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Interplay of sociodemographic factors and dietary practices of elite Ethiopian athletes track in enhancing sports performance

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ABSTRACT

Background: Dietary practices play a crucial role in athletic performance, particularly in endurance sports. In Ethiopia, known for its track athletes, the link between diet and performance is significant. This study explores the relationship between socio-demographic factors and dietary practices among Ethiopian track athletes to enhance performance.
Methods: A descriptive survey method targeted ten public and private clubs, selecting 301 athletes from 1,220 randomly. Ten questionnaires assessed dietary practices (reliability: 0.792). Hypothesis testing at a 0.05 significance level used statistical package for the social sciences (SPSS) 26 with descriptive and inferential statistics. Descriptive analysis included frequency, percentages, mean, and standard deviation. An independent t-test compared dietary practices by gender, while one-way analysis of variance (ANOVA) analyzed variations by age, club, race, and experience.
Results: The overall mean of 3.24 and standard deviation of 1.135 indicated moderate dietary adherence. The t-test showed a significant gender difference (t=3.514, p=0.047). ANOVA found no age-based difference (F=1.651, p=0.001) but revealed significant differences by club affiliation (F=2.301, p=0.016) and race (F=2.377, p=0.039). Experience showed no significant impact (F=0.190, p=0.001).
Conclusions: The findings underscore the need for tailored nutrition education and support for athletes, emphasizing individualized approaches based on gender, club affiliation, and race. The study revealed suboptimal dietary practices among Ethiopian track athletes, highlighting the importance of comprehensive nutrition education interventions.

Keywords: Athletes, Dietary practice, Athlete sports performance

INTRODUCTION

Nutrition plays a crucial role in sports performance, enhancing performance, improving recovery, and reducing injury risk. Different sports have varying energy and nutrient needs, and understanding these differences is essential for developing effective dietary strategies. Evaluating athletes' dietary habits is a multifaceted task that involves identifying common deficiencies or excesses that could impact performance. Factors influencing nutritional choices include personal preferences, cultural backgrounds, food availability, taste preferences, and nutritional education. Nutrition's role in training adaptations, recovery, and long-term health is also essential. Interventions to improve dietary practices include educational programs, personalized nutrition planning, and technology for monitoring and improving dietary habits. These strategies empower athletes with the knowledge and tools to make informed dietary choices that support their performance and health goals.[1]

Research shows that proper nutrient intake is directly linked to peak physical performance, whereas nutrient deficiencies can lead to reduced athletic capabilities.[2] Sports nutrition, which focuses on the nutrients found in foods that support athletic performance, is essential for meeting the metabolic demands of athletes engaged in regular physical activity, ensuring that optimal fueling is

critical for athletes to reach their peak performance levels.[3] Moreover, each athlete should prioritize fitness parameters specific to their events to further enhance performance.[4]

Proper nutrition is widely recognized as a crucial aspect of community health, since it attends to both physical and mental requirements, making a substantial contribution to overall well-being.[5] Unfortunately, inadequate knowledge about nutrition and inadequate dietary habits have become critical factors leading to nutritional deficiencies, malnutrition, and a wide variety of non-communicable illnesses.[6] Professional athletes, specifically, rely significantly on optimal nutrition to sustain their rigorous training routines, enhance performance, and accelerate recuperation. However, athletes might be hindered in achieving their full potential and getting peak performance levels due to a lack of understanding about essential food choices fundamentals.

Several researches have shown that particular age and gender cohorts have inadequate understanding of numerous components of nutrition, which leads to poor dietary practices.[7] Moreover, research has acknowledged that the level of education plays an important function in determining an individual's improved nutritional status. Particularly, nutrition education has been shown to have a positive correlation with making healthier food choices.[8,9]

