived to be İmportant By Nationally-Representative Samples of Adults in the European Union. *European Journal of Clinical Nutrition, 51*(8), 8-15.

Mor, A, İpekoğlu, G. ve Arslanoğlu, C. (2018). "Spor Lisesi Öğrencilerinin Beslenme Alışkanlıklarının İncelenmesi: Sinop İli Örneği". *Gaziantep Üniversitesi Spor Bilimleri Dergisi,* 3 (3), 67-77.

Nash, B.K. (2024). The Impact of Pre-Exercise Hydration Strategies on Athletic Performance and Recovery in High-Intensity Training. *Studies in Sports Science and Physical Education*, *2*(2), 38-48.

Öztürk, S. (2019). *Türk milli takımında yer alan triatloncuların triatlon sporuna başlama nedenleri ve beklentileri* (Yüksek lisans tezi, Balıkesir Üniversitesi, Sağlık Bilimleri Enstitüsü, Beden Eğitimi ve Spor Anabilim Dalı). Balıkesir.

Öztürk, S. (2019). *Türk milli takımında yer alan triatloncuların triatlon sporuna başlama nedenleri ve beklentileri* (Yüksek lisans tezi, Balıkesir Üniversitesi, Sağlık Bilimleri Enstitüsü, Beden Eğitimi ve Spor Anabilim Dalı). Balıkesir.

Pehlivan, Z. (2004). Sport in schools for improving the concept; fair-play. *Ankara University Faculty of Sport Sciences Spormetre*. 2(2), 49-53.

Rodriguez, N. R., DiMarco, N. M., & Langley, S. (2009). Position of the American Dietetic Association, Dietitians of Canada, and the American College of Sports Medicine: Nutrition and athletic performance. *Journal of the American Dietetic Association*, *109*(3), 509-527.

Sargın, K. ve Güleşce, M. (2022). "Öğretmenlerin Sağlıklı Beslenmeye İlişkin Tutumlarının Değerlendirilmesi: Van İli Örneği". *Gaziantep Üniversitesi Spor Bilimleri Dergisi,* 7 (1), 1-11.

Slater, G., Tan, B., & Teh, K.C. (2003). Dietary supplementation practices of Singaporean athletes. *International journal of sport nutrition and exercise metabolism*, *13*(3), 320-332.

Süel, E., Şahin, İ., Karakaya, M.A., & Savucu, Y. (2006). Elit seviyedeki basketbolcuların beslenme bilgi ve alışkanlıkları. *Fırat Üniversitesi Sağlık Bilimleri Tıp Dergisi*, *20*(4), 271-275.

Thomas, D.T., Erdman, K.A., & Burke, L.M. (2016). Nutrition and athletic performance. *Med. Sci. Sports Exerc*, *48*(3), 543-568.

World Health Organization. (2020). *Physical activity guidelines: Global recommendations for physical activity for health*. Geneva, Switzerland: WHO Press.

Yıldız, D.S. (2024). Vücut Geliştirme Sporu İle İlgilenen Bireylerin Besin Takviyesi İnanç Düzeylerinin İncelenmesi. *Sivas Cumhuriyet Üniversitesi Spor Bilimleri Dergisi,* 4(3), 87-93.

Yılmaz, G, Şengür, E. ve Turasan, İ. (2022). "Covid 19 Döneminde Üniversite Öğrencilerinin Sağlıklı Beslenme Tutum Puanlarının İncelenmesi". *Ulusal Spor Bilimleri Dergisi,* 6 (1), 1-10. https://doi.org/10.30769/usbd.1078434