To close the knowledge gap in nutrition and practical dietary choices, it is essential to recognize that various demographic factors such as age, gender, socioeconomic status, education, and cultural background significantly influence athletes' dietary choices and nutritional intake. A recent study found that age, gender, socioeconomic status, education, and cultural background are key determinants of food choices and eating behaviors in athletes.[10] Younger athletes often lack the knowledge needed to make informed dietary decisions, while older athletes may struggle to adapt to evolving nutritional recommendations. Gender differences also play a crucial role, with female athletes being more susceptible to issues like iron deficiency and disordered eating.[11] Athletes from lower socioeconomic backgrounds frequently face limited access to affordable, nutrient-dense foods, leading to inadequate nutritional intake and potential performance deficits.[12]

The study by Mola et al emphasizes the crucial role of managerial skills in the development of Ethiopian athletes and critiques early specialization practices despite IAAF recommendations.[13] These practices can lead to physical and social strain, impacting long-term performance. The research shows that adapting the long-term talent development environment questionnaire improves the reliability of talent identification in Ethiopia. It also examines Ethiopian track athletes' dietary practices, highlighting the importance of nutrition for performance and the need for effective management strategies. Furthermore, it underscores the significance of athletes' education and nutritional literacy, noting that higher education generally enhances their understanding of nutrition. Ongoing education and cultural considerations are vital for effective nutritional guidance, addressing knowledge gaps and catering to athletes' unique needs.[10] Furthermore, it is important to encourage collaboration among sports organizations, nutritionists, and educational institutions to develop and improve programs that enhance Ethiopian athletes' nutritional habits, knowledge, and attitudes.[14] This study aims to explore the relationship between demographic characteristics, including age, gender, socioeconomic level, educational background, and dietary choices.

Furthermore, it endeavours to assess the influence of all these variables on athletic performance. Through the examination of these elements, we can provide a comprehensive nutritional strategy tailored to fulfil the particular needs of Ethiopian athletes. This study will provide useful insights to coaches, nutritionists, and policymakers in developing successful dietary plans that take into account the demographic subtleties of these athletes. Ultimately, this will contribute to maintaining high performance levels in track and field sports.

METHODS

This study employed a descriptive research design to investigate the relationship between demographic profiles and dietary practices among Ethiopian track athletes. A standardized questionnaire on dietary intake practice, nutritional knowledge, and nutritional attitudes developed and previously used was administered to 301 athletes as the primary data collection tool.[15-17] The participants were youth and elite middle- and long-distance runners selected from Ethiopia's ten public and private athletics academies/clubs. These academies are known for training athletes to develop future elite runners. The sample size for the study was determined using, simplified formula for proportions, assuming a 95% confidence interval level and p=0.05.[18] This sample comprised both male and female athletes from various clubs, including Sebeta Athletics Club (N=30, 10%), Burayyu Club (N=33, 11%) LagaXafo Club (N=35, 11.6%), Sululta Club (N=31, 10.3%), Galan Club (N=28, 9.3%), Dukam Club (N=30, 9.3%), Holota Club (N=17, 5.6%), Adama Club (N=32, 10.5%), Asela Club (N=30, 10%) and Oromia Construction Corporation (O.C.C.) Club (N=36, 12%) The study sample comprised 155 males (N=155, 51.5%) and 57 females (N=146, 48.5%). The researcher employed purposive and random selection methods to select the sample. The quantitative data was analyzed using the statistical program statistical package for the social sciences (SPSS) version 26. The research primarily recruited elite male and female athletes from Ethiopian sports clubs, with a specific focus on middle and long-distance runners who met specific health and physical preparedness requirements. Throughout the study, participants were consistently educated on their rights. Participants were guaranteed confidentiality and anonymity, and they could withdraw at any point. The research included athletes who were registered in the Oromia regional state of Ethiopia from

2020 to 2023 and participated in middle-distance (800-3000 m) and long-distance (5000-10000 m) track events. Only those who had undergone a minimum of one year of training and had not had any injuries over the previous six months were eligible for inclusion. To ensure the study's integrity, certain criteria were set to prevent certain individuals from participating. This included excluding sprint and relay runners, long-distance runners who participated in races of 21 km and 42 km, athletes with less than one year of training experience, and those who had suffered an injury within the preceding six months. The research attempted to analyse the link between demographic profiles and dietary patterns properly, to boost performance via nutritional insights, by adhering to these parameters.

The research employed a descriptive method using a survey approach to assess the relationship between demographic profiles and dietary practices of Ethiopian track athletes, to enhance performance. The study used a 10-item questionnaire tailored for athletes, with items given in a tabular style with a Likert scale reaching from 1 to 5. To enhance the performance of athletes, detailed data was systematically gathered from public sports clubs in Ethiopia to examine the correlation between demographic profiles and dietary habits.

As a preliminary evaluation, the reliability and validity of each item in the questionnaire were assessed using Cronbach's alpha to validate the instrument's reliability. The Cronbach's alpha (α) value was 0.7920. Furthermore, the instrument underwent a comprehensive validation procedure. Professional and language experts rigorously evaluated the questions to determine their effectiveness in measuring the target study issue. Additionally, we will initially conduct a preliminary study with a limited number of athletes who share similar traits with our primary participants. This pilot study adheres to the recommended research design principles, as defined earlier.[19] The pilot will assess the efficacy of our data-gathering techniques, ascertain participants' comprehension of the activities involved, and enhance the precision of our survey instrument.

The study received ethical approval from an Independent Ethics Committee recognized by the Department of Sports Science, Punjabi University, Patiala, India, before its initiation. Findings aimed to enhance athletes' nutritional practices for improved performance

Statistical analysis

The study analyzed athletes' opinions and characteristics using SPSS version 26, employing robust statistical methods. Using a five-point scale, descriptive statistics such as frequency, percentages, mean, and standard deviation were used to summarize their opinions on various dimensions. These statistics provided insights into the prevalence of each opinion, the average response, and the variability of responses, highlighting overall sentiment

and consistency. To explore potential differences, inferential statistics were applied. Independent samples t-test compared opinions and characteristics, such as dietary intake practices, between male and female athletes to identify statistically significant differences in their means. Additionally, a one-way analysis of variance (ANOVA) examined whether opinions and characteristics varied based on four independent factors: age, club affiliation, race, and experience.

RESULTS

Demographic characteristics of the respondents

The study included 312 middle-distance and long-distance athletes who participated in regional, national, and international competitions. However, only 301 of them completed and returned the questionnaire. According to the sample size table provided earlier, this number is within the acceptable range (301±5%).[20]

In terms of gender representation, 156 participants (51.8%) of the survey were male, while 145 participants (48.2%) were female. The gender distribution of the participants in this study sample is about equal. We surveyed athletes about their age and grouped the data into four groups, as shown in the table above. Out of the respondents, 148 individuals (49.2%) were under the age of 18, 140 individuals (46.5%) were between the ages of 18 and 23, and 13 individuals (4.5%) were between the ages of 24 and 29. Regarding the educational background of athletes Out of the total number of athletes surveyed, 29 (9.6%) are now in elementary schooling, 162 (53.8%) are high school students, 53 (17.6%) have completed graduate studies, 47 (15.6%) have obtained a college diploma or certification, and 10 (3.3%) are degree holders. We queried the participants about their marital status. Out of the total number of athletes, 297 (98.7%) were single, 2 (0.7%) were married, and 2 (0.7%) were divorced. Out of the total number of athletes, 95 (41.55%) have a monthly income ranging from 2000 to 4000 birr. Another 95 (31.6%) athletes have a monthly income between 1000 and 2000 birr, while the remaining 81 (26.9%) participants have a monthly income of 4000 birr.

As Table 2 shows, in terms of athletic events, the majority of athletes are engaged in middle-distance events 190 (63.1%), with a notable portion participating in long-distance events 111 (36.9%). Further delving into the specific race categories, the distribution indicates varying levels of participation. Notably, 39 (13.0%) of athletes categorized under 800 m race, 53 (17.6%) of the athletes were categorized under 1500 m race, 44 (14.6%) athletes were categorized 3000 m steeplechase, 55 (18.3%) of the athletes were categorized 3000 m race, 54 (17.9%) of the athletes were categorized 5000 m race, and 56 (18.6%) the athletes were categorized 10000 m race. These figures highlight the versatility and specialization of middle distance in the 3000 m race and l0000 m long-distance competitors. Notably, 39 athletes (13.0%) fell into the

800m race, 53 athletes (17.6%) into the 1500 m race, 44 athletes (14.6%) into the 3000 m steeplechase, 55 athletes (18.3%) into the 3000 m race, 54 athletes (17.9%) into the 5000 m race, and 56 athletes (18.6%) into the 10000 m race. These figures highlight the versatility and specialisation of middle distance in the 3000 m race and l0000 m long-distance competitors. Notably, 66 (21.9%) for 6 months to 1 year, 93 (30.9%) of athletes have been members for 1-2 years, 22 (7.3%) for 2-3 years, 70 (23.3%) for 3-4 years, and 50 (16%) above 5 years. The percentage of athletes who train five days a week is 105 (34.9%), followed by 67 (22.3%), every day: 55 (18.3%), and four days a week: 26 (8.6%). The practice time reveals

that 126 (41.9%) of athletes prefer training only in the morning, 144 (47.8%) do afternoon sessions, and 31 (10.3%) engage in both morning and afternoon training. When considering the hours of training per day, most athletes 95 (31.6%) train for 1 to 1:30 hours, followed by 83 (27.6%) for 1:30 to 2 hours, 58 (19.3%) for 30 minutes to 1 hour, and 65 (21.6%) for above 2 hours. Regarding competition frequency per year, 150 (49.8%) of athletes compete twice a year, 93 (30.9%) compete once a year, and 58 (19.3%) compete thrice a year. Finally, the level of competition showcases diverse participation, with 122 (40.5%) at the national level, 109 (36.2%) at the regional level, and 70 (23.3%) at the international level.

Table 1: Socio-demographic information (n=301).

Variables	Frequency	%
Clubs name		
Sebata	30	10.0
Burayu	33	11.0
LagaTafo	35	11.6
Sululta	31	10.3
Galan	28	9.3
Dukem	29	9.6
Adama	32	10.6
Holota	17	5.6
Oromia Construction Corporation (OCC)	36	12.0
Assela	30	10.0
Total	301	100
Sex		
Male	156	51.8
Female	145	48.2
Total	301	100
Age (years)		
Under 18	148	49.2
18-23	140	46.5
24-29	13	4.3
Total	301	100
Educational		
Below high school	29	9.6
High school	162	53.8
Graduate	53	17.6
College certificate and diploma	47	15.6
Degree	10	3.3
Total	301	100
Marital status		
Single	297	98.7
Married	2	0.7
Divorced	2	0.7
Total	301	100
Monthly income (birr)		
1000-2000	95	31.6
2000-4000	125	41.5
Greater than 4000	81	26.9
Total	301	100

Table 2: Sports profile of athletes.

Variables	Frequency	Percentage
Athletic events		
Middle distance	190	63.1
Long distance	111	36.9
Total	301	100
Races (m)		
800	39	13.0
1500	53	17.6
3000 steeplechases	44	14.6
3000	55	18.3
5000	54	17.9
10000	56	18.6
Total	301	100
Years spent in the club since joining		
6 months-1 year	66	21.9
1-2	93	30.9
2-3	22	7.3
3-4	70	23.3
Above 5	50	16.6
Total	301	100
Training frequency (train per week)		
Every day	55	18.3
3 days	105	34.9
4 days	26	8.6
5 days	67	22.3
Total	301	100
Time of practice (training time)		
Only morning	126	41.9
Only afternoon	144	47.8
Both morning and afternoon	31	10.3
Total	301	100
Hours of train per day		
30 minutes-1 hour	58	19.3
1 hour-1:30 hours	95	31.6
1:30-2 hours	83	27.6
Above 2 hours	65	21.6
Total	301	100
Frequency of athlete competition per year		
Once	93	30.9
Twice	150	49.8
Thrice	58	19.3
Total	301	100
Level of competition		
International	70	23.3
National	122	40.5
Regional	109	36.2
Total	301	100

The dietary practices of athletes were assessed through various parameters, revealing moderate levels of agreement on nutritional practices. For example, skipping meals had a mean response of 3.56, SD=1.043, reflecting moderate agreement. Eating meals 3-4 hours before an event had a mean response of 3.40, SD=1.059. Consuming carbohydrates before exercise received a mean response of 3.54, SD=1.096, and moderate agreement was also shown. Regular protein intake had a mean response of 3.30, SD=1.127, indicating moderate agreement. Including whole grains in the diet showed a mean response of 3.27,

SD=1.177, reflecting moderate agreement, with whole grains providing essential nutrients and sustained energy.

The choice of healthier fats over unhealthy ones had a mean response of 3.33, SD=1.108, indicating moderate agreement, as healthy fats are important for reducing inflammation and supporting overall health. Using vegetables in daily meals had a mean response of 3.19, SD=1.235, reflecting moderate agreement; vegetables are crucial for providing vitamins, minerals, and antioxidants.

Incorporating dairy products had a mean response of 2.90, SD=1.215, indicating lower agreement, although dairy products are important for bone health and provide essential nutrients like calcium. Taking vitamin and mineral supplements had a mean response of 3.03, SD=1.073, suggesting moderate agreement, as supplements can help fill nutritional gaps and support overall health. Seeking guidance from nutritionists had a mean response of 2.90, SD=1.215, indicating lower agreement, despite professional guidance significantly improving dietary practices and performance. Overall, the mean across all parameters is 3.24, SD=1.135, suggesting

a moderate agreement among athletes regarding the presented dietary practices.

The study conducted an independent t-test to compare the dietary intake practices of male and female athletes. The results showed a significant difference in dietary intake practice scores between male and female athletes. Levene's test for homogeneity of variance indicated a violation of the assumption of equal variances ($F_{(1,299)}$ =1.343, p=0.353). Therefore, the t-test revealed a significant difference in dietary intake practices between male and female athletes (t=3.514, p=0.047). This suggests that male and female athletes differed significantly in their dietary habits, with males having a mean dietary intake practice score of 2.481 and females 2.524. Sports dietitians significantly influence both male and female athletes' nutritional knowledge and dietary habits.

The one-way ANOVA indicated no significant difference in dietary intake practices among different age groups (F=1.651, p=0.001). This implies that age may not be a significant factor in influencing dietary habits among athletes.

Table 3: Means and standard deviations athletes' dietary intake practice.

S. no.	Athletes' response to dietary practice	Mean	SD
1	I often skip at least one meal per day during the week	3.56	1.043
2	I usually have my meal 3 to 4 hours before exercising	3.40	1.059
3	I consume carbohydrates (e.g., grains, fruits, vegetables) before exercise to maintain and fuel my performance	3.54	1.096
4	I use regularly protein sources (e.g., meat, chicken, fish) in my meals to support muscle repair, growth and make hormones to boost the immune system	3.30	1.127
5	I constantly include whole grains like bread, cereals, pasta, potatoes, or rice in my diet.	3.27	1.177
6	I consciously choose healthier fats (e.g., avocados, nuts) over unhealthy fats (e.g., fried foods)	3.33	1.108
7	I use vegetables, such as broccoli, tomatoes, carrots, or salad, in my daily meals	3.19	1.235
8	I seek guidance from a nutritionist or dietitian to optimize my dietary choices	2.90	1.215
9	I often take a vitamin and mineral supplement during the week	3.03	1.073
10	I regularly incorporate dairy products such as milk, yogurt, or cheese into my diet	2.90	1.215
	Overall	3.24	1.135

Table 4: Gender and dietary intake practice of athletes (independent sample t-test).

Variables	Equal variances assumed	Equal variances not assumed
Levene's test for equality of variances		
F	1.343	
Sig.	0.353	
T	3.514*	4.193
Df	299	296.891
Sig. (2-tailed)	0.047	0.034
T-test for equality of means		
Mean difference	2.4230	2.4230
Std. error difference	0.03543	0.03543
95% confidence interval of the difference		
Lower	1.203	0.706
Upper	4.273	5.746

Table 5: Age and dietary intake practice of athletes (one-way ANOVA).

Source of variation	Sum of squares	Df	Mean square	F	Sig.
Between groups	33.311	2	16.655	177.168	0.001
Within groups	28.034	298	0.094		
Total	61.345	300			

Table 6: Clubs and dietary intake practice of athletes (one-way ANOVA).

Source of variation	Sum of squares	Df	Mean square	F	Sig.
Between groups	13.328	9	1.481	2.301	0.016
Within groups	187.245	291	0.643		
Total	200.573	300			

Table 7: Race and dietary intake practice of athletes (one-way ANOVA).

Source of variation	Sum of squares	Df	Mean square	F	Sig.
Between groups	7.767	5	1.553	2.377	0.039
Within groups	192.806	295	0.654		
Total	200.573	300			

Table 8: Experience and dietary intake practice of athletes (one-way ANOVA).

Source of variation	Sum of squares	Df	Mean square	F	Sig.
Between groups	78.384	3	26.128	38.765	0.001
Within groups	200.190	297	0.674		
Total	278.574	300			

The one-way ANOVA indicated a significant difference in dietary intake practices among athletes affiliated with different clubs (F=2.301, p=0.016).

The one-way ANOVA revealed a significant difference in dietary intake practices across different racial groups (F=2.377, p=0.039).

The one-way ANOVA indicated no significant difference in dietary intake practices based on athletes' experience levels (F=0.190, p=0.001). This suggests that athletes' experience in track events may not significantly impact their dietary practice.

DISCUSSION

The analysis of dietary practices among Ethiopian track athletes reveals significant variations based on gender, age, club affiliation, race, and experience, highlighting the need for targeted nutrition education. A study conducted among adolescent sports trainees in Bangladesh found that male athletes exhibited significantly higher nutritional knowledge scores than female athletes. Additionally, athletes over 15 demonstrated better knowledge scores than their younger counterparts. However, the study did not find a significant association between educational level and nutritional knowledge.[21] Similarly, research involving professional athletes in Iran reported no significant differences in nutritional knowledge, attitude, and performance across different age groups, sports, or educational levels. This suggests that age, sport type, and education may not significantly influence athletes' nutritional knowledge and practices.[22]

Athletes showed moderate agreement on dietary habits, with a tendency to skip meals and limited professional nutritional guidance, underscoring the importance of incorporating tailored dietary advice into sports development strategies. Additionally, the validated talent identification questionnaire supports enhanced athlete evaluation and development, reinforcing the need to integrate effective nutritional practices for optimizing performance.[23]

Research indicates that athletes generally exhibit a moderate level of agreement regarding various aspects of their dietary practices. However, recent studies have shown that nutrition education interventions can lead to improved nutritional knowledge and dietary intake. The interplay between nutritional knowledge, attitudes, and dietary behaviors is crucial for an athlete's health and performance.[24] A study revealed that athletes who consulted a sports dietitian had a better understanding of nutrient periodization and exhibited healthier dietary habits.[25] Notably, gender differences were apparent, with male athletes more likely to consume fast food and have higher alcohol intake during competitive seasons, while female athletes tended to prepare meals and regularly eat breakfast. Younger athletes, particularly those in their late teens, often have less established dietary practices and may struggle to meet their nutritional needs due to limited

knowledge and access to resources. A study highlighted that while younger athletes generally follow basic nutritional guidelines, they frequently fail to optimize their diets for performance, resulting in inadequate energy intake relative to their training demands.[26]

Other studies also found that the club environment, including coaching practices and health promotion focus, significantly impacts athletes' nutritional consumption habits.[12,24] Clubs prioritizing nutrition education and fostering a supportive culture around healthy eating are more likely to see athletes adopt ideal dietary habits, aligning with previous research on the influence of training environments and team culture on eating habits. The performance of athletes in various distance races is significantly influenced by their dietary practices, which are often shaped by their race categories. Athletes from East Africa, particularly those training at high altitudes, experience enhanced aerobic capacity and endurance due to the physiological adaptations associated with altitude training.[27] The distribution of athletes across race categories reflects specialization influenced by cultural and environmental factors, with participation levels suggesting that athletes gravitate toward events aligning with their training environments and physiological strengths. The training volume and intensity differ significantly between middle-distance and long-distance runners, with marathoners typically engaging in higher weekly mileage and specific training regimens tailored to their race distances.[27]

Pacing strategies differ by race category, with middle-distance events requiring a mix of speed and endurance, while long-distance races emphasize sustained aerobic performance.[28] The relationship between dietary habits and race performance is complex, and understanding the unique nutritional needs of each race type is key to optimizing athletes' results. Tailored nutrition plans can improve training adaptations and outcomes. Interestingly, experience level did not impact dietary habits, supporting findings that experience doesn't always correlate with nutritional knowledge. These results stress the need for targeted nutrition education for athletes.[29]

Limitations

While this study provides valuable insights, it has some limitations. It focuses only on Ethiopian track athletes, making it hard to apply the findings to other sports or regions. It also lacks physiological assessments, like body composition or metabolism, which could give a clear picture of diet's impact on performance. Additionally, the cross-sectional design captures only a short-term view of dietary practices, making it difficult to track long-term changes or causes. Future research should include a wider range of athletes, long-term studies, and objective nutritional assessments for more reliable results.

CONCLUSION

The study provides a comprehensive analysis of dietary intake practices among athletes, revealing moderate agreement on various dietary practices. Parameters such as meal skipping, carbohydrate consumption before exercise, protein intake, inclusion of whole grains, healthier fats, and vegetable consumption all showed moderate agreement among athletes. However, there were lower levels of agreement on seeking guidance from nutritionists and incorporating dairy products, highlighting areas for improvement. Gender differences were significant, with males generally exhibiting better dietary practices than females. Age also shows a significant impact on dietary habits, and club affiliation and race showed significant influences on dietary practices. Experience in track events did not significantly affect dietary intake practices. These findings underscore the need for tailored nutrition education and support for athletes, emphasizing the importance of individualized approaches based on demographic factors such as gender, club affiliation, and race.

REFERENCES

1. Heikkilä M, Lehtovirta M, Autio O, Fogelholm M, Valve R. The impact of nutrition education intervention with and without a mobile phone application on nutrition knowledge among young endurance athletes. Nutrients. 2019;11(9):2249.
2. Grete RH, Carol AF, Jane EE, Kimberli P. Nutrition knowledge, practices, attitudes, and information sources of Mid-American Conference college softball players. Food Nutr Sci. 2011;2(2):109-17.
3. Maughan RJ, Burke LM. Practical nutritional recommendations for the athlete. Nestlé Nutrition Institute Workshop Series. 2011;69:131-49.
4. Reza MN, Rahman MH, Islam MS, Mola DW, Andrabi SMH. Assessment of motor fitness metrics among athletes in different sports: An original research. Phys Educ Theory Methodol. 2024;24(1):47-55.
5. Behera BK, Prasad R, Shyambhavee N. Primary health-care goal and principles. Elsevier eBooks. 2022;221-39.
6. Vrkatić A, Grujičić M, Jovičić-Bata J, Novaković B. Nutritional knowledge, confidence, attitudes towards nutritional care and nutrition counselling practice among general practitioners. Healthcare. 2022;10(11):2222.
7. Nassanga P, Okello-Uma I, Ongeng D. The status of nutritional knowledge, attitude and practices associated with complementary feeding in a post-conflict development phase setting: The case of

Acholi sub-region of Uganda. Food Sci Nutr. 2018;6(8):2374-85.

8. Ashoori M, Omidvar N, Eini-Zinab H, Shakibazadeh E, Doustmohamadian A, Abdar-Esfahani B, et al. Food and nutrition literacy status and its correlates in Iranian senior high-school students. BMC Nutr. 2021;7(1).

9. Mehri A, Jafari N, Akbarzadeh I, Siri FH, Abbassgholizadeh N. Students' nutrition literacy and the existence of health care providers in Iranian schools. J Res Health Sci. 2020;20(2):e00476.

10. Mediratta S, Mathur P. Determinants of food choices among adults (20-40 years old) residing in Delhi, India. Curr Develop Nutr. 2023;7(2):100029.

11. Carvalhal MMDL, Silva RMJ, Pereira TC, Monteiro CR, Gomes DL, Quaresma JAS. Relationship between determinants of food choices and socioeconomic and demographic factors of individuals with hepatitis B and C in the Amazon Region. Foods. 2023;12(12):2359.

12. Pelly FE, Thurecht RL, Slater G. Determinants of food choice in athletes: A systematic scoping review. Sports Med. 2022;8(1):77.

13. Mola DW, Shaw D. Significance of managerial skills for talent development in Ethiopian athletes. Int J Kinesiol Sports Sci. 2024;12(2):21-9.

14. Taye AG, Mola DW, Rahman MH. Analyzing the nutritional awareness, dietary practices, attitudes, and performance of U-17 football players in Ethiopia. Phys Educ Theory Methodol. 2024;24(1):110-7.

15. Rosenbloom CA, Jonnalagadda SS, Skinner R. Nutrition knowledge of collegiate athletes in a Division I National Collegiate Athletic Association institution. J Am Dietetic Assoc. 2002;103:418-21.

16. Zawila LG, Steib CS, Hoogenboom B. The female collegiate cross-country runner: Nutritional knowledge and attitudes. J Athlet Training. 2003;38(1):67-74.

17. Supriya V. Knowledge, attitude, and dietary practices of track and field athletic men and women aged 18-22 years. Int J Innov Res Develop. 2013;2(11):399-404.

18. Yamane T. Statistics: An introductory analysis. Harper & Row. 1967.

19. Mola DW, Shaw D. Assessing the reliability of the talent development environmental questionnaire: A pilot study. Granthaalayah. 2024;12(3):117-22.

20. Israel GD. Determining sample size. University of Florida, IFAS Extension. 1992.

21. Mola DW, Shaw D. Analyzing the reliability and validity of talent identification practices for athletes: An adaptation study. Educational Administration: Theory and Practice. 2024;30(5):12277-84.

22. Bakhtiar M, Masud-Ur-Rahman M, Kamruzzaman M, Sultana N, Rahman SS. Determinants of nutrition knowledge, attitude and practices of adolescent sports trainee: A cross-sectional study in Bangladesh. Heliyon. 2021;7(4):e06637.

23. Hasanpouri A, Rahmani B, Gharakhanlou BJ, Solaimanian S, Shahsavari S, Rasouli A, et al. Nutritional knowledge, attitude, and practice of professional athletes in an Iranian population (a cross-sectional study). BMC Sports Sci Med Rehab. 2023;15(1).

24. Klein DJ, Eck KM, Walker AJ, Pellegrino JK, Freidenreich DJ. Assessment of sport nutrition knowledge, dietary practices, and sources of nutrition information in NCAA Division III collegiate athletes. Nutrients. 2021;13(9).

25. Hull MV, Jagim AR, Oliver JM, Greenwood M, Busteed DR, Jones MT. Gender differences and access to a sports dietitian influence dietary habits of collegiate athletes. J Int Soc Sports Nutr. 2016;13:38.

26. Heaney S, O'Connor H, Michael S, Gifford J, Naughton G. Nutrition knowledge in athletes: a systematic review. Int J Sport Nutr Exerc Metab. 2011;21(3):248-61.

27. Haugen T, Seiler S, Sandbakk Ø, Tønnessen E. The Training and Development of Elite Sprint Performance: an Integration of Scientific and Best Practice Literature. Sports Med Open. 2019;5(1):44.

28. Casado A, Hanley B, Jiménez-Reyes P, Renfree A. Pacing profiles and tactical behaviors of elite runners. J Sport Health Sci. 2021;10(5):537-49.

29. Riviere AJ, Leach R, Mann H, Robinson S, Burnett DO, Babu JR, Frugé AD. Nutrition knowledge of collegiate athletes in the United States and the impact of sports dietitians on related outcomes: A narrative review. Nutrients. 2021;13(6):1772